

Optimizing Supply Chain Finance and Macroeconomic Factors: Impacts on Stock Returns of NASDAQ and Dow Jones-Listed U.S. Firms

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ABSTRACT

Purpose - This paper aims to investigate the impact of supply chain finance and macroeconomic factors on stock returns of non-financial U.S. firms listed on DJIA30 and NASDAQ100 between 2000 and 2024.

Design/methodology/approach - The authors use mixed-effect regression models and standard statistical tools that include descriptive statistics, multicollinearity test, hausman test, RESET test, heteroskedasticity test and hypothesis testing to assess the significance and direction of relationships between variables and stock returns.

Findings - Results indicate that accounts payable turnover and inventory turnover have a positive, significant effect on stock returns, while accounts receivable turnover has a negative, significant effect. Firm size positively influences stock returns, whereas return on assets and debt-to-equity ratio are insignificant. Among macroeconomic factors, unemployment rate, GDP growth, and federal funds rate significantly and positively impact stock returns, while inflation shows an insignificant negative effect. The model explains a substantial variance in stock returns, validated by the Wald Chi² test ($p < 0.000$), confirming overall model significance.

Originality/value - This paper contributes to integrate supply chain finance metrics with macroeconomic factors to examine their combined impact on stock returns over three decades. Unlike prior research focusing solely on financial ratios or macroeconomic indicators, this work highlights operational efficiency as a critical determinant of market performance. By employing a mixed-effect regression model and controlling for industry type, the study provides robust evidence of how supply chain and economic variables jointly shape stock returns. These insights offer novel contributions to corporate finance, supply chain management, and investment decision-making literature.

KEYWORDS: Supply chain finance, Accounts payable turnover, Accounts receivable turnover, Inventory turnover, ROA, Firm size, debt-to-equity ratio, Macroeconomic Factors.

1. INTRODUCTION

Stock returns are affected by the intricate relationship between firm-level operational efficiency and overarching macroeconomic conditions. Traditional asset pricing models focus on market risk factors; however, recent studies underscore the increasing significance of supply chain finance (SCF) as a strategic tool for improving liquidity and profitability (Dou & Zhao, 2024; Li et al., 2023). SCF optimization, as assessed by accounts payable turnover, accounts receivable turnover, and inventory turnover, is essential for effective working capital management, minimizing financing costs, and demonstrating operational strength to investors (Akurugu et al., 2025). Effective management of these components enhances cash flow and reduces liquidity risk, thereby impacting firm valuation and stock performance (Wajo, 2021; Kumaraswamy & George, 2019).

Stock return performance is heavily impacted by macroeconomic conditions as well as firm-specific strategies. Important metrics like the effective federal funds rate, real GDP growth, natural unemployment rate, and quarterly inflation rate have a substantial impact on investor sentiment and company profitability (Fama, 1981; Flannery & Protopapadakis, 2002). Increases in interest rates are one factor that affects borrowing costs; inflationary pressures as well as fluctuations in the labor market affect the purchasing power of consumers and company profit margins (Shamsudin et al., 2021). All of these interactions show how critical it is to create integrated analytical models that consider external economic factors in addition to internal financial management. The combined impact of macroeconomic variables and supply chain efficiency on stock returns inside large-cap U.S. corporations has been understudied, despite the abundance of literature on either topic alone. For the 90 non-financial companies that make up the DJIA30 and NASDAQ100 from 2000 to 2024, this disparity is of paramount importance since they are involved in international supply

Optimizing Supply Chain Finance and Macroeconomic Factors: Impacts on Stock Returns of NASDAQ and Dow Jones-Listed U.S. Firms

chains that are quite vulnerable to changes in the economy. In order to help investors, managers, and lawmakers align operational decisions with market expectations in uncertain times, addressing this nexus gives crucial information. Consequently, this study uses data from prominent American companies to examine how supply chain finance optimization and macroeconomic factors affect stock returns. Findings provide practical methods for increasing shareholder value and add to a more complete picture of the forces at work in the stock returns by integrating operational finance with macroeconomic factors.

2. RESEARCH PROBLEM

Despite a wealth of literature on the topic, empirical evidence regarding the interplay between supply chain finance (SCF) optimization as measured by accounts payable, accounts receivable, and inventory turnover, and macroeconomic variables like quarterly inflation, natural unemployment, real GDP growth, and the effective federal funds rate is scarce.

The study doesn't yet know how these factors interact to affect company value and investor confidence since most research look at them alone, with an emphasis on operational efficiency or macroeconomic data.

This gap is particularly critical for large-cap U.S. firms listed on NASDAQ100 and DJIA30, which operate in globally integrated supply chains and are highly sensitive to economic fluctuations. Consequently, resolving this issue is critical for developing a model that correlates internal financial strategies with external economic factors in order to analyze stock returns. Does supply chain financing and macroeconomic factors affect stock returns? According to the research problem question, there are ten sub questions for this study, which are:

1. Does accounts payable turnover impact the stock returns of non-financial firms listed on DJIA30 and NASDAQ100 from 2000 to 2024?
2. Does accounts receivable turnover impact the stock returns of non-financial firms listed on DJIA30 and NASDAQ100 from 2000 to 2024?
3. Does account inventory turnover impact the stock returns of non-financial firms listed on DJIA30 and NASDAQ100 from 2000 to 2024?
4. Does return on assets impact the stock returns of non-financial firms listed on DJIA30 and NASDAQ100 from 2000 to 2024?
5. Does firm size impact the stock returns of non-financial firms listed on DJIA30 and NASDAQ100 from 2000 to 2024?
6. Does debt to equity ratio impact the stock returns of non-financial firms listed on DJIA30 and NASDAQ100 from 2000 to 2024?
7. Does Inflation rate impact the stock returns of non-financial firms listed on DJIA30 and NASDAQ100 from 2000 to 2024?
8. Does natural rate of unemployment impact the stock returns of non-financial firms listed on DJIA30 and NASDAQ100 from 2000 to 2024?
9. Does real GDP growth rate impact the stock returns of non-financial firms listed on DJIA30 and NASDAQ100 from 2000 to 2024?
10. Does effective federal fund rate impact the stock returns of non-financial firms listed on DJIA30 and NASDAQ100 from 2000 to 2024?

3. RESEARCH OBJECTIVES

1. To examine the impact of accounts payable turnover on stock returns
2. To analyze the impact of accounts receivable turnover on stock returns
3. To examine the impact of account inventory turnover on stock returns
4. To assess the impact of return on assets on stock returns
5. To examine the impact of firm size on stock returns
6. To analyze the impact of debt-to-equity ratio on stock returns
7. To examine the impact of Inflation rate on stock returns
8. To analyze the impact of natural rate of unemployment on stock returns
9. To assess the impact of real GDP growth rate on stock returns
10. To examine the impact of effective federal fund rate on stock returns

4. LITERATURE REVIEW

4.1 Accounts Receivable Turnover

Rahayu et al. (2023) investigated on the effects of inventory turnover, cash turnover, and accounts receivable turnover on the economic performance of pharmaceutical companies that were listed between 2017 and 2021 on the Indonesian Stock Exchange. A panel data regression analysis approach was used in the study, using secondary data from eight pharmaceutical firms. The findings revealed that cash turnover has a negative and non-significant impact on economic profitability. On the other hand, the turnover of

Optimizing Supply Chain Finance and Macroeconomic Factors: Impacts on Stock Returns of NASDAQ and Dow Jones-Listed U.S. Firms

accounts receivable had a negative and significant impact, indicating that increased efficiency in managing receivables is linked to reduced economic profitability. In contrast, inventory turnover had a positive and substantial impact on stock returns, implying that in this industry, faster inventory cycles result in greater stock returns.

Mmbaya (2021) examined how manufacturing companies listed on the Nairobi Securities Exchange fared financially in relation to their accounts receivable management. The study, which covered the years 2009–2020, used a sample of eight companies using multiple regression analysis to evaluate how various accounts receivable measures affected profitability as determined by return on assets (ROA). The average collection period, the percentage of bad debts to accounts receivable, company size, and capital structure were all considered independent variables. The results showed that managing accounts receivable has a positive effect on profitability, especially when it comes to decreasing the average collection period and minimizing bad debts. Since increased profitability frequently corresponds with improved stock performance, this suggests that effective accounts receivable management might also indirectly affect stock market returns. Accordingly, the study supports up the idea that careful accounts receivable administration is essential for maximizing financial performance, which in turn can raise stock returns.

Eryatna et al. (2021) investigated how the profitability of consumer products businesses listed on the Indonesia Stock Exchange between 2016 and 2018 is impacted by cash turnover, receivable turnover, and inventory turnover. Using multiple regression analysis, the study found that cash turnover no significant effect on profitability. However, when examined independently, inventory turnover and receivable turnover both shown each had a significant positive impact on profitability. Furthermore, a comprehensive analysis of all three variables revealed a significant favorable impact on profitability, consequently effectively managing these crucial working capital elements can significantly improve a company's financial success.

