



Stock Market Indicators as Drivers of Price Stability: Comparative Evidence from Sub-Saharan Africa and MENA

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Abstract: *This study investigates the impact of stock market development on inflationary pressures in Sub-Saharan Africa (SSA) and the Middle East and North Africa (MENA) from 2000 to 2023. While existing literature predominantly focuses on inflation's erosion of financial returns, this research examines the reverse causality: whether stock market indicators, specifically Market Capitalization, All-Shares Index (ASI), and Trading Volume act as drivers of price stability. Utilizing panel least squares and fixed effects models, the empirical analysis reveals a significant "dual-folded" dynamic. Market Capitalization and Trading Volume demonstrate a negative relationship with inflation, suggesting that deeper, more liquid markets exert stabilizing effects on consumer prices. Conversely, the All-Shares Index exhibits a positive relationship, indicating that rising market performance can fuel demand-pull inflation. Regionally, these effects are more pronounced in SSA, whereas MENA economies are driven more significantly by interest rate adjustments. The study concludes that stock markets are active determinants of price levels rather than merely reactive recipients of macroeconomic shocks. Consequently, it is recommended that central banks in emerging economies integrate stock market liquidity and capitalization metrics into their inflation-targeting frameworks to enhance macroeconomic stability.*

Keywords: Stock Market Development, Inflation, SSA, MENA, Price Stability, Panel Regression.

I. Introduction

The relationship between stock market development and inflation has been a subject of extensive academic debate and policy concern, particularly in emerging and developing economies. Stock markets are critical components of a country's

financial system, facilitating capital formation, promoting investment, and contributing to economic growth (Golopeni et al., 2023). The Sub-Saharan Africa (SSA) and Middle East and North Africa (MENA) regions present a unique context for examining the interplay between stock market development and inflation. The SSA region has historically experienced high and volatile inflation rates, driven by factors such as supply-side

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constraints, exchange rate volatility, and fiscal imbalances (Zhang, 2021). The varying inflation dynamics across SSA countries highlight the importance of macroeconomic stability in fostering stock market development. The MENA region, on the other hand, has also faced inflationary pressures, albeit with different underlying causes. Oil price fluctuations, exchange rate policies, and fiscal imbalances have been key drivers of inflation in the region (Fatma & Khadidja, 2023).

The diverse inflationary experiences of MENA countries underscore the importance of understanding the specific macroeconomic contexts in which stock markets operate. The stock market can play a crucial role in controlling inflation by acting as both an indicator and a mechanism for economic stabilization (Begum et al., 2024). Stock market variables such as corporate earnings, investor sentiment, and market liquidity can influence inflationary pressures in several ways. For instance,



the performance of stock prices reflects investor confidence, which, in turn, can signal the health of the economy and guide central bank decisions on monetary policy. Thus, stock market dynamics can be leveraged to stabilize inflation by promoting growth, investor confidence, and efficient capital flows, ultimately supporting price stability (Kotb et al., 2024).

Inflation is a significant concern in both SSA and MENA regions, with many of the selected countries experiencing high and volatile inflation rates that can undermine economic stability and investors' confidence. While much focus has been placed on how inflation significantly affects stock market performance, there is a notable and long-standing gap in exploring how the development of stock markets can, in turn, help manage, control and/or mitigate inflationary pressures and episodes in these regions (Chiang, 2023; Omar et al., 2022; Zhang, 2021).

The dual-folded nature of this relationship presents a paradox: while stock markets are expected to contribute to economic growth and stability, they are also vulnerable to macroeconomic shocks, particularly shocks generated by inflation. However, the extent to which stock markets in SSA and MENA regions have achieved this mitigating role remains unclear. Given these complexities, there is a pressing need for a comprehensive and context-specific analysis of the stock market-inflation relationship in SSA and MENA regions. The research will explore the extent to which stock market variables can mitigate inflationary pressures. Despite the growing interest in the financial markets of SSA and MENA countries, there is a significant gap in the literature that comprehensively addresses the dual-folded phenomenon where inflation impacts stock market performance and, conversely, how stock market development influences inflation (Folorunso, 2023; Salifu et al., 2024). Understanding how stock market performance impacts inflation can help investors make more informed decisions, particularly in volatile environments. First, research focusing on the long-term predictability of inflation through stock market variables suggests that deviations in the earnings-price ratio, coupled with inflationary trends, hold valuable predictive potential for stock returns. This insight aligns with the notion that stock markets not only reflect current economic conditions

but can also serve as early indicators for inflationary trends, thus supporting their use in inflation-related policy adjustments. By identifying the factors that influence the relationship between stock market development and inflation, the study can inform the design of more effective monetary and fiscal policies aimed at stabilizing inflation and fostering robust financial markets.

