INTERNATIONAL JOURNAL OF ECONOMICS AND FINANCE STUDIES
Vol: 15 **No:** 02 **Year:** 2023 **ISSN**: 1309-8055 (Online) (**pp.** 131-150) **Doi:** 10.34109/ijefs. 202315207
Received: 22.12.2022 | **Accepted:** 30.03.2023 | **Published Online:** 01.04.2023

-RESEARCH ARTICLE-

THE EFFECT OF GLOBAL FINANCIAL INTEGRATION ON SOUTH AFRICAN BANK STOCK RISK PREMIA: A US VERSUS CHINA CONFLICT PERSPECTIVE

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─Abstract─

This study investigates the impact of global financial integration on the risk premiums of South African bank stocks. It analyzes the effects of the Chinese and American markets on the risk premiums of South African bank stocks. Using panel regression analysis and data from 2018: Q1 to 2022: Q1. The study reveals that factors from the Chinese stock market and economic environment explain variations in South African bank stock risk premiums more than those from the United States. It was also determined that the interaction between the Chinese and South African markets provides investors greater diversification opportunities.

1. INTRODUCTION

In recent years, African countries have paid considerable attention to global economic and financial integration. The World Trade Organization (WTO), the United Nations (UN), the Asia-Pacific Economic Co-operation (APEC), the African Union (AU), and the Southern African Development Community (SADC) are just a few of the numerous institutions that play a crucial role in propelling the global integration process. For membership and compliance, member countries of these types of international organizations may be required to formulate international and political policies that conform to the requirements of these international organizations. However, nations retain the discretionary right to form strategic political and diplomatic alliances with other countries. The formed strategic partnerships must be politically and economically advantageous; consequently, the debate on the advantages of global integration remains timely (Sabirovna, 2022).

Citation (APA): Mabejane, J. B. (2023). The Effect of Global Financial Integration on South African Bank Stock Risk Premia: A Us Versus China Conflict Perspective. *International Journal of Economics and Finance Studies, 15* (02), 131-150. doi:10.34111/ijefs. 202315207

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(Friedberg, 2005; T. Liu et al., 2018; Yan, 2010) China and the United States of America (US) are the leading global traders, international trade, and political rivals. Park and Alden (2012)Park et al. (2012) state that Chinese competitiveness raises global concerns. Carpenter et al. (2017) assert that the impact of the Chinese stock market on other global markets is growing. The United States is most perturbed by China's global economic expansion (Chen et al., 2020). South Africa's primary trading partners are China and the United States (Eom et al., 2017; A. Liu et al., 2018). The ongoing roller-coaster relationship between China and the United States places South Africa in a difficult position; South Africa must be explicit about its alliance position with the two countries. In several international economic and political forums, the relationship between South Africa and China is gaining prominence as a global factor. In cases where matters are decided by vote, South Africa may be compelled to choose whether to vote in favor of or against one of these global powers in disputes involving the two nations. The decision made may jeopardize relations with the country that voted against it.

Economic and financial integration processes facilitate international connectivity and synchronization. Among other things, the two processes enable market volatility transmission between countries and their respective markets by generating trade networks (Vo et al., 2018). Changes in one country's market and macroeconomic factors may affect the behavior of markets and the economy of other countries (Gong et al., 2018; Rana, 2007) in regions where global networks have been established.

This study seeks to determine the impact of global financial integration on the stock risk premiums of South African banks by examining how their association with the US and China affects their stock performance. This study aims to analyze and compare the nature of the relationship between the financial markets and economic conditions of the two countries, as well as the degree of their influence on the risk premia-based stock performance of South African banks. Examines the impact of market and economic exposure to these two countries on an investment portfolio comprised of these equities, as well as the impact of COVID-19 on the same.

Numerous studies have investigated the factors influencing stock performance in South Africa and other nations. Zivanemoyo Chinzara and Meshach Aziakpono (2009)Chinzara et al. (2009b) conducted one of the studies that analyzed the variables influencing stock performance in South Africa. The study focused on stocks in general without concentrating on a particular market sector, ignoring that companies react differently to various market factors based on the nature of their business. The study's findings may not apply to strategic bank decision-making. Enow and Brijlal (2016)Enow et al. (2016) investigated the determinants of South African stock prices. The study utilizes data from 14 of the top 40 companies listed on the Johannesburg Stock Exchange (JSE) but does not adequately address global environment-related factors. Like Zivanemoyo Chinzara and MJ Aziakpono (2009)Chinzara et al. (2009a) and Enow and

Brijlal (2016)Enow et al. (2016), it does not consider the factors that determine banks' stock prices or performance. Piesse and Hearn's (2005) study examines the transmission of returns volatility across Sub-Saharan countries from a global perspective. However, the research is not limited to the finance industry. It was conducted using data from before the global financial crisis of 2007–2009. As a result of regulators and institutions modifying their risk management strategies in response to the problem, there were several market adjustments following the global financial period.