In their 2019 study, Kumaraswamy and George examined the effects of days sales outstanding and accounts receivable turnover on the profitability of manufacturing companies in the capital goods, energy, and materials sectors that were listed on the Tadawul Stock Exchange in Saudi Arabia between 2009 and 2017. They found that the turnover of accounts receivable had a strong, positive, and significant impact on firm profitability using a fixed effect regression analysis on a sample of 41 companies. It can be inferred that effective accounts receivable management improves cash flows and consequently profitability. These findings have significant ramifications since they show that improving accounts receivable turnover increases business profitability and may even have an indirect impact on stock returns. Higher stock prices are frequently the result of improved profitability, which is driven by efficient receivables management. This is because the market values the company's improved financial health and lower liquidity risk. As a result, the study emphasizes how strategically important receivable management is to enhancing shareholder value and stock market performance.

4.2 Accounts Payable Turnover

Kadima et al. (2021) explored the impact of the Accounts Payables Conversion Period on the liquidity of equity securities for companies listed at the Nairobi Securities Exchange. The study, conducted with a sample of 61 firms over a decade from 2007 to 2016, employed a descriptive survey research design, utilizing secondary panel data. The findings revealed that a longer accounts payable conversion period significantly enhances the liquidity of equity securities. This result implies that firms that efficiently manage their accounts payable, thus extending their payment terms without compromising their operational efficiency, tend to maintain better liquidity levels. This enhanced liquidity can contribute to higher stock market returns as it reflects a firm's financial stability and operational efficiency, attracting more investors due to reduced liquidity risk.

Ochieng et al. (2020) investigated how Working Capital Management (WCM) affected the financial performance of manufacturing and related companies listed on the Nairobi Securities Exchange in Kenya Between 2006 and 2016. Therefore, the study attentive on four key components of WCM such as accounts receivables, inventory, accounts payables, and cash management. According to the analysis, effective management of these elements significantly improves company profitability. In particular, it was found that financial performance improved when accounts payable turnover was optimized. This implies that companies can conserve money and reduce financing costs by carefully controlling the terms and timing of their supplier payments. They may also be able to increase their ROA, which could have an indirect impact on stock market returns. Given that increased profitability is frequently associated with higher stock valuations, these companies are likely to see improved stock market performance as they increase their profitability through efficient WCM.

Matole (2019) examined how the financial performance of manufacturing companies listed on the Nairobi Securities Exchange between 2014 and 2018 was impacted by WCM, including turnover in accounts payable. The study focused on inventory days, accounts payable days, and Cash Conversion Cycle (CCC) using a descriptive design and secondary data analysis. The findings showed that profitability is significantly improved by effectively managing the turnover of accounts payable in addition to other working capital components. Optimizing accounts payable turnover had a particularly significant effect, indicating that companies can save money, reduce financial costs, and increase profitability by carefully extending their payable periods. Because companies with enhanced financial performance tend to have higher market valuations, this increase in profitability has an indirect impact on stock returns. This suggests that improved stock returns and optimized accounts payable turnover are positively correlated.

Optimizing Supply Chain Finance and Macroeconomic Factors: Impacts on Stock Returns of NASDAQ and Dow Jones-Listed U.S. Firms

Bammeri and Dehani (2014) used the CCC as a crucial WCM indicator to investigate how capital management affected the stock returns of companies listed on the Tehran Stock Exchange. The study, which conducted between 2002 and 2011, examined the relationships between the CCC's elements, including the periods for the collection of accounts receivable, the inventory cycle for goods, the accounts payable payment period, and stock returns for 112 companies. The results showed that neither the accounts payable payment period nor the accounts receivable collection period had a significant effect on stock returns. Nonetheless, a significant correlation was found between the goods inventory cycle period and stock returns, indicating that effective inventory control may have an impact on stock performance. The study's final conclusion was that the CCC, which represents overall effective WCM, had an insignificant effect on the stock returns of the companies under examined.

4.3 Inventory Turnover

As a financial metric, inventory turnover ratio measures the frequency with which a company sells and replaces its inventory over time (Azmal et al., 2019). With rapid sales and little stock on hand, the company's inventory performance was well-managed, leading to a high turnover rate (Chandra & Juliawati, 2020). However, according to Breivik et al. (2023), a low inventory turnover suggests that the company has been storing goods for a while, which raises holding costs and puts the company at risk of obsolescence.

Truong (2023) investigated at how listed manufacturing companies on the Ho Chi Minh City Stock Exchange (HOSE) fared financially between 2010 and 2019 in relation to inventory management, including inventory turnover. The dependent variables in this study were operating cash flows and ROA, and the sample consisted of fifty manufacturing companies. Additionally, the inventory conversion duration was the independent variable. The findings suggested that effective inventory management is essential for enhancing business performance since optimizing inventory turnover significantly reduces operating cash flow and firm profitability. Since stronger stock performance is typically linked to higher profitability, this increase in profitability has an indirect impact on stock returns.

Srour et al. (2021) studied how inventory management affected the performance of companies that were listed on the Egyptian stock exchange between 2016 and 2020. Their study aimed to investigate the relationship between a firm's financial performance and inventory turnover optimization. The relationship between inventory turnover and profitability indicators such ROE and ROA were examined in the study using data from a variety of industries. Their results demonstrated that better financial results for companies are the result of effective inventory management, which involves preserving optimal inventory turnover levels. In particular, it was found that inventory turnover optimization improved profitability, which, in turn, suggests that it would probably improve stock returns. This suggests firms might achieve better financial performance and possibly higher stock valuation if they manage their inventory levels more effectively.

Hançerlioğulları et al. (2016) studied how demand uncertainty affected inventory turnover performance in the retail sector of the United States between 1985 and 2009. Regression analysis was used to examine the relationship between inventory turnover and variables such capital intensity, sales surprise, and the accuracy of sales forecasts. The study used a sample of 304 publicly listed U.S. retail firms. The findings showed that inventory turnover has a positive correlation with capital intensity and sales surprise and a negative correlation with the mean absolute percentage error of quarterly sales forecasts. According to these results, optimizing inventory turnover through forecast accuracy management and sales dynamics adjustment can have a beneficial impact on profitability, which in turn affects stock returns indirectly because improved stock returns is usually linked to higher profitability.

4.4 Returns Of Assets

Saragih (2018) analyzed the correlation between stock returns and Return on Assets (ROA), Return on Equity (ROE), and Debt to Equity Ratio (DER) for 24 wholesale and retail trade companies listed on the Indonesia Stock Exchange from 2010 to 2011. The study employed multiple linear regression and classical assumption tests, revealing that ROA exerted an insignificant negative effect on stock returns. This suggests that asset profitability did not significantly impact investor decisions within this sector. ROE demonstrated a positive yet statistically insignificant impact, whereas DER revealed a negative and statistically insignificant effect on stock returns. The findings indicate that investors in wholesale and retail trade companies may prioritize factors beyond asset efficiency, equity returns, or leverage in their investment decisions.

Nadyayani et al. (2021) looked at manufacturing companies listed on the Indonesia Stock Exchange from 2017 to 2019 and how profitability affected stock returns. The study used return on assets (ROA) as a metric for profitability and multiple regression analysis to determine the effect of ROA. The results showed that ROA had a significant positive impact on stock returns, demonstrating that companies with higher asset utilization and profitability typically draw more investors and have better market performance. Manufacturing companies can increase their profitability and shareholder value by concentrating on operational efficiency and asset management, according to the study.

4.5 Firm Size (Natural Log of Total Assets)

Astakhov et al. (2019) performed a meta-analysis encompassing 102 empirical studies that investigate the correlation between firm size and stock returns. Firm size was predominantly assessed through the natural logarithm of total assets or market capitalization.

Optimizing Supply Chain Finance and Macroeconomic Factors: Impacts on Stock Returns of NASDAQ and Dow Jones-Listed U.S. Firms

The analysis indicated that, after adjusting for publication bias, the size premium averages 1.72% per year between the smallest and largest firms. The research indicates that although the size effect has diminished in recent decades, it continues to be statistically significant across global markets. The authors suggest the inclusion of firm size in multifactor models, noting that its explanatory power is contingent upon regional and temporal variations.

Rona et al. (2024) examined the influence of firm size and systematic risk on stock returns across various industries utilizing the CAPM framework. Firm size was quantified using the natural logarithm of total assets, while systematic risk was assessed via beta coefficients. The research indicates that larger firms typically demonstrate reduced systematic risk and more consistent returns in contrast to smaller firms, which are characterized by greater volatility and risk-adjusted returns. The authors conclude that firm size significantly influences stock performance and advise investors to factor in size in conjunction with risk factors when developing diversified portfolios.