II. Literature Review

2.1 Conceptual Clarifications

Stock Markets

Stock markets are organized exchanges where securities, such as stocks and bonds, are traded. They serve as a vital mechanism for companies to raise capital and for investors to participate in the ownership and growth of businesses. This function facilitates economic expansion by channeling savings into productive investments, thereby fostering job creation and technological innovation.

Stock markets are characterized by a high degree of market capitalization relative to GDP, active trading, and a broad array of financial instruments available to investors (Gollopini et al., 2023). The importance of stock market development cannot be overstated. In a well-functioning stock market, capital is allocated more efficiently, allowing businesses to access the funds needed for expansion, innovation, and job creation. This process leads to the mobilization of domestic and international savings, which are channelled into productive investments.

Inflation

Inflation is a critical concept in economics that reflects the overall increase in the price level of goods and services in an economy over a specific period. It is a central aspect of macroeconomic analysis and has significant implications for economic stability, purchasing power, and the overall functioning of an economy. Understanding inflation involves examining its causes, types, measurement, effects, and the policies implemented to control it. This review explores these dimensions in depth to provide a comprehensive understanding of inflation.

2.2 Theoretical Framework

The Quantity Theory of Money



The Quantity Theory of Money is one of the oldest and most widely recognized theories of inflation. It posits that the general price level of goods and services is directly proportional to the quantity of money in circulation. The theory is succinctly captured by the equation of exchange: $MV = PQ$, where M is the money supply, V is the velocity of money, P is the price level, and Q is the quantity of goods and services produced. According to this theory, an increase in the money supply, assuming the velocity of money and the quantity of goods and services produced remain constant, will lead to a proportional increase in the price level, thereby causing inflation (Moosa et al., 2024). The Quantity Theory of Money has been foundational in explaining inflationary processes, particularly in contexts where excessive money printing by governments has led to hyperinflation, as seen historically in countries like Zimbabwe.

In this study, the Quantity Theory of Money provides a basis for examining how monetary policy, particularly the expansion of the money supply, may have contributed to inflation in the selected SSA and MENA countries. For example, in economies where central banks have engaged in expansionary monetary policies to stimulate growth, the resultant increase in the money supply could have led to inflationary pressures, affecting the overall economic stability and the performance of stock markets.

The Cost-Push Inflation Theory

Cost-Push Inflation Theory explains inflation as a result of rising costs of production, which firms pass on to consumers in the form of higher prices. This theory is particularly relevant in situations where external shocks, such as increases in the prices of raw materials or wages, lead to higher production costs. According to this theory, inflation occurs when firms facing higher input costs raise prices to maintain profit margins, resulting in an overall increase in the price level (Blanchard & Fischer, 1989). Cost-push inflation is often associated with supply-side constraints, such as supply chain disruptions or shortages of key commodities. For instance, in oil-exporting countries, fluctuations in global oil prices can lead to cost-push inflation, particularly when oil prices rise sharply. This theory is relevant for the MENA region, where economies are often affected by changes in global oil prices, leading to inflationary

pressures. In the context of SSA and MENA countries, the Cost-Push Inflation Theory can be used to analyze how external factors, such as commodity price shocks or exchange rate volatility, have contributed to inflation. For example, in countries heavily reliant on imports, a depreciation of the local currency can increase the cost of imported goods, leading to cost-push inflation. This inflationary pressure can, in turn, impact consumer purchasing power and investor confidence, influencing stock market performance.

Stock Market Development and Inflation Control

A well-developed stock market plays a crucial role in controlling inflation by improving financial intermediation and offering alternative investment opportunities. When stock markets are efficient and liquid, they absorb excess liquidity in the economy, thereby reducing inflationary pressures. This mechanism is particularly relevant for SSA and MENA countries, where inflation is often a major macroeconomic challenge. Stock markets help control inflation through several key mechanisms. First, they absorb excess liquidity by providing investment avenues such as equities and bonds, which divert funds away from excessive consumption. This process reduces demand-pull inflation by limiting the excess money supply that could otherwise drive-up consumer prices. Second, developed stock markets improve the transmission of monetary policy. A well-functioning financial market ensures that central bank policies, such as interest rate adjustments, effectively influence investment and consumption decisions, thereby enhancing price stability. Finally, stock markets can help anchor inflation expectations. When investors perceive a stable financial environment with opportunities for long-term growth, inflation expectations remain subdued, preventing speculative behaviour that could further fuel inflation (Cossiga, 2023).