Hakim, Hamid, and Meera (2015)Hakim et al. (2015) examined the determinants of excess returns on equities using data from the financial markets of Brazil, Russia, India, and China (BRIC). Boako and Alagidede (2016)Boako et al. (2016) and Boako and Alagidede (2017)Boako et al. (2017) examined the behavior of African stock prices and their interaction with global markets. Chinzara (2011)Chinzara (2011) and Phiri (2017)Phiri (2017) examined the determinants of stock performance without considering global financial integration and market globalization.

Few studies compare the interconnectedness of national stock markets and economic conditions. No study has adequately compared the correlation between the performance and macroeconomic conditions of the Chinese and American stock markets and those of South African banks' stock markets and macroeconomic conditions. In addition, there is a lack of research examining the impact of COVID-19 and global financial integration on the stock risk premiums of South African banks.

This study's findings will aid in evaluating and enhancing South Africa's international relations policies. They can also be used as a guide for financial risk management and investment decisions. The COVID-19 pandemic may be over, but other pandemics or situations requiring national lockdowns or economic inactivity, such as electric power disruptions (load-shedding), could arise. The results of this study will demonstrate the effect of coerced economic inactivity on the stock risk premiums of banks. These findings can facilitate the future adoption of informed pandemic control programs. An ongoing debate exists regarding the benefits of financial and economic integration. The results of this study will shed light on how financial integration has affected the banking industry, with a particular emphasis on the performance of bank equities, thereby contributing to the ongoing discussion regarding the advantages of economic integration.

2. LITERATURE REVIEW

This section examines research examining the global determinants of stock returns, prices, risk premia, and performance. In addition, the review concentrates on studies linking South Africa and China, South Africa and the United States, and those investigating the determination of risk premia in general.

Beine and Candelon (2011)Beine et al. (2011) investigate the effect of trade and financial liberalization on market connectivity using 15 years of data from 25 developing nations and panel data regression analysis. The study examines the impact of the reforms intended to open the sampled nations to international trade. It is found that trade and financial freedom positively affect the synchronization of global markets.

There is widespread agreement that integration and globalization result in a highly synchronized market (Davis, 2014). Morana (2008)Morana (2008) investigates the impact of economic and financial integration on international stock market correlations in the Group of Seven (G7) nations. The study concludes that economic and financial integration is crucial in determining the co-movement of these countries' equities. The study distinguishes between the effects of economic integration and financial integration. It reveals that global economic disruptions drive economic integration while financial integration is driven by shock spillovers.

In analyzing stock market synchronization, the direction of causality is also fundamental. Gambhir and Bhandari (2011)Gambhir et al. (2011) employ the Granger causality test to investigate the nature of the relationship between the stock markets of the BRICS nations. The study reveals that the markets of the BRICS countries are interconnected. In addition, it is determined that no single country dominates the influence of the markets in the other countries.

In examining the effect of financial integration on the equity markets of emerging markets, Donadelli (2013)Donadelli (2013) discovers that the degree of openness varies among emerging markets. The study also verifies that the transmission of volatility shocks depends on the country's degree of international integration. Using dynamic copula models and data on the FTSE and S&P from 1995 to 2009, Jinjarak (2014)Jinjarak (2014) concludes that trade relations and market openness increase the connectivity between international market forces and equity prices.

The connectivity, interdependence, and spillovers of stock markets have increased over time (Doman et al., 2013). Kenani, Purnomo, and Maoni (2013)Kenani et al. (2013) conducted a study assessing the extent of spillovers between Indonesia, China, Japan, and Indonesia. The investigation employed the exponential generalized autoregressive conditional heteroscedasticity (EGARCH) model as an analytical tool. According to the study's findings, China and Indonesia exhibit a pattern of reciprocal transmission of volatility shocks. However, the results also indicate that the volatility transmission between Japan and Indonesia is unilateral, with Indonesia acting as the recipient.

South Africa is the most globally active nation in Africa, and its market is interconnected with the most important markets. Zivanemoyo Chinzara and MJ Aziakpono (2009)Chinzara et al. (2009a) analyzed the connectivity between South African stock volatility and the rest of the world. The research utilized daily data from 1995 to 2007.