For Indonesian firms, Pasaribu and Nugroho (2023) looked at how firm size as a moderating variable affected the correlation between financial fundamentals and stock returns for 46 consumer goods firms listed on the Indonesia Stock Exchange during the 2018–2021 period. The study used multiple regression analysis to measure firm size as the natural log of total assets. It discovered that larger firms had a stronger impact on market performance and a positive effect on stock returns. The authors state that larger firms generate more profit due to investor trust and economies of scale. Firms should prioritize growth initiatives to increase scale and market valuation, according to the study.

4.6 Debt To Equity Ratio

Helmiawati et al. (2025) investigated the influence of Return on Assets (ROA), Debt-to-Equity Ratio (DER), and Current Ratio (CR) on stock returns, considering dividend policy as an intervening variable, for 12 mining companies listed on the Indonesia Stock Exchange from 2020 to 2022. The study employed Partial Least Squares (PLS) analysis and determined that Debt-to-Equity Ratio (DER) significantly positively influences stock returns (path coefficient = 0.628, p-value = 0.000), suggesting that firms with greater leverage are likely to provide higher returns to shareholders. Nonetheless, the debt-to-equity ratio (DER) exhibited no significant impact on dividend policy, and dividend policy did not serve as a mediator in the relationship between DER and stock returns. The findings indicate that investors might perceive increased debt utilization as an indicator of growth potential or financial efficiency; however, dividend decisions do not affect this relationship.

Lubis et al. (2021), looked at stock returns for companies listed on the Indonesia Stock Exchange from 2009 to 2018 and how ROE and DER affected them. The study used multiple linear regression to determine that return on equity (ROE) significantly affects stock returns in a positive way, but return on equity (DER) has a negative but insignificant effect. The authors contend that elevated leverage can heighten financial risk without guaranteeing enhanced returns, leading investors to exercise caution regarding firms with high leverage. It is recommended that companies sustain moderate leverage to prevent negative market perceptions.

4.7 Quarterly Inflation Rate

Eldomiaty et al. (2020) investigated the impact of inflation and interest rates on stock prices utilizing quarterly data from non-financial enterprises listed on the DJIA30 and NASDAQ100 from 1999 to 2016. The research utilized a stock duration model in conjunction with Johansen cointegration tests, Granger causality analysis, and vector error correction models to evaluate long-term correlations. The results showed that stock prices are negatively related to inflation rates and positively correlated with real interest rates. Additionally, Granger-cause fluctuations in stock values are significantly affected by changes in interest rates and inflation, suggesting that inflation shocks have a negative impact on market valuations. Inflation is a drag on stock performance in major U.S. indices, according to the study, which finds that sustained inflationary pressures degrade equity values.

Chiang (2023) used the uncertainty hypothesis to study the 20 largest economies' stock returns in relation to predicted inflation from 1990 to 2023. For all but two nations Brazil and Russia the research indicated a negative relationship between anticipated inflation and stock returns when using a GED-APARCH model. More so than inflation forecasts, U.S. equity market volatility (EMV) amplifies the negative effect on stock returns around the world. This study lends credence to the uncertainty theory in global markets by demonstrating that speculation about future inflation and monetary policy have a negative effect on stock performance and a positive effect on volatility.

Inflation shocks in the post-COVID era and their impact on volatility in the US stock market were investigated by Thorbecke (2023). The study evaluated how investors will react to changes in inflation from 2020 to 2023 using a multi-factor model and inflation betas. Findings show that market valuations were greatly impacted by inflation spikes in 2021 and 2022 and subsequent falls, with the Federal Reserve's anti-inflationary actions making volatility even worse. Results show that post-pandemic stock performance was affected by the complicated relationship between inflation control measures and aggressive monetary tightening in reaction to inflation shocks, which increased uncertainty and destabilized equities markets.

Optimizing Supply Chain Finance and Macroeconomic Factors: Impacts on Stock Returns of NASDAQ and Dow Jones-Listed U.S. Firms

4.8 Natural Rate of Unemployment

Gonzalo and Taamouti (2017) examined the response of stock market returns to both anticipated and unanticipated unemployment rates utilizing U.S. data. The study utilized nonparametric Granger causality and quantile regression methods to analyze the nonlinear effects of unemployment on stock prices across various quantiles of the return distribution. The results demonstrate that expected unemployment rates exert a significant positive influence on stock prices within the 0.35–0.80 quantile range, whereas unexpected changes do not have a notable effect. The authors explain that this positive relationship arises because higher anticipated unemployment signals accommodative monetary policy by the Federal Reserve, which lowers interest rates and boosts equity valuations. Investor expectations of policy easing amid rising unemployment can enhance stock performance. The research indicates that labor market indicators, especially expected unemployment, significantly influence equity market dynamics via monetary policy mechanisms.

Real GDP Growth Rate

Across multiple economic cycles, Jain (2024) looked at the correlation between unemployment rates and stock market returns. In order to determine the impact of fluctuations in the unemployment rate on investor sentiment and equity valuations, the study used case studies and historical data. The results show that periods when the unemployment rate approaches to its natural rate coincide with periods of excellent stock returns, which are caused by confidence in the economy and strong macroeconomic fundamentals. During times of increasing unemployment, on the other hand, market performance tends to be weaker because investors anticipate slower growth and tighter liquidity.

Kilic and Wachter (2015) examined the correlation between unemployment, risk, and stock market valuations through a rare-event-based framework of labor market volatility. The research established a model that integrates time-varying risk and probabilities of economic disasters to elucidate variations in unemployment and equity prices. Results indicate that during high-risk periods, stock market valuations decrease and unemployment increases, demonstrating diminished incentives for firms to invest in hiring. This dynamic demonstrates the relationship between labor market slack and macroeconomic uncertainty in influencing equity returns. The research indicates that unemployment shocks, especially those linked to infrequent economic occurrences, have a substantial impact on stock market performance via risk mechanisms and investor anticipations.

4.9 Real GDP Growth Rate

Shala et al. (2025) investigated the correlation between GDP growth and stock market capitalization in G7 nations over a twenty-year period (2000–2020). The research utilized regression models to evaluate the relationship between economic growth and stock market expansion, determining the direction of influence between the two variables. The results demonstrate a significant positive correlation between GDP growth and stock market capitalization, suggesting that effective financial markets enhance the advantages of economic growth. The authors conclude that well-developed stock markets serve as catalysts for economic advancement, supporting the theoretical expectation that GDP growth improves equity market performance.

Through the use of case studies and historical data, Jain (2024) investigated how major economic factors, such as GDP growth, impacted stock market performance. The study's primary focus was on the relationship between GDP growth fluctuations, investor confidence, and equity valuations. Positive stock returns are often associated with robust GDP growth, according to the research. This is because robust GDP growth indicates robust economic activity and improved corporate profits. The paper does acknowledge that inflation and unemployment could reduce this effect, so it's not necessarily the case that GDP growth ensures strong equity returns. Based on the findings, GDP growth is a major factor influencing stock market performance, particularly in terms of profits expectations and market sentiment.

Fichtner and Joebges (2024) examined the long-term relationship between stock market returns and GDP growth utilizing data from 1991 to 2019. The research utilized asymmetric cointegration and ARDL bounds testing to analyze the dynamic impacts of stock price fluctuations on GDP. The findings indicate that a positive long-run relationship exists; however, the effect is weaker than anticipated and develops gradually over a period of two to three years. The authors contend that structural factors, including income distribution and foreign demand, play a role in the decoupling of stock returns from GDP growth. This study emphasizes the intricate relationship between economic growth and equity performance, shaped by various macroeconomic factors.

Using data from 43 countries throughout the globe between 1995 and 2015, Mladina and Germani (2016) looked at the correlation between GDP growth and stock market returns again. With an almost nonexistent explained variation (R^2), the analysis concluded that long-term real GDP growth and equity returns were not significantly related. Stock returns, according to the authors, are more affected by factors like valuation fluctuations, profits growth, and investor sentiment than by changes in aggregate GDP.

4.10 Effective Federal Fund Rate

Bernanke and Kuttner (2005) examined the effects of monetary policy alterations on equity prices utilizing U.S. data from 1989 to 2001. The research specifically examined the impact of unexpected changes in the federal funds rate on broad stock indices. The results demonstrate that an unexpected 25-basis-point reduction in the federal funds rate correlates with an estimated 1% rise in major stock indices. The research ascribes this effect mostly to alterations in anticipated excess returns rather than future dividends.

Optimizing Supply Chain Finance and Macroeconomic Factors: Impacts on Stock Returns of NASDAQ and Dow Jones-Listed U.S. Firms

or real interest rates. Monetary policy volatility can significantly impact equities valuations, highlighting the stock markets' susceptibility to interest rate changes.

The short-term impact of increases to the federal funds rate on the S&P 500 index and other U.S. equities markets was studied by Gkonis (2023). The study's findings show that the S&P 500 drops 0.62 percentage points for every percentage point increase in the federal funds rate, illustrating the negative effect of monetary policy tightening on market valuations. As investors adapt to less liquidity and higher borrowing rates, these effects become more apparent right after rate hikes, according to the research.