Empirical evidence supports the role of financial market development in controlling inflation. For instance, Levine (1997) found that countries with well-developed financial markets experience lower and more stable inflation rates. A more recent study by Abu Asab and Al-Tarawneh (2019) further supports this, identifying a nonlinear relationship between inflation and stock market development in emerging economies like Jordan, where inflation rates below a certain threshold positively influence market growth, but excessive inflation has the opposite effect (Abu Asab & Al-Tarawneh, 2019). In the context of SSA and MENA economies,



strengthening stock markets can help policymakers manage inflation more effectively. By enhancing financial infrastructure, improving investor confidence, and fostering capital market deepening, these regions can leverage stock market development as a strategy to control inflation while promoting sustainable economic growth.

2.3 Empirical Literature Review

Sia, Leong, and Puah (2023) conducted a study on Indonesia's stock market using the Nonlinear Autoregressive Distributed Lags (NARDL) model, analyzing data from 1996 to 2020. The study found that stock market performance, particularly fluctuations in stock prices, directly influenced inflationary trends. In their findings, both rises and falls in stock prices had significant asymmetric effects on inflation, suggesting that changes in stock market dynamics can shift investor confidence, resource allocation, and ultimately, inflation. This indicates that stock markets, rather than inflation, serve as critical signals of inflationary pressures, providing valuable information for policymakers looking to anticipate and manage inflation through stock market responses.

Cao (2023) studied the U.S. stock market, focusing on the effects of inflation and monetary policy, particularly post-pandemic, on the S&P 500 index from 2004 to 2023. The research showed that each 1% increase in the Consumer Price Index (CPI) corresponded to a 0.4% decrease in S&P 500 returns, while interest rate hikes by the Federal Reserve further exacerbated market volatility. These findings demonstrate that stock market movements reflect inflationary pressures, and are therefore a vital indicator of inflation trends, as changes in stock returns can precede shifts in inflation. This suggests that stock markets can play a significant role in controlling inflation by providing early signals of price pressures that could guide policy adjustments.

In India, Kushwaha, Kafle, and Khanal (2023) examined the impact of GDP and inflation on the Bombay Stock Exchange (BSE) index over a 41-year period from 1980 to 2021. Using a multiple regression model, they found that inflation had a moderate negative effect on the stock market, with a 1% rise in inflation resulting in a 2.17% decline in the BSE index. However, the correlation was even more significant in the opposite direction: stock market fluctuations—represented by the BSE index

provided early indicators of inflation trends, with stock market performance leading inflation rather than being driven by it. This suggests that stock market dynamics can be used to forecast inflationary movements, offering an essential tool for inflation control.

In Ghana, Awadzie (2020) utilized a Threshold Autoregressive model to analyze the relationship between inflation and the performance of the Ghana Stock Exchange between 1990 and 2019. The study revealed that stock market performance directly influenced inflationary trends, as inflation levels above 4% caused declines in stock turnover and capitalization. These declines in stock market activity, in turn, contributed to an environment of higher inflation. Conversely, moderate inflation was associated with increased stock market activity, demonstrating how stock market dynamics can help stabilize inflation when market participation is healthy.

Alzoubi (2022) investigated the relationship between interest rates, inflation, and the Amman Stock Exchange in Jordan from 1991 to 2020 using the Autoregressive Distributed Lag (ARDL) model. The study found that a 1% increase in the Consumer Price Index (CPI) led to a 1.6% decline in stock prices, with a stronger effect from rising interest rates. This underscores the role of the stock market in mitigating inflationary pressures, as declining stock values can contribute to rising



inflation by reducing investor confidence and economic activity, highlighting the importance of stock market performance in inflation control.

III. Methodology

The study is based on annual data that will be sourced from secondary sources. These sources comprise of national and international, which include the Central Bank of Nigeria (CBN) Statistical Bulletin of various years, Nigerian Stock Exchange Facts Book for various years, World Bank Development Indicators (WDI), IMF Databases and the National Statistics Bulletin of the various countries. The period cover for the study ranges from 2000 to 2023, that is twenty-four years.

The models for this study would first be stated in their functional forms. First, we consider inflation as a function of all stock market variables as follows:

$$INF = f(MCAP, ASI, TVLT) \quad (3.1)$$

inflation can also be seen as a monetary process,

$$INF = f(MCAP, ASI, TVLT, INT, MS, ENR) \quad (3.2)$$

Model 1: From equation (3.1), we would be testing the effects of stock market variables on inflation.

$$INF = \alpha + \beta_1(MCAP) + \beta_2(ASI) + \beta_3(TVLT) + \epsilon$$

Model 2: From equation (3.2), we would be testing the effects of stock market variables and other control variables on inflation.

$$INF = \alpha + \beta_1(MCAP) + \beta_2(ASI) + \beta_3(TVLT) + \beta_4(INT) + \beta_5(MS) + \beta_6(ENR) + \epsilon$$

In order to estimate the models above, the study uses a panel or pooled ordinary least squares regression.