As analysis techniques, univariate EGARCH and multivariate vector autoregressive models were employed. The results of the study indicate that returns and volatility are connected between the South African stock market and the world's main stock markets. Comparatively, the Chinese, Australian, and American stock markets influence the South African stock market, according to the study.

Tsai (2017)Tsai (2017) conducted another study that examines the interaction of international markets. This study investigates the relationships between the United States, Europe, China, and the rest of the world. The study's findings provide evidence of volatility transmission between panel countries. This study indicates that China is a significant market disturbance transmitter. Its transmission rate is substantially higher than that of the United States. Consistent with Tsai (2017)Tsai (2017), Hakim et al. (2015)Hakim et al. (2015) estimated the capital asset pricing model using BRICS country data from 2004 to 2013. The study revealed that China is the largest transmitter of global shocks without receiving substantial shocks from its trading partners.

Misra (2018)Misra (2018) states that a portion of the volatility transmitted across markets results from changes in macroeconomic factors. Using data from 1995 to 2002, Bardhan, Edelstein, and Tsang (2008)Bardhan et al. (2008) analyzed the behavior of real estate-based equities for 946 companies from 16 countries. The study utilized a multifactor model to demonstrate that economic and trade openness harm real estate stock excess returns. Using data from 1995 to 2011 on 17 emerging market nations, Brana and Prat (2016)Brana et al. (2016) conclude that market liquidity and monetary policy are essential in determining stock performance. The study also reveals that business cycles are crucial in deciding excess stock returns. Furthermore, it asserts that when the economy experiences financial distress, excess returns on equity decline.

3. THEORETICAL SPECIFICATION OF THE ESTIMATION MODEL AND DATA

3.1 Theoretical Specification of the Estimation Model

This study investigates the determinants of excess returns on the equities of South African financial institutions. The analysis is conducted with a global perspective, thus incorporating global factors. It examines the impact of the Chinese and American markets on the excess returns of South African bank stocks. The study investigates and contrasts the impact of the Chinese and American markets on the stock risk premiums of South African banks. The study estimates an expanded variant of William Sharpe's (Sharpe) capital asset pricing model (CAPM) from 1964. The adopted model modifications are discussed in equations 1 to 6. The original version of Sharpe's (1964) model considers asset sensitivity and systematic risk. The model establishes the stock risk premium as a function of the risk-free rate and market excess return. The model is

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based on the principle that investors should receive higher returns than those provided by risk-free securities to compensate them for assuming additional risks by investing in a relatively riskier asset. This study employs a bottom-up analysis strategy when examining the factors influencing the premiums on bank stocks. Following in part Hakim et al. (2015)Hakim et al. (2015) and Ruiz de Vargas and Breuer (2018)Ruiz de Vargas et al. (2018), this analysis will build on the CAPM (1964), a single-factor model as shown in equation 1. This equation will be considered the foundational equation. The research will progress from the single factor equation to equation 3, regarded as the Global Multifactor CAPM.

This study commences its analysis by estimating the Sharpe (CAPM) version estimated with the incorporation of lags. The coefficients of the lagged market excess return reveal the nature of the persistence of the association between the market and banks' stock risk premia in South Africa.

$$R_{i,t} - rfr_t = \alpha + \beta M_t + \varepsilon \quad (1)$$

$$R_{i,t} = \frac{P_t - P_{t-1}}{P_{t-1}} * 100, \quad (1a)$$

P_t is the price of the stock in period 1,

P_{t-1} is the price of the stock in the previous period,

and

$$R_{i,t} - rfr_t = Risk\ Premia \quad (1b)$$

$R_{i,t}$ denotes observed stock of a bank return at time t, rfr_t denotes the risk-free rate at time t, M_t represents the risk premia at time t, and ε is the stochastic error term. The α (alpha) represents the return on risk-free security, and the β (beta) provides information on the relationship between the observed stock and the market. Subscripts t and i represent the time range and the number of banks whose stocks have been included in the panel. A positive beta indicates that the stock is moving in synch with the market, and a negative beta suggests an inverse relationship between the bank stock and the market. A beta lower than 1 indicates that the stock has a lower risk than the market portfolio, and a beta greater than 1 indicates that the bank stock is riskier than the market portfolio. Beta is also identified as a measure of systematic risk; it indicates whether a stock provides diversification opportunities.