The effects of aggressive interest rate hikes on U.S. stock market volatility during the 2022–2023 tightening cycle were studied by Thorbecke (2023). Investor reactions to the Federal Reserve's 500-basis-point rise in the federal funds rate were evaluated using a multi-factor model and monetary policy betas. The results show that major indexes' stock returns were lower due to increased market volatility and uncertainty caused by fast rate spikes. Inflationary forces that remain after a sudden tightening of monetary policy greatly disrupt stock markets, according to the study's authors.

Garg (2008) examined the sectoral effects of variations in the federal funds rate on stock prices by utilizing weekly returns from Dow Jones sector indexes. The research utilized distinct OLS regression models for each sector, revealing that utilities, financials, telecom, and basic materials exhibit the highest sensitivity to fluctuations in interest rates. The relationship between stock prices and the federal funds rate was positive for these sectors, due to sector-specific demand and supply dynamics. The findings indicate that although overall market returns may decrease with interest rate increases, specific sectors may experience advantages from higher rates due to structural elements.

With data spanning 1980–2009, Javed et al. (2019) looked at how well federal funds rate shifts predicted monthly US stocks returns. Using ordinary least squares regression, the researchers discovered that interest rate fluctuations were a strong predictor of stock returns prior to the financial crisis, but that this relationship shrank during the crisis. During stable economic times, monetary policy shapes stock performance, as the research showed that changes in the federal funds rate had a greater effect on returns than increase in industrial production.

5. THEORY AND HYPOTHESES

This study integrates three major theoretical perspectives: **Working Capital Management Theory**, **Firm-Specific Factors Theory**, and **Macroeconomic Influence Theory** to explain the determinants of stock returns.

Working Capital Management Theory posits that efficient management of short-term assets and liabilities enhances liquidity and profitability, which ultimately improves shareholder value (Deloof, 2003; Lazaridis & Tryfonidis, 2006). Specifically, accounts payable turnover, accounts receivable turnover, and inventory turnover are critical components of supply chain finance that influence operational efficiency and cash flow (Warren et al., 2014). Faster receivable and inventory turnover typically signal effective resource utilization, while excessive reliance on payables may harm long-term financial health (Shin & Soenen, 1998).

Firm-Specific Factors Theory suggests that internal characteristics such as profitability ratios (ROA), firm size, and leverage significantly affect stock performance (Fama & French, 1992). Larger firms often benefit from economies of scale and better access to capital markets, while high leverage can increase financial risk and reduce investor confidence (Modigliani & Miller, 1958).

Macroeconomic Influence Theory emphasizes that external economic conditions shape investor expectations and market valuations. Indicators such as inflation, unemployment, GDP growth, and interest rates have been shown to exert significant influence on stock returns (Chen, Roll, & Ross, 1986; Fama, 1981). For instance, higher GDP growth and stable interest rates generally boost stock returns, while inflation and unemployment create uncertainty and reduce market confidence.

By combining these perspectives, the framework in figure 1 explains how supply chain efficiency, firm-specific characteristics, and macroeconomic stability interact to determine stock returns across different industry types.

Optimizing Supply Chain Finance and Macroeconomic Factors: Impacts on Stock Returns of NASDAQ and Dow Jones-Listed U.S. Firms

5.1 Research Framework

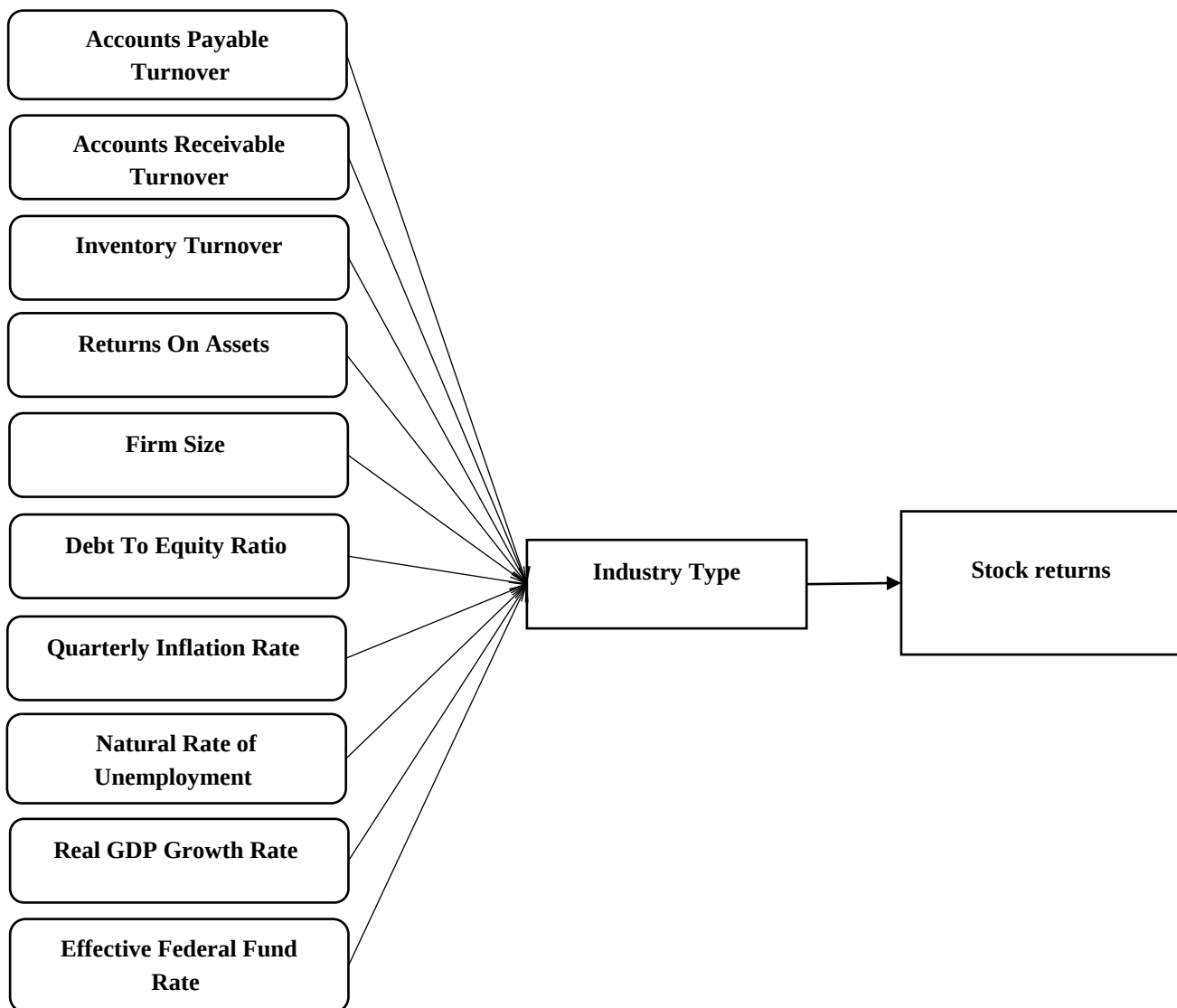


Figure 1 research Framework

Source: Authors owns development from literature review.

5.2 Research Hypothesis

- H1:* Accounts payable turnover has statistically significant effect on stock returns
- H2:* Accounts receivable turnover has statistically significant effect on stock returns
- H3:* Inventory turnover has statistically significant effect on stock returns
- H4:* Returns of assets has statistically significant effect on stock returns
- H5:* Firm size has statistically significant effect on stock returns
- H6:* Debt to equity ratio has statistically significant effect on stock returns
- H7:* Quarterly inflation rate has statistically significant effect on stock returns
- H8:* Natural rate of unemployment has statistically significant effect on stock returns
- H9:* Real GDP growth rate has statistically significant effect on stock returns
- H10:* Effective federal fund rate has statistically significant effect on stock returns

6. EMPIRICAL STUDY DESIGN

6.1 Sample Selection and Data Collection

This study uses a **quantitative research design** to examine the effect of supply chain finance and macroeconomic factors on stock returns. The design is explanatory, aiming to identify and measure the relationships between independent variables accounts payable

Optimizing Supply Chain Finance and Macroeconomic Factors: Impacts on Stock Returns of NASDAQ and Dow Jones-Listed U.S. Firms

turnover, accounts receivable turnover, inventory turnover, firm-specific factors, and macroeconomic indicators and the dependent variable, stock returns.

The population consists of **non-financial American firms listed on the DJIA30 and NASDAQ100** during the period **2000–2024**. Using a **purposive sampling technique**, firms with complete financial and macroeconomic data were selected, resulting in **90 companies** and **9000 firm-quarter observations**.