IV. Results and Discussion

The results of estimating the models using panel regression are presented in this section as follows.

4.2.1 Panel Regression Estimate of Model 1

The first model estimate evaluates the effects of stock market variables on inflation. This is presented in Table 1.

Table 1 Panel Regression Estimate of Model 1

Dependent Variable: LOG(INFLATION) Method: Panel Least Squares
 Sample: 2000 – 2023
 Periods: 24
 Cross Sections: 10
 Total Balanced Panel Observations:240

Variable	Coefficient	Std.Error	t-Statistic	Prob.
C	19.30389	4.146445	4.655528	0.0000
LOG(MARKETCAP)	-2.842561	0.555020	-5.121552	0.0000
LOG(ALLSHARESINDEX)	1.098944	0.440772	2.493223	0.0133
LOG(TOTVOLTRADED)	-0.814714	0.304896	-2.672104	0.0081
R-squared	0.669185	Durbin-Watson stat		1.618140
Adjusted R-squared	0.557353			
F-statistic	5.847100	Prob(F-statistic)		0.000722

Source: (Author's Computation using E-views)

The panel regression model estimates the relationship between inflation and key financial market indicators, including market capitalization, the All-Shares Index, and total volume traded. The results provide valuable insights into how these

variables influence inflation in Sub-Saharan Africa (SSA) and the Middle East and North Africa (MENA) regions. The model has a high explanatory power, as indicated by the R-squared value of 0.669, meaning that approximately 66.9% of the variation



in inflation is explained by the included variables. The adjusted R-squared of 0.557 further confirms the model's robustness, accounting for the number of predictors. The F-statistic of 5.847 with a p-value of 0.000722 indicates that the model is statistically significant overall. The coefficient for **log(MARKETCAP)** is -2.842561, with a p-value of 0.0000, indicating a highly significant negative relationship between market capitalization and inflation. This means that a 1% increase in market capitalization is associated with a 2.84% decrease in inflation, holding all other variables constant.

The coefficient for **log(ALLSHARESINDEX)** is 1.098944, with a p-value of 0.0133, indicating a significant positive relationship between the All Shares Index and inflation. A 1% increase in the All-Shares Index is associated with a 1.10% increase in inflation, holding

other variables constant. This suggests that while stock market performance can drive economic activity, it may also lead to higher inflation, possibly due to increased consumer spending or asset price inflation. The coefficient for **log(TOTVOLTRADED)** is -0.814714, with a p-value of 0.0081, indicating a significant negative relationship between total volume traded and inflation. A 1% increase in trading volume is associated with a 0.81% decrease in inflation, holding other variables constant. This implies that higher trading activity can contribute to price stability, possibly by improving market efficiency and reducing speculative behaviour.

4.2.2 Panel Regression Estimate of Model 2

The second model estimate evaluates the effects of stock market variables and some control variables on inflation in the SSA and MENA regions.

Table 2 Panel Regression Estimate for Model 2

Dependent Variable: INFLATION Method: Panel Least Squares Sample: 2000 – 2023

Periods: 24

Cross Sections: 10

Total Balanced Panel Observations: 240

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	13.93280	5.371370	2.593900	0.0101
LOG(MARKETCAP)	-2.104184	0.483989	4.347581	0.0000
LOG(ALLSHARESINDEX)	1.455358	0.428043	3.400023	0.0008
LOG(TOTVOLTRADED)	-0.783085	0.279921	-2.797524	0.0056
LOG(INTERESTRATE)	6.720386	0.862360	7.793018	0.0000
LOG(MONEYSUPPLY)	-0.682666	0.215606	-3.166275	0.0018
LOG(ENROLMENTRATE)	0.303409	0.690902	0.439149	0.6610
R-squared	0.615491	Durbin-Watson stat		1.574817
Adjusted R-squared	0.597864			
F-statistic	17.89835	Prob(F-statistic)		0.000000

Source: (Author's Computation using E-views)

The second panel regression model expands on the first by including additional control variables— interest rates, money supply, and enrolment rates to better understand their effects on inflation in Sub-Saharan Africa (SSA) and the Middle East and North Africa (MENA) regions. The model has a strong explanatory power, with an R-squared value of 0.615, meaning that approximately 61.5% of the variation in inflation is explained by the included variables. The adjusted R-squared of 0.598 further confirms the model's robustness, accounting for the number of predictors. The F-statistic of 17.898 with a p-value of 0.000000 indicates that the model is statistically significant overall.