Ward and Muller (2012)Ward et al. (2012) point to the inadequacy of the traditional single-factor CAPM. The study embraces the theory stating that multiple factors

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determine stock returns. Building on equation 1, the study incorporates domestic factors that could determine South African banks' stock premia while holding constant the global factors in the analysis. The study includes a change in economic growth to determine the impact of macroeconomic conditions on the banks' stock risk premia. Although COVID-19 emanated from an environment outside South Africa, it will be considered in this equation because the lockdowns adopted were specific to the situation in the country; once the pandemic was detected in the country, it became a domestic issue. Equation 2 is thus specified as follows:

$$Rsab_{i,t} - rfrsa_t = \alpha + \beta_{sa}\left(Rsa_{i,t} - rfrsa_t\right) + \lambda COVID - 19_t + \eta LnGDPsa_t + \varepsilon \quad (2)$$

Where,

$Rsab_{i,t}$ denotes return on South African bank stocks,

$rfrsa_t$ denotes the risk-free rate in South Africa,

$Rsa_{i,t}$ denotes South African stock market return,

$COVID - 19$ is a dummy variable representing the COVID-19-related lockdowns in South Africa.

$LnGDPsa_t$ denotes a variable that proxies domestic economic conditions,

λ is a coefficient for COVID-19,

η is a coefficient for domestic economic conditions,

α is the constant and,

ε is the stochastic error term.

Globalization enables interactions between markets on a global scale, resulting in the synchronization of markets and the spread of the contagion effect among global equities. Due to this contagion effect, the segmented form of the CAPM must be modified; therefore, the more global form of the CAPM must be considered. The role of investors who look to hold a globally invested portfolio and the ownership structures of companies, as some are either international or multinational, contribute to the effect of integration on stocks. The study estimates equation 3 based on the first and second equations. Equation 3 is regarded as the global CAPM, and all international and domestic factors are accounted for when estimating the equation. The expression is given as follows:

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$$Rsab_{i,t} - rfrsa_t = \alpha + \beta_{sa}\left(Rsa_{i,t} - rfrsa_t\right) + \beta_{ch}\left(Rch_{i,t} - rfrch_t\right) + \beta_{US}\left(Rus_{i,t} - rfrUS_t\right) + \Upsilon_{sa}LnGDPsa_t + \Upsilon_{ch}LnGDPch_t + \Upsilon_{us}LnGDPus_t + COVID - 19_t + \delta FI_t + \varepsilon \quad (3)$$

Where,

$\left(Rsa_{i,t} - rfrsa_t\right)$ denotes the South African market risk premia,

$Rsa_{i,t}$ represents stock market return in South Africa,

$rfrsa_t$ denotes a risk-free rate in South Africa.

$Rus_{i,t}$ represents stock market return in the US,

$rfrUS_t$ denotes risk-free rate in the US,

$\left(Rus_{i,t} - rfrch_t\right)$ denotes the US market risk premia,

$Rch_{i,t}$ denotes the broad market return in China,

$rfrch_t$ denotes risk-free rate in China,

$\left(Rch_{i,t} - rfrch_t\right)$ denotes Chinese market risk premia

FI denotes financial integration, measured by Ispeed (De Nicolò et al., 2014)

β_{us} and β_{ch} US and Chinese South African market beta, respectively,

Υ_{sa} , Υ_{ch} and Υ_{us} are the coefficients of economic conditions in South Africa, China, and the US, respectively,

α is the constant,

λ is the coefficient for financial integration and,

ε is the stochastic error term.

3.2 Data

The Study Utilizes Quarterly Panel Data Of Seven Listed South African Banks Functioning From 2018: Q1 To 2022: Q1. Quantec Easydata Provides Economic Data Such As Gross Domestic Product (GDP) And Balance Of Payments For The United States And China. Data From The Nasdaq Composite Index And The Hang Seng Index Represent The US And Chinese Stock Markets, Respectively. IRESS Provides The Data For These Two Variables (See Table 1).

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Table I. Description of Variables