6.2 Models and Variables

To test the research hypotheses, the research model can be formulated as follows:

$$\text{Stock Returns}_{it} = \beta_0 + \beta_1 \text{APT}_{it} + \beta_2 \text{ART}_{it} + \beta_3 \text{IT}_{it} + \beta_4 \text{ROA}_{it} + \beta_5 \text{SIZE}_{it} + \beta_6 \text{DER}_{it} + \beta_7 \text{INF}_t + \beta_8 \text{UNEMP}_t + \beta_9 \text{GDP}_t + \beta_{10} \text{FED}_t + u_i + \epsilon_{it}$$

Where:

- **Stock Returns_(it)** = Stock return for firm *i* at time *t*
- **APT_(it)** = Accounts Payable Turnover for firm *i* at time *t*
- **ART_(it)** = Accounts Receivable Turnover for firm *i* at time *t*
- **IT_(it)** = Inventory Turnover for firm *i* at time *t*
- **ROA_(it)** = Return on Assets for firm *i* at time *t*
- **SIZE_(it)** = Firm Size for firm *i* at time *t*
- **DER_(it)** = Debt-to-Equity Ratio for firm *i* at time *t*
- **INF_t** = Inflation Rate at time *t*
- **UNEMP_t** = Natural Rate of Unemployment at time *t*
- **GDP_t** = Real GDP Growth Rate at time *t*
- **FED_t** = Effective Federal Funds Rate at time *t*
- **u_i** = Random effect for firm *i*
- **ε_(it)** = Error term

6.3 Statistical Techniques

The study applies a **Mixed Effect Regression Model** suitable for panel data to account for both fixed effects (firm-specific characteristics) and random effects (unobserved heterogeneity across time). The analysis includes descriptive statistics, classical assumption tests, and hypothesis testing using Wald Chi² to confirm overall model significance. The model's explanatory power is assessed through Adjusted R². The mixed effects model can be defined as:

$$Y_i = X_i\beta + Z_ib_i + \epsilon_i$$

7. EMPIRICAL RESULTS

7.1 Descriptive Statistics

The average stock return was 0.286, reflecting an approximate return of 28.6%, accompanied by a moderate standard deviation of 1.623. The interval from -2.18 to 12.27 indicates that certain firms incurred losses, whereas others realized significant gains. The turnover ratios for accounts payables and accounts receivables demonstrated significant variability, with means of 222.223 and 112.57, respectively, and standard deviations surpassing 1100. Their minimum and maximum values (2,450.53 to 20,500 for payables) and (2625.51 to 32400) indicate the existence of outliers and irregular payment cycles among firms. Inventory turnover exhibited a comparable trend, with an average of 102.66 and a substantial range from 276 to 18222, reflecting operational inefficiencies in specific instances.

There are also considerable differences in firm-specific indicators. Indicating significant heterogeneity in asset use, Returns on Assets had an abnormally large mean of 5.34 and a standard deviation of 6.28. The average Firm Size, calculated as the natural log of total assets, was 8.7443, with a standard deviation of 2.2386, indicating that the majority of enterprises are within this size range. Although the average Debt-to-Equity Ratio was 2.0596, a range of -712.26 to 6953 indicates that some companies are extremely indebted and may be dealing with financial risk. During the study period, macroeconomic indicators showed low variability, providing stable economic conditions. These indicators included the Quarterly Inflation Rate (mean 0.0055, SD 0.0057), Natural Rate of Unemployment (mean 0.0503, SD 0.0034), Real GDP Growth Rate (mean 0.0065, SD 0.0052), and Effective Federal Fund Rate (mean 0.0235, SD 0.0206). The summary of descriptive statistics is as shown in Table 1.

Table 1 Descriptive Statistics of the Key Variables

Variable	Obs	Mean	Std. dev.	Min	Max
Stock Returns	9000	.286315	1.623719	-2.18	12.27
Accounts Payables Turnover	9000	222.223	1317.2	2450.53	20500

Optimizing Supply Chain Finance and Macroeconomic Factors: Impacts on Stock Returns of NASDAQ and Dow Jones-Listed U.S. Firms

Accounts Receivables Turnover	9000	112.5689	1845.312	2625.51	32400
Inventory Turnover	9000	102.6594	412.0415	276	18222
Returns On Assets	9000	5.34e+08	6.28e+10	-1.4906522	7.65 e+12
Firm Size (Natural Log of Total Assets)	9000	8.7443	2.2386	.62312	13.1905
Debt To Equity Ratio	9000	2.0596	59.6442	-712.2563	6953
Quarterly Inflation Rate	9000	.0055070	.0057010	-.0279000	.0217050
Natural Rate of Unemployment	9000	.050310	.003472	.046171	.058464
Real GDP Growth Rate	9000	.0065620	.0052770	-.0219150	.0177970
Effective Federal Fund Rate	9000	.023512	.020641	.000681	.066102

7.2 Multicollinearity Test

A test for multicollinearity was run to identify highly correlated independent variables. As a concern level, the test used the Variance Inflation Factor (VIF), with a cutoff value of 10. Table 2 shows that all of the variables had very low VIF scores; the highest was 2.63 for Accounts Receivable Turnover, followed by 2.21 for Inventory Turnover and 2.07 for Accounts Payable Turnover. Multicollinearity was not a concern for the other variables, such as Returns on Assets (1.02), Firm Size (1.69), and Debt-to-Equity Ratio (1.03). Equally acceptable were other macroeconomic measures, such as the Quarterly Inflation Rate (1.11), Natural Rate of Unemployment (1.18), Real GDP Growth Rate (1.15), and Effective Federal Fund Rate (1.34).

Table 2 Multicollinearity Test Results Table

Variable	VIF
Accounts Payable Turnover	2.07
Accounts Receivable Turnover	2.63
Inventory Turnover	2.21
Returns of Assets	1.02
Firm Size (Natural Log of Total Assets)	1.69
Debt To Equity Ratio	1.03
Quarterly Inflation Rate	1.11
Natural Rate of Unemployment	1.18
Real GDP Growth Rate	1.15
Effective Federal Fund Rate	1.34

7.3 Hausman Test

The most appropriate model for estimating the panel data is the random effects model, as the p-value of the Hausman test (0.998) exceeds the 5% significance level. Therefore, we fail to reject the null hypothesis, which states that the difference in coefficients between the fixed and random effects models is not systematic. This confirms that the random-effects specification is suitable for the analysis. The results are as shown in the table 3.

Table 3 Hausman test results

Test:	H ₀ : difference in coefficients not systematic
$\chi^2(47)$	$= (b - B)'[Var(b) - Var(B)]^{-1}(b - B)$
	= 19.12
Prob > chi	= 0.998

7.4 RESET Test

Based on the results presented in Table 4, with an F-statistic of **1.05** and a p-value of **0.912**, we fail to reject the null hypothesis of the Ramsey RESET test, which states that the model has no omitted variables. Since the p-value exceeds the 5% significance level, this indicates that the linear specification of the model is appropriate and there is no evidence of misspecification.

Optimizing Supply Chain Finance and Macroeconomic Factors: Impacts on Stock Returns of NASDAQ and Dow Jones-Listed U.S. Firms

Table 4 RESET test results for model specification validity

Ramsey RESET test using powers of the fitted values of STOCK RETURNS	
H ₀ : model has no omitted variables	
F(3, 14125)	= 1.05
Prob > F	= 0.912

7.5 Heteroskedasticity Test

The Breusch-Pagan/Cook-Weisberg test for heteroskedasticity is statistically significant at the 5% level, evidenced by a p-value of 0.0000. The findings suggest the rejection of the null hypothesis of constant variance, indicating the presence of heteroskedasticity in the model. The chi-square statistic of 10,732.54 further substantiates this significant finding. It is essential to utilize robust standard errors or alternative corrective measures to guarantee the reliability of regression estimates. The results are as shown in Table 5.

Table 5 results for Breusch-Pagan/Cook-Weisberg test for heteroskedasticity

Breusch-Pagan/Cook-Weisberg test for heteroskedasticity	
H ₀ : constant variance	
Variables: fitted values of Stock Returns	
$\chi^2(1)$	= 10732.54
Prob > chi2	= 0.0000

According to the reported values, the p-value is 0.000, which is statistically significant at the 5% level. This indicates that at least one of the independent variables has a significant effect on Y. Furthermore, the adjusted R² value of 0.5140 suggests a good model fit, meaning that the proposed model explains approximately 51.40% of the total variance in the dependent variable. The results are summarized in Table 6.

Table 6 summary of the model of the study

Number of Observations	= 9000
Wald Chi2(51)	= 80.81
Prob > chi2	= 0.0000
R-squared	= 0.5140

7.6 Regression Analysis and hypothesis results

Based on the results presented in Table 7, That analyzed the combined impact of supply chain finance metrics (Accounts Payable Turnover, Accounts Receivable Turnover, Inventory Turnover), firm-specific factors (Return on Assets, Firm Size, Debt-to-Equity Ratio), and macroeconomic indicators (Quarterly Inflation Rate, Natural Rate of Unemployment, Real GDP Growth Rate, Effective Federal Funds Rate) on Stock Returns of 90 non-financial American firms listed in DJIA30 and NASDAQ100. The results reveal that several variables including accounts payable turnover, Accounts receivable turnover, Inventory turnover, Firm size and macroeconomic factors are statistically significant, indicating that both operational efficiency and economic conditions jointly influence stock returns.