The coefficient for **log(MARKETCAP)** is -2.104184, with a p-value of 0.0000, indicating a highly significant negative relationship between market capitalization and inflation. This means that a 1% increase in market capitalization is associated with a 2.10% decrease in inflation, holding all other variables constant. This finding reinforces the idea that larger and more developed stock markets can help stabilize prices by attracting investment, improving liquidity, and fostering economic growth. The coefficient for **log(ALLSHARESINDEX)** is 1.455358, with a p-value of 0.0008, indicating a significant positive relationship between the All



Shares Index and inflation. A 1% increase in the All-Shares Index is associated with a 1.46% increase in inflation, holding other variables constant. This suggests that while stock market performance can drive economic activity, it may also lead to higher inflation, possibly due to increased consumer spending or asset price inflation.

The coefficient for **log(TOTVOLTRADED)** is -0.783085, with a p-value of 0.0056, indicating a significant negative relationship between total volume traded and inflation. A 1% increase in trading volume is associated with a 0.78% decrease in inflation, holding other variables constant. This implies that higher trading activity can contribute to price stability, possibly by improving market efficiency and reducing speculative behaviour. The coefficient for **log(INTERESTRATE)** is 6.720386, with a p-value of 0.0000, indicating a highly significant positive relationship between interest rates and inflation. A 1% increase in interest rates is associated with a 6.72% increase in inflation, holding other variables constant. This finding may seem counterintuitive, as higher interest rates are typically used to combat inflation. However, it could reflect the fact that central banks in these regions often raise interest rates in response to high inflation, creating a positive correlation between the two variables. pressures.

The coefficient for **log(MONEYSUPPLY)** is -0.682666, with a p-value of 0.0018, indicating a significant negative relationship between money supply and inflation. A 1% increase in money supply is associated with a 0.68% decrease in inflation, holding other variables constant. This finding aligns with the Quantity Theory of Money, which posits that changes in money supply influence inflation. The coefficient for **log(ENROLMENTRATE)** is 0.303409, with a p-value of 0.6610, indicating no significant relationship between enrolment rates and inflation. This suggests that changes in educational access do not directly influence inflation in the regions studied. While education is important for long-term economic development, its impact on inflation appears to be minimal in the short to medium term.

4.2.3 Hausman Test (With Inflation as Dependent Variable)

The purpose of the Hausman test in panel regression is to determine whether a fixed effects model or a random effects model is more appropriate for estimating the relationships between variables, by testing for the presence of correlation between the individual effects and the regressors. The result is shown in the table below.

Table 3 Hausman Test Result

Test	Equation	Cross-section random effects	
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	p-value
Cross-Section Random Effects - Hausman Test	19.264325	6	0.0037

Source: Author's computation using E-views

The test results show a Chi-Square statistic of 19.264325 with 6 degrees of freedom and a p-value of 0.0037. Since the p-value is less than the conventional significance level of 0.05, we reject the null hypothesis. This means that the fixed effects model is more appropriate for this analysis because the individual effects are correlated with the explanatory variables.

The rejection of the null hypothesis has important implications for the analysis. It suggests that there are unobserved country-specific factors (such as institutional differences, cultural factors, or policy frameworks) that are correlated with the explanatory variables in the model. These factors could bias the results if not properly accounted for. By using the fixed effects model, we control for these

unobserved factors, ensuring that the estimated relationships between the variables are more accurate and reliable.



4.2.4 Fixed Effects Model

The result of the fixed effects model is presented in Table 4.

Table 4 Fixed Effects Model

Dependent Variable: INFLATION
Method: Panel EGLS (Fixed effects)
Sample: 2000–2023
Periods Included: 24
Cross-sections Included: 10
Total Panel (Balanced) Observations:

Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-19.24438	16.62518	-1.157544	0.2483
LOG(MARKETCAP)	-8.136361	1.243673	-6.542210	0.0000
LOG(ALLSHARESINDEX)	4.104871	1.249028	3.286452	0.0012
LOG(TOTVOLTRADED)	-3.868801	0.400943	-9.649252	0.0000
LOG(INTERESTRATE)	4.954349	1.416479	3.497651	0.0006
LOG(MONEYSUPPLY)	-3.299142	0.978184	-3.373117	0.0010
LOG(ENROLMENTRATE)	-5.065844	1.292954	-3.918038	0.0001