Variable	Description	Source
Psa_t	Price of stock (JSE-ALL index)	IRESS
$Psab_t$	Price of stock (JSE-South African banks)	IRESS
Pus_t	Price of stock (NASQAQ Composite Index)	IRESS
Pch_t	Price of stock (Hangseng Index)	IRESS
$Rsa_{i,t}$	Return on stock (South African market)	Calculated in equation 1a
$Rsab_{i,t}$	Return on bank stocks (South African banks market)	Calculated in equation 1a
$Rus_{i,t}$	Return on Stock (US stock market)	Calculated in equation 1a
$Rch_{i,t}$	Return on Stock (China stock market)	Calculated in equation 1a
$rfrsa_t$	Risk-Free Rate South Africa (Treasury Bill Rate)	Easydata Quantec (IMF)
$rfrch_t$	Risk-Free Rate China (Treasury Bill Rate)	Easydata Quantec (IMF)
$rfrus_t$	Risk-Free Rate US. (Treasury Bill Rate)	Easydata Quantec (IMF)
ln_gdp_sa	Log of GDP (South Africa)	Easydata Quantec (IMF)
ln_gdp_us	Log of GDP (US.)	Easydata Quantec (IMF)
ln_gdp_us	Log of GDP (China)	Easydata Quantec (IMF
Sa_b_premia	South African banks' stock risk premia	Calculated in equation 1b
sa_m_premia	South African risk premia	Calculated in equation 1b
ch_m_premia	Chinese banks' stock risk premia Calculated in equation 1b	
us_m_premia	US banks' stock risk premia	Calculated in equation 1b
FI	Advances in financial integration are measured as follows: $Ispeed^1{}_{i,t} = (R_t^j - \frac{1}{N}\sum_{i=1}^{N} R_t^j)^2$	
COVID-19	A dummy variable takes a value of 0 when there is no COVID-19 crisis and 1 otherwise (2020: Q1–2021: Q4).	

[1] Measures advances in financial integration as a distance of the market risk premia of a country from a measure of central tendency of the cross-country distribution of market risk premia. (De Nicolò et al., 2014).

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Table II. Autocorrelation And Heteroskedasticity Test

Equations	**Model**	**Wooldridge test for autocorrelation in panel data**		**Test for heteroskedasticity**		**Decision: 5 percent Level of significance**
Equation 1	FEM	F (1,6) = 1.058	Prob>F= 0.3433	Chi2 (7) = 89.66	Prob > chi2 = 0.000	No Serial correlation
						Heteroskedasticity
Equation 2	FEM	F (1, 6) =9.038	Prob>F=0.0238	Chi2(1) = 102.25	Prob > chi2 = 0.000	Serial correlation
						Heteroskedasticity
Equation 3	POLS	F (1,6) =23.991	Prob>F= 0.003	chi2(1) = 2.16	Prob > chi2 = 0.14	Serial correlation
						No heteroscedasticity

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Table III. Panel Regression Results

DEPENDENT VARIABLE	**SA_BANK_PRIMIA**					
EQUATION Model	**EQUATION 1 FEM**		**EQUATION 2 FEM**		**EQUATION 3 POLS**	
	Coeff.	**Robust STD Error**	**Coeff.**	**Robust STD Error**	**Coeff.**	**Robust STD Error**
sa_m_premia	1.085517***	0.2056	1.1761***	0.185	1.9015***	0.306162
L1.sa_m_premia	0.634006***	0.2290	0.735***	0.193	1.3721**	0.385088
L2.sa_m_premia	0.660441***	0.1172	0.889***	0.088	0.4156	0.307875
L3.sa_m_premia	-0.15479	0.2423	-	-		
ln_gdp_sa	-	-	-	-		
L.ln_gdp_sa	-	-	-37.494*	18.484	102.0208	94.27443
COVID-19	-	-	-10.798***	1.196	-21.1826**	7.627663
FI					3.116126***	0.684263
us_m_premia	-	-	-	-	0.048194	0.549573
ch_m_premia	-	-	-	-	-1.14933*	0.548625
ln_gdp_ch	-	-	-	-	120.1353**	48.20047
ln_gdp_us	-	-	-	-	12.56473	79.93825
Cons	3.322317	1.0928	1061.73*	517.31	-6485.54***	1653.067
	F (4,6) = 67.08		F (5, 6) = 123.21		F (6, 6) = 11.50	
	Prob > F = 0.000		Prob > F = 0.000		Prob > F = 0.0000	
R-Square	0.41		0.45		0.59	
No. of groups	7		7		7	
No. of Obs	98		105		91	

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4. Robustness, Results, and Discussions

4.1 Robustness

The study employs the Hausman test to determine whether the fixed effects model (FEM) is preferable to the random effects model (REM). By evaluating the systematic difference in the coefficients of FEM and REM, the Hansen test contrasts the consistent but less efficient estimator (FE) with a more efficient estimator that is only consistent. Where the Hausman statistic test falls short, the Sargan-Hansen test has been applied. The Sargan-Hansen statistic test, unlike the Hausman test, reestimates the random effects equation by adding more variables, including transformed original regressors. The test consistently generates positive results (Schaffer et al., 2016). For equations 1 and 2, FEM was deemed more appropriate by the experiments, while POLS was considered appropriate for estimating equation 3. The applicability of POLS indicates that, on average, the stock performance of South African banks is comparable. The results of the Wooldridge test for autocorrelation and the Pagan/Cook-Weberg