Accounts Payable Turnover shows a positive and significant effect (0.000262***, $p < 0.01$) on stock returns. This proposes that when controlling for macroeconomic factors, faster supplier payments may signal strong liquidity and operational efficiency, which investors interpret positively. This is supported by studies like Babu (2022) and Ochieng et al. (2020), which show that improved payable management increases profitability and indirectly raises stock returns.

Accounts Receivable Turnover in the model of the study shows a negative and significant (-0.000164***, $p < 0.01$) on stock returns, indicating that faster collection of receivables is associated with lower stock returns when macroeconomic factors are considered. Aggressive collection policies may cause strained relationships with customers or signal liquidity concerns, which investors may interpret negatively in broader economic contexts.

Similarly, Asiedu et al. (2020) discovered that longer working capital cycles, which include receivable periods, had a negative impact on firm performance. This data supports the assumption that aggressive receivable management practices might worsen financial outcomes. In contrast, Amanda et al. (2019) and Wajo (2021) highlighted a positive relationship between receivable turnover and profitability, which typically enhances stock returns. In addition, Kumaraswamy and George (2019) pointed out that while effective management of accounts receivable usually improves profitability, the impact on stock returns could differ when external factors such as interest rates and GDP growth are taken into consideration.

Optimizing Supply Chain Finance and Macroeconomic Factors: Impacts on Stock Returns of NASDAQ and Dow Jones-Listed U.S. Firms

Inventory Turnover has a significant positive effect ($6.82e-05^{**}$, $p < 0.05$) on stock returns, which supports its role as a driver of stock returns. Effective inventory management reduces holding costs, improves cash flow, and shows investors that the operational strength. Chidananda et al. (2024) showed that inventory turnover significantly improves ROA, and Rethan et al. (2024) confirmed that it has a positive effect on profitability in the pharmaceutical sector. Suhernah (2023) also found that frequent inventory turnover contributes to profit growth in healthcare firms, while Alan et al. (2013) provided strong evidence that inventory productivity predicts future stock returns, generating abnormal returns of 1.08% per month in U.S. retail firms. Also, Park and Kim (2021) found that inventory turnover positively influences financial performance in the restaurant industry, though moderated by commodity price risk.

Return on Assets (ROA) shows a positive but insignificant effect (0.00225 , $p > 0.05$) on stock returns, suggesting that profitability alone does not strongly predict stock returns when other firm-level and macroeconomic factors are considered. This finding is consistent with Saragih (2018), who reported that ROA had an insignificant negative effect on stock returns in wholesale and retail trade companies, indicating that investors may prioritize leverage and equity returns over asset efficiency. Other studies, on the other hand, show different results. For instance, Nadyayani et al. (2021) found that ROA had a significant positive effect on stock returns in manufacturing firms, emphasizing that increased asset utilization attracts investors and improves market performance.

Firm Size has a positive and statistically significant effect (0.163^{***} , $p < 0.01$) on stock returns, which means that bigger companies tend to have higher stock returns. This result shows that size has advantages like economies of scale, a stronger market presence, and more investor confidence, all of which raise the market's value.

Pasaribu and Nugroho's (2023) research supports this finding, which says that the size of a company has a positive effect on stock returns and makes profitability have an increased impact on market performance. Also, Rona et al. (2024) found that larger firms exhibit lower systematic risk and more stable returns compared to smaller firms, reinforcing the perception of size as a risk-mitigating factor. Furthermore, Astakhov et al. (2019), through a meta-analysis of 102 studies, confirmed that the size premium remains statistically significant globally, even though it has weakened in recent decades. Hou and van Dijk (2019) also noted that the size impact is still there after controlling for profitability shocks, hence firm size is still an important factor in asset pricing models when predicting stock returns.

Debt-to-Equity Ratio (DER) shows a positive but insignificant effect ($4.31e-06$, $p > 0.05$) on stock returns, suggesting that leverage does not strongly predict stock returns when other firm-level and macroeconomic factors are considered. This finding is consistent with Saragih (2018), who reported that that DER has a negative but insignificant effect on stock returns indicating that leverage does not play a meaningful role in determining stock performance within this sector. Other studies, on the other hand, show contrasts that report a significant relationship between DER and stock returns. Nainggolan et al. (2023), for instance, found that Debt-to-Equity Ratio (DER) strongly affects stock prices, while its impact on company value is constrained, indicating that investors include leverage into their pricing decisions. Bhandari (1988) provided early evidence that DER is positively related to expected returns in U.S. markets, reinforcing the notion that higher leverage introduces risk that investors price into returns. Lubis et al. (2021) identified a detrimental but insignificant impact of DER on stock returns, contending that excessive leverage may elevate financial risk without improving returns. Winn (2014) further emphasized that deviations from optimal DER levels negatively affect stock returns, highlighting the importance of maintaining an optimal capital structure.

The Quarterly Inflation Rate shows a negative but not significant effect (-1.686 , $p > 0.05$) on stock returns, suggesting that inflation does not exert a strong direct effect on stock returns in this model. However, prior research consistently shows that inflation can negatively influence equity markets under certain conditions. For example, Eldomiaty et al. (2020) found that inflation rates are negatively associated with stock prices for firms listed on DJIA30 and NASDAQ100, emphasizing that inflation shocks reduce market valuations. Chiang (2023) established a significant negative correlation between anticipated inflation and stock returns in 18 major nations, therefore corroborating the uncertainty hypothesis and emphasizing the impact of inflation expectations in depressing stock performance. Zhang (2021) demonstrated that the adverse impact of inflation on stock returns is amplified under countercyclical monetary policy environments, particularly in inflation-targeting countries. Additionally, Thorbecke (2023) showed that inflation shocks during the post-COVID period significantly increased market volatility, with anti-inflationary policies exacerbating the impact on returns.

The natural rate of unemployment shows a positive and highly significant effect (29.62^{***} , $p < 0.01$) on stock returns, indicating that higher structural unemployment levels are associated with increased stock returns in this model. This counterintuitive result may reflect investor expectations of monetary easing during periods of elevated unemployment, which can boost equity valuations. This explanation corresponds with Hall and Kudlyak (2023), who contend that variations in the natural rate impact monetary policy responses, subsequently influencing interest rates and stock prices. Bok et al. (2023) also emphasize that increases in the natural rate during economic disruptions alter policy stances, hence affecting discount rates and risk premiums indirectly. Jain (2024) reinforces the correlation between unemployment and market performance, observing that intervals close to the natural rate align with robust stock returns attributable to solid macroeconomic circumstances and investor confidence. Additionally, Gonzalo and

Optimizing Supply Chain Finance and Macroeconomic Factors: Impacts on Stock Returns of NASDAQ and Dow Jones-Listed U.S. Firms

Taamouti (2017) found that anticipated unemployment increases can lead to higher stock prices in certain quantiles, as markets expect accommodative monetary policy.

The Real GDP Growth Rate shows a positive and highly significant effect (5.565***, $p < 0.01$) on stock returns, indicating that stronger economic growth is associated with higher stock returns. This finding aligns with the theoretical expectation that GDP growth boosts corporate earnings and investor confidence, thereby driving equity performance. This viewpoint is confirmed by Jain (2024) indicating that significant GDP growth often correlates with positive stock returns, although inflation and unemployment can moderate the effect. Shala et al. (2025) identified a positive and strong correlation between GDP growth and stock market capitalization in G7 countries, highlighting that efficient financial markets enhance the advantages of economic growth. Nevertheless, alternative research suggests a more intricate perspective. Fichtner and Joebges (2024) reported that while a positive long-run relationship exists, the link between GDP growth and stock returns is weaker than expected and materializes slowly over two to three years. On the other hand, Mladina and Germani (2016) found little to no significant correlation between long-term GDP growth and equity returns, suggesting that valuation dynamics and investor expectations often overshadow aggregate economic growth.

The Effective Federal Funds Rate demonstrates a positive and highly significant influence (5.194***, $p < 0.01$) on stock returns, demonstrating that higher interest rates are related with increased stock returns in this model. This outcome may indicate investor anticipations of strong economic circumstances accompanying interest rate increases or sector-specific factors that gain from elevated rates. Bernanke and Kuttner (2005) established that unexpected monetary policy adjustments substantially affect equity values, as an unforeseen 25-basis-point reduction in the federal funds rate elevates stock indexes by almost 1%, underscoring the market's sensitivity to interest rate fluctuations. Conversely, Gkonis (2023) determined that a one percentage point elevation in the federal funds rate results in a 0.62% decline in the S&P 500, underscoring the often-adverse short-term effects of rate increases on market valuations. The risk premium impact is most noticeable during tightening cycles, as shown by Thorbecke (2023) who found that sharp increases in interest rates from 2022 to 2023 increased volatility and reduced stock returns. Garg (2008) observed that specific sectors, like utilities and financials, demonstrate a positive relationship with fluctuations in the federal funds rate, indicating varied effects across industries. Javed et al. (2019) further observed that the predictive power of federal funds rate changes on stock returns varies across economic cycles, being stronger in stable periods.