Effects Specification

Statistic	Value	Statistic	Value
Root MSE	5.072255	R-squared	0.499390
Mean dependent	7.777286	Adjusted R-squared	0.465867
S.D. dependent var	7.183864	S.E. of regression	5.250282
S.E. of regression	5.250282	F-statistic	14.89696
Durbin-Watson stat	1.124861	Prob(F-statistic)	0.000000

Source: Author's computation using E-views 13

The fixed effects model provides a detailed understanding of the relationship between inflation and key financial market indicators, as well as control variables, in Sub-Saharan Africa (SSA) and the Middle East and North Africa (MENA) regions. The model accounts for unobserved country-specific factors, ensuring that the estimated relationships are more accurate and reliable. The coefficient for **log(MARKETCAP)** is -8.136361, with a p-value of 0.0000, indicating a highly significant negative relationship between market capitalization and inflation. This means that a 1% increase in market capitalization is associated with an 8.14% decrease in inflation, holding all other variables constant. This finding underscores the importance of developing larger and more robust stock markets to help stabilize prices and promote economic growth. The coefficient for **log(ALLSHARESINDEX)** is 4.104871, with a p-value of 0.0012, indicating a significant positive relationship between the All Shares Index and inflation. A 1% increase in the All-Shares Index is associated with a 4.10% increase in inflation, holding other variables constant. This suggests that while stock market performance can drive economic activity, it may also lead to higher

inflation, possibly due to increased consumer spending or asset price inflation.

The coefficient for **log(TOTVOLTRADED)** is -3.868801, with a p-value of 0.0000, indicating a significant negative relationship between total volume traded and inflation. A 1% increase in trading volume is associated with a 3.87% decrease in inflation, holding other variables constant. This implies that higher trading activity can contribute to price stability, possibly by improving market efficiency and reducing speculative behaviour. The coefficient for **log(INTERESTRATE)** is 4.954349, with a p-value of 0.0006, indicating a highly significant positive relationship between interest rates and inflation. A 1% increase in interest rates is associated with a 4.95% increase in inflation, holding other variables constant. This finding may seem counterintuitive, as higher interest rates are typically used to combat inflation. However, it could reflect the fact that central banks in these regions often raise interest rates in response to high inflation,



creating a positive correlation between the two variables.

The coefficient for **log(MONEYSUPPLY)** is -3.299142, with a p-value of 0.0010, indicating a significant negative relationship between money supply and inflation. A 1% increase in money supply is associated with a 3.30% decrease in inflation, holding other variables constant. This finding aligns with the Quantity Theory of Money, which posits that changes in money supply influence inflation. The coefficient for **log(ENROLMENTRATE)** is -5.065844, with a p-value of 0.0001, indicating a significant negative relationship between enrolment rates and inflation. A 1% increase in enrolment rates is associated with a 5.07% decrease in inflation, holding other variables

constant. This suggests that improved educational access can contribute to price stability, possibly by enhancing productivity and reducing income inequality.

Comparative Studies

Comparative Analysis for SSA and MENA regions

The economies of Sub-Saharan Africa (SSA) and the Middle East and North Africa (MENA) regions are shaped by different structures, yet both face ongoing struggles with inflation and stock market growth. Comparing these regions helps reveal how inflation affects stock market performance, especially in emerging economies with varying levels of financial development and stability.

Table 5 Comparative Panel Regression for SSA and MENA Regions

Dependent Variable: LOG(INFLATION)				
Sample: 2000–2023 Cross-sections: 5 Total Observations: 120 per region				
Variable	SSA Countries		MENA Countries	
	coefficient	p-value	coefficient	p-value
C	41.19336	0.0001	-32.13517	0.0023
LOG(MARKETCAP)	2.3386	0.0023	1.2464	0.4152
LOG(ALLSHARESINDEX)	2.9153	0.0000	0.1045	0.9512
LOG(TOTVOLTRADED)	-2.5093	0.0000	0.3345	0.4429
LOG(INTERESTRATE)	7.9125	0.0005	3.5454	0.0356
LOG(MONEYSUPPLY)	-1.2985	0.0001	0.0992	0.7615
LOG(ENROLMENTRATE)	-3.6044	0.0095	2.4671	0.0441
Model Performance Metrics				
R-squared	0.433		0.259	
Adjusted R-squared	0.403		0.220	
Root MSE	5.470		5.250	
F-statistic	14.37*** (p=0.0000)		6.596*** (p=0.000005)	
Durbin-Watson	1.267		0.868	

Source: Author's computation (2024)

In SSA, the results paint a picture of an economy where stock market development plays a dual role. On one hand, higher market capitalization and a stronger All Shares Index are associated with significant increases in inflation. A 1% rise in market capitalization leads to a 2.34% increase in inflation, while a 1% increase in the All-Shares Index drives inflation up by 2.92%. This suggests that while stock market growth fuels economic activity, it may also generate inflationary pressures, possibly through increased consumer spending or speculative behaviour. On the other hand, higher trading volume has a stabilizing effect, with a 1% increase in trading activity associated with a 2.51% decrease in

inflation. This highlights the importance of fostering liquid and efficient markets to mitigate inflationary risks.

Interest rates in SSA also exhibit a counterintuitive relationship with inflation. A 1% increase in interest rates is linked to a substantial 7.91% rise in inflation. This likely reflects the reactive nature of monetary policy in the region, where central banks raise interest rates to combat existing inflationary pressures rather than pre-emptively managing them. Meanwhile, higher money supply and improved educational access both contribute to lower inflation, with a 1% increase in money supply reducing inflation by 1.30% and a 1% rise in



enrolment rates decreasing inflation by 3.60%. These findings underscore the importance of prudent monetary policy and investments in education as tools for achieving price stability in SSA.

In contrast, the MENA region presents a markedly different economic landscape. Here, stock market development, measured by market capitalization and the All-Shares Index shows no significant impact on inflation. This suggests that stock markets in MENA are more mature and less likely to drive inflationary pressures. Similarly, trading volume does not significantly influence inflation, indicating that markets in the region are already efficient and stable. However, interest rates in MENA exhibit a significant positive relationship with inflation, with a 1% increase in rates associated with a 3.55% rise in inflation. This reflects the region's reliance on interest rate adjustments to manage inflation, though the effect is less pronounced than in SSA.

One surprising finding in MENA is the positive relationship between enrolment rates and inflation. A 1% increase in enrolment rates is

associated with a 2.47% rise in inflation, suggesting that improved educational access may drive higher demand for goods and services, thereby fuelling inflation. This contrasts sharply with SSA, where education acts as a stabilizing force. The difference may stem from varying stages of economic development and the unique socio-economic contexts of the two regions.

The model's performance metrics further highlight the differences between SSA and MENA. In SSA, the R-squared value of 0.433 indicates that the included variables explain 43.3% of the variation in inflation, while in MENA, the R-squared value of 0.259 suggests that other factors, such as external shocks or geopolitical dynamics, play a more significant role in shaping inflation.

The country-specific analysis looks at one country each from both regions and the criteria used in selecting the country is the country with the most developed or best stock market. For the SSA region, it is South Africa, while for the MENA region, it is Morocco. The study carries out individual regression analysis on both countries using inflation as the dependent variable.

Table 6 Country Specific Analysis

Dependent Variable: LOG(INFLATION) Sample: 2000–2023 Total Observations: 24				
Variable	South Africa		Morocco	
	coefficient	p-value	coefficient	p-value
C	8.125014	0.9203	-410.3680	0.0075
LOG(MARKETCAP)	2.219037	0.8072	-4.049389	0.4928
LOG(ALLSHARESINDEX)	6.184765	0.1303	-24.22089	0.0067
LOG(TOTVOLTRADED)	-3.355615	0.0391	-0.271386	0.7558
LOG(INTERESTRATE)	10.94523	0.0007	0.579471	0.8775
LOG(MONEYSUPPLY)	-0.168948	0.9811	24.16741	0.0054
LOG(ENROLMENTRATE)	-8.975020	0.1550	5.603570	0.0737
Model Performance Metrics				
R-squared	0.631646		0.477516	
Adjusted R-squared	0.501639		0.293111	
S.E. of regression	1.551427		1.361465	
F-statistic	4.858545 (p=0.0046)		5.589485 (p=0.0002)	
Durbin-Watson	0.5067		1.76474	

Source: Author's computation (2024)

The country-specific regression analysis focuses on South Africa, representing Sub-Saharan Africa (SSA), and Morocco, representing the Middle East and North Africa (MENA). These countries were chosen because they have the most developed stock markets in their respective regions.

The analysis examines how inflation is influenced by factors such as market capitalization, stock market performance, trading activity, interest rates, money supply, and education. The results reveal unique economic dynamics in each country, offering practical lessons for policymakers.