Table 7 The Effects of Supply Chain, Macroeconomic factors and Industry Types on Stock Returns

Variables	Stock Returns
Accounts Payable Turnover	0.000262***
	(1.15e-05)
Accounts Receivable Turnover	-0.000164***
	(1.28e-05)
Inventory Turnover	6.82e-05**
	(3.37e-05)
Returns On Assets	0.00225
	(0.00306)
Firm Size (Natural Log of Total Assets)	0.163***
	(0.00571)
Debt To Equity Ratio	4.31e-06
	(0.000160)
Quarterly Inflation Rate	-1.686
	(1.786)
Natural Rate of Unemployment	29.62***
	(2.893)
Real GDP Growth Rate	5.565***
	(1.928)
Effective Federal Fund Rate	5.194***
	(0.534)
Industry Type (Dummy; binary)	Yes
Constant	-2.846***
	(0.170)
Observations	9000

Number of ID	90
Robust standard errors in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

8. CONCLUSION, RECOMMENDATION AND FUTURE RESEARCH

The study concludes that supply chain finance efficiency and macroeconomic stability significantly influence stock returns for non-financial U.S. firms listed on DJIA30 and NASDAQ100. In particular, stock returns are positively and significantly affected by accounts payable and inventory turnover, and negatively and significantly by accounts receivable turnover. Firm size is the only firm-specific variable that has a positive effect on stock returns; ROA and debt-to-equity ratio non-significant. Regarding macroeconomic indicators, unemployment rate, GDP growth, and federal funds rate exhibit strong positive effects, while inflation shows an insignificant negative effect. The overall model is statistically significant, explaining a substantial portion of the variance in stock returns.

Companies should focus on enhancing supply chain efficiency, especially with accounts payable and inventory turnover, because these aspects have a good impact on stock returns, according to the findings. Managers must carefully evaluate credit policies since accounts receivable turnover showed a negative and substantial effect, suggesting that aggressive collection tactics could hurt performance in the long run. Studies have shown that larger companies tend to have better stock returns. Consequently, smaller businesses could gain by investigating ways to increase their operations' scale and take advantage of economies of scale. Firms and investors would do well to keep an eye on macroeconomic indicators like the unemployment rate, GDP growth, and the federal funds rate, since these have a favorable influence on stock returns.

Future research should expand on this study by investigating the impact of supply chain finance on stock idiosyncratic risks, specifically its ability to explain unsystematic risk, in order to comprehend how operational efficiency affects firm-specific volatility independent of market-wide factors. Future research may explore the interplay between supply chain finance, macroeconomic conditions, and industry types concerning stock idiosyncratic risks, offering insights into whether these factors reduce or exacerbate firm-level risk exposure. These relationships and what they mean for risk management and investor decision-making could be better understood with comparative analyses across various industries and worldwide markets and with the help of sophisticated econometric models like GARCH frameworks or dynamic panel estimators.

REFERENCES

- 1) Akurugu, I., Agana, J., Mireku, K., et al. (2025). Supply chain finance and performance: A bibliometric and content analysis. *Modern Supply Chain Research and Applications*. Access from <https://doi.org/10.1108/MSRA-04-2024-0013>
- 2) Alan, Y., Gao, G. P., & Gaur, V. (2014). Does inventory productivity predict future stock returns? A retailing industry perspective. *Management Science*, 60(10), 2416-2434.
- 3) Amanda, R. I. (2019). The impact of cash turnover, receivable turnover, inventory turnover, current ratio and debt to equity ratio on profitability. *Journal of research in management*, 2(2), 14-22.
- 4) Asiedu, M. A., Adegbedzi, D. K., Oduro, R., & Iddrisu, S. (2020). Working Capital Management Effect on Return on Equity: Evidence from Listed Manufacturing firms on Ghana Stock Exchange (GSE). *International Journal of Finance and Accounting*, 5(1), 47-66.
- 5) Astakhov, A., Havranek, T., & Novak, J. (2019). Firm size and stock returns: A quantitative survey. *Journal of Economic Surveys*, 33(5), 1463-1492.
- 6) Azmal, R., Negoro, D. A., & Syah, T. Y. R. (2019). The influence cash position analysis over debt-to-equity ratio, return on assets, and inventory turnover on dividend payout ratio: Consumer goods companies in Indonesia stock exchange 2012-2017 case study. *Journal of Multidisciplinary Academic*, 3(4), 76-81.
- 7) Bammeri, O., & Dehani, N. (2014). The effect of capital management on stock returns of accepted companies in Tehran Stock Exchange. *European Online Journal of Natural and Social Sciences*, 2(3 [s]), 1061–1069. Retrieved from <https://european-science.com/eojnss/article/view/622>
- 8) Bernanke, B. S., & Kuttner, K. N. (2005). What explains the stock market's reaction to Federal Reserve policy?. *The Journal of finance*, 60(3), 1221-1257.
- 9) Bhandari, L. C. (1988). Debt/equity ratio and expected common stock returns: Empirical evidence. *The journal of finance*, 43(2), 507-528.
- 10) Bok, B., Crump, R. K., Nekarda, C. J., & Petrosky-Nadeau, N. (2023, September). Estimating Natural Rates of Unemployment: A Primer. Federal Reserve Bank of San Francisco.

Optimizing Supply Chain Finance and Macroeconomic Factors: Impacts on Stock Returns of NASDAQ and Dow Jones-Listed U.S. Firms

- 11) Breivik, J., Larsen, N. M., Thyholdt, S. B., & Myrland, Ø. (2023). Measuring inventory turnover efficiency using stochastic frontier analysis: building materials and hardware retail chains in Norway. *International journal of systems science: Operations & Logistics*, 10(1), 1964635.
- 12) Chandra, S., & Juliawati, C. (2020). Effects of long term debt to total assets, short term debt to total assets, total asset turnover, and inventory turnover on profitability of manufacturing companies in consumer goods subsector listed on IDX. *Journal of Applied Business and Technology*, 1(3), 212-222.
- 13) Chen, N. F., Roll, R., & Ross, S. A. (1986). Economic forces and the stock market. *Journal of business*, 383-403.
- 14) Chiang, T. C. (2023). Stock returns and inflation expectations: Evidence from 20 major countries. *Quant. Financ. Econ*, 7, 538-568.
- 15) Chidananda, H. L., Angel, E., Kowshika, & Anand. (2024). Optimizing return on assets: The influence of inventory turnover, revenue from operations, and current ratio. *International Journal of Commerce and Management Research*, 10(3), 36-39. Access from <https://share.google/VZL9UjYavbPMNaYBy>
- 16) Deloof, M. (2003). Does working capital management affect profitability of Belgian firms?. *Journal of business finance & Accounting*, 30(3-4), 573-588.
- 17) Dou, Y., & Zhao, J. (2024). The Impact of Supply Chain Finance on the Investment Efficiency of Publicly Listed Companies in China Based on Sustainable Development. *Sustainability* (2071-1050), 16(18).
- 18) Eldomiaty, T., Saeed, Y., Hammam, R., & AboulSoud, S. (2020). The associations between stock prices, inflation rates, interest rates are still persistent. Empirical evidence from stock duration model. *Journal of Economics, Finance and Administrative Science*, 25(49), 149-162.
- 19) Eryatna, E. N., Eltivia, N., & Handayawati, K. U. (2021, July). The effect of cash turnover, receivable turnover, and inventory turnover towards profitability of consumer goods companies in Indonesia. In *2nd Annual Management, Business and Economic Conference (AMBEC 2020)* (pp. 191-197). Atlantis Press.
- 20) Fama, E. F. (1981). Stock returns, real activity, inflation, and money. *American Economic Review*, 71(4), 545-565.
- 21) Fama, E. F., & French, K. R. (1992). The cross-section of expected stock returns. *the Journal of Finance*, 47(2), 427-465.
- 22) Fichtner, F., & Joebgies, H. (2024). Stock market returns and GDP growth (No. 90). IMK Study.
- 23) Flannery, M. J., & Protopapadakis, A. A. (2002). Macroeconomic factors do influence aggregate stock returns. *The review of financial studies*, 15(3), 751-782.
- 24) Garg, K. (2008). The effect of changes in the federal funds rate on stock markets: a sector-wise analysis. *Undergraduate Economic Review*, 4(1), 2.
- 25) Gkonis, K. (2023). Stock market returns and monetary policy. Identifying the effect of FED'S forward guidance on the stock market.
- 26) Gonzalo, J., & Taamouti, A. (2017). The reaction of stock market returns to unemployment. *Studies in Nonlinear Dynamics & Econometrics*, 21(4), 20150078.
- 27) Hall, R. E., & Kudlyak, M. (2023). The Active Role of the Natural Rate of Unemployment (No. w31848). National Bureau of Economic Research.
- 28) Hançerlioğulları, G., Şen, A., & Aktunç, E. A. (2016). Demand uncertainty and inventory turnover performance: An empirical analysis of the US retail industry. *International Journal of Physical Distribution & Logistics Management*, 46(6/7), 681-708.
- 29) Helmiawati, E. E. S. (2025). The Effect of Return on Asset, Debt to Equity Ratio, and Current Ratio on Stock Returns with Dividend Policy as an Intervening Variable. *Inovbiz: Jurnal Inovasi Bisnis*, 13(1).
- 30) Hou, K., & Van Dijk, M. A. (2019). Resurrecting the size effect: Firm size, profitability shocks, and expected stock returns. *The Review of Financial Studies*, 32(7), 2850-2889.
- 31) Jain, K. (2024). Economic Indicators And Stock Market Performance: An Analysis Of GDP, Unemployment Rates, And Inflation. *Iosr Journal of Economics And Finance*, 15(5), 16-22.
- 32) Javed, S., Aldalaie, B. A., Husain, U., & Khan, M. S. (2019). Impact of federal funds rate on monthly stocks return of United States of America. *International Journal of Business and Management*, 14(9), 105-113.
- 33) Kadima M. John, Olweny, T., & Mukanzi, C. (2021). Accounts Payables Conversion Period on Liquidity of Equity Securities of Companies at Nairobi Securities Exchange. *African Development Finance Journal*, 5(1), 33-56.
- 34) Kilic, M., & Wachter, J. A. (2018). Risk, unemployment, and the stock market: A rare-event-based explanation of labor market volatility. *The Review of Financial Studies*, 31(12), 4762-4814.
- 35) Kumaraswamy, S., & George, S. (2019). Trade credit management and firm profitability of Saudi manufacturing firms. *Polish Journal of Management Studies*, 20.
- 36) Lazaridis, I., & Tryfonidis, D. (2006). Relationship between working capital management and profitability of listed companies in the Athens stock exchange. *Journal of financial management and analysis*, 19(1).