In South Africa, the regression model explains about 63.16% of the variation in inflation, as shown by the R-squared value of 0.631646. The adjusted R-squared of 0.501639 indicates that the model remains reliable even after accounting for the number of variables. The F-statistic of 4.858545 (p-value = 0.0046) confirms that the model is statistically significant overall. One of the key findings is the significant negative relationship between trading volume and inflation. A 1% increase in trading volume is linked to a 3.36% decrease in inflation. This suggests that higher trading activity can improve market efficiency and help stabilize prices. For policymakers, this highlights the importance of fostering liquid and active stock markets to reduce inflationary pressures.

Another notable result is the strong positive relationship between interest rates and inflation. A 1% increase in interest rates is associated with a 10.95% rise in inflation. This counterintuitive finding likely reflects the South African Reserve Bank's approach of raising interest rates in response to existing inflation rather than preventing it. This suggests a need for more proactive monetary policies that address the root causes of inflation rather than relying solely on reactive measures. Interestingly, market capitalization, stock market performance, money supply, and enrolment rates do not show significant relationships with inflation in South Africa. This indicates that these factors, while important for economic growth, do not directly drive inflationary pressures in the country.

In Morocco, the regression model explains about 47.75% of the variation in inflation, as indicated by the R-squared value of 0.477516. The adjusted R-squared of 0.293111 suggests that other factors, possibly external or not included in the model, also play a role. The F-statistic of 5.589485 (p-value = 0.0002) confirms that the model is statistically significant overall. One of the most striking findings is the significant negative relationship between stock market performance and inflation. A 1% increase in the All-Shares Index is associated with a 24.22% decrease in inflation. This suggests that a strong and stable stock market can contribute to price stability by attracting investment and fostering economic growth. For policymakers, this shows the importance of maintaining a robust financial market to support economic stability.

Another important result is the significant positive relationship between money supply and inflation. A 1% increase in money supply is linked to a 24.17% rise in inflation. This highlights the need for careful management of money supply to avoid excessive liquidity and inflationary pressures. Enrolment rates show a marginally significant positive relationship with inflation, with a 1% increase in enrolment rates associated with a 5.60% rise in inflation. This counterintuitive result may reflect the fact that increased educational access could lead to higher demand for goods and services, driving inflation. Market capitalization, trading volume, and interest rates do not show significant relationships with inflation in Morocco, suggesting that these factors do not directly influence price levels in the country.

V. Conclusion and Recommendations

The empirical analysis reveals a consistent negative relationship between market capitalization and inflation, indicating that larger and more developed stock markets contribute significantly to price stability. However, the study identifies a "dual-folded" dynamic: while market capitalization and higher trading volume (liquidity) exert stabilizing effects on prices, the All-Shares Index exhibits a significant positive impact on inflation. This suggests that while thriving stock markets drive economic activity, they can also generate inflationary pressures, particularly when market growth outpaces the real economy. Regarding control variables, the findings show that interest rates often have a complex, positive relationship with inflation, reflecting a reactive monetary policy where rates are raised in response to existing inflation rather than preventing it. Additionally, while increasing the money supply can stabilize prices up to a certain threshold, excessive liquidity tends to fuel inflation. Finally, expanding access to education generally contributes to economic stability, though it can occasionally lead to higher inflation due to increased demand for goods and services.

This study establishes that stock market performance, reflected through the All-Shares Index, market capitalization, and trading volume plays a significant and direct role in shaping inflationary trends. The relationship is characterized by a dual role: robust stock markets stimulate investment and consumer behavior, which can drive



inflationary pressures, yet more developed and liquid markets help moderate inflation by promoting better price discovery and reducing volatility.

Consequently, the study concludes that stock markets are not merely reactive to economic conditions but are active drivers that can both accelerate and stabilize inflationary tendencies. For policymakers in Sub-Saharan Africa and the MENA region, this implies that stock market activity should be viewed as a critical early-warning tool for inflationary shifts. Building resilient, transparent, and efficient stock markets is therefore essential, not just for financial growth, but for fostering long-term macroeconomic price stability.

Recommendations: Integrating Stock Markets into Inflation Targeting

i. Policymakers should explicitly integrate key stock market indicators, such as the All-Shares Index and market capitalization, into their inflation-targeting frameworks. Since empirical evidence confirms that these indicators significantly impact inflation, their inclusion would provide vital early-warning signals for future price trends.

ii. Specifically, if stock market performance metrics such as rising stock indices or rapidly expanding market capitalization suggest growing inflationary pressures, central banks could preemptively adjust interest rates or tighten monetary policies before inflation becomes entrenched.

iii. Conversely, if falling stock prices signal a potential decline in inflation or economic contraction, policymakers could adopt more expansionary measures. Adopting this approach would facilitate a more proactive monetary policy stance, allowing for timely interventions that reduce inflation volatility and enhance economic stability.

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