- 37) Li, N., & Dong, H. (2023). Analysis of supply chain finance risk assessment based on numerical analysis algorithm. 3c Empresa: investigación y pensamiento crítico, 12(2), 217-262.
- 38) Lubis, I., & Alfiyah, F. N. (2021). Effect of return on equity and debt to equity ratio to stock return. Indonesian Financial Review, 1(1), 18-32.
- 39) Matole, E. K. (2019). Effect of Working Capital Management on the Financial Performance of Manufacturing Firms Listed at the Nairobi Securities Exchange (Doctoral dissertation, University of Nairobi).
- 40) Mladina, P., & Germani, S. (2016). The Enigma of Economic Growth and Stock Market Returns. Northern Trust Corporation.
- 41) MMbaya, C. I. (2021). The Impact of Accounts Receivables Management on the Financial Performance of Manufacturing Firms Listed at the Nairobi Securities Exchange (Doctoral dissertation, University of Nairobi).
- 42) Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. The American economic review, 48(3), 261-297.
- 43) Nadyayani, D. A. D., & Suarjaya, A. A. G. (2021). The effect of profitability on stock return. American Journal of Humanities and Social Sciences Research (AJHSSR), 5(1), 695-703.
- 44) Nainggolan, Y., Maksum, A., & Erwin, K. (2023). Analysis of the Influence of Debt to Equity Ratio (DER), Earnings Per Share (EPS), and Dividend Payout Ratio (DPR) on Stock Price with Firm Value as an Intervening Variable (Case Study of LQ45 Stock Index 2015-2021 Period). International Journal of Research and Review, 10(9), 226-241. Access from https://ijrrjournal.com/IJRR_Vol.10_Issue.9_Sep2023/IJRR25.pdf
- 45) Ochieng, M. R. M., Jagongo, P. A. O., & Ndede, P. F. W. (2020). Working capital management and financial performance of manufacturing and allied category of firms listed at the Nairobi Securities Exchange, Kenya. International Journal of Research in Finance and Marketing, 10(1), 1-14.
- 46) Park, E., & Kim, W. H. (2021). The effect of inventory turnover on financial performance in the US restaurant industry: The moderating role of exposure to commodity price risk. Tourism Economics, 27(7), 1417-1429.
- 47) Pasaribu, T. M., & Nugroho, L. (2023). The Effect Of Company Financial Fundamental Factors On Stock Return With Company Size as a Moderation Variable. International Journal of Management Studies and Social Science Research, 5(2), 164-173.
- 48) Patki, A. (2021). Analysis of Inventory Turnover Ratio and its Impact on Profitability of Enterprises in Indian Retail Industry. Indian Institute of Finance Vol. XXXV No, 2.
- 49) Pfohl, H.-C., & Gomm, M. (2009). Supply Chain Finance: Optimizing Financial Flows in Supply Chains. Logistics Research.
- 50) Rahayu, M., & Ilham, R. N. (2023). The influence of cash turnover, receivables turnover and inventory turnover on the economic profitability of registered pharmaceutical companies on the indonesian stock exchange period 2017-2021. Journal of Accounting Research, Utility Finance and Digital Assets, 1(4), 336-341.
- 51) Rona, Susan, Varghese., Krishna, M, C. (2024). Impact of Firm Size and Systematic Risk on Stock Returns in Companies of Different Industries. International Journal of Innovative Science and Research Technology, 8(6), 112–124. Retrieved from <https://ijisrt.com/impact-of-firm-size-and-systematic-risk-on-stock-returns-in-companies-of-different-industries>
- 52) Saragih, J. L. (2018). The effects of return on assets (ROA), return on equity (ROE), and debt to equity ratio (DER) on stock returns in wholesale and retail trade companies listed in Indonesia stock exchange. International Journal of Science and Research Methodology, 8(3), 348-367.
- 53) Shaikh, A. S. (2025). The impact of macroeconomic indicators on GDP Growth: An Empirical Analysis. International Journal of Science and Research Archive, 16(02), 1277–1282.
- 54) Shala, S. H., Bytyqi, A., & Haxhimustafa, S. (2025, March). Stock Market Dynamics and Economic Growth: Empirical Insights. In Navigating Economic Uncertainty-Vol. 2: Proceedings of the 7th International Scientific Conference on Business and Economics (ISCBE), Portugal, June 2024 (p. 133). Springer Nature.
- 55) Shamsudin, N., Rosmi, M. I., & Mohamed, S. (2021). Macroeconomic variables influence on stock market performance. International Journal of Academic Research in Business and Social Sciences, 11(8), 1364-1376.
- 56) Shin, H. H., & Soenen, H. L. (1998). Efficiency of working capital and corporate profitability.
- 57) Srour, H., & Azmy, A. (2021). Inventory Management and Its Impact on the Firm Performance. World Research of Business Administration Journal, 1(1), 45-65.
- 58) Suhernah. (2023). Asset turnover, inventory turnover, dividend policy and profit growth. International Journal of Economics, Business and Accounting Research (IJEBAR), 7(2), 988–1001. Access from <https://share.google/UnrrS0Sm2IyMudzup>
- 59) Thorbecke, W. (2023). The impact of monetary policy on the US Stock market since the COVID-19 pandemic. International Journal of Financial Studies, 11(4), 134. access from <https://doi.org/10.3390/ijfs11040134>

Optimizing Supply Chain Finance and Macroeconomic Factors: Impacts on Stock Returns of NASDAQ and Dow Jones-Listed U.S. Firms

- 60) Tobazaa, S. G., & Gatsi, J. G. (2025). The impact of accounts payable management in enhancing liquidity of the energy sector companies in Ghana. *International Academic Journal of Economics and Finance (IAJEF)* | ISSN 2518-2366, 5(1), 1-18.
- 61) Truong, K. D. (2023). Impact of inventory management on firm performance a case study of listed manufacturing firms on HOSE. *International journal of information, business and management*, 15(1), 93-115.
- 62) Wajo, A. (2021). Effect of cash turnover, receivable turnover, inventory turnover and growth opportunity on profitability. *ATESTASI: Jurnal Ilmiah Akuntansi*, 4(1), 61-69.
- 63) Warren, C. S., Reeve, J. M., & Duchac, J. E. (2014). *Financial and managerial accounting*, 12e. South-Western, Cengage Learning.
- 64) Winn, C. D. (2014). Optimal debt-to-equity ratios and stock returns.
- 65) Zhang, M. Z. (2021). Stock returns and inflation redux: an explanation from monetary policy in advanced and emerging markets. *International Monetary Fund*.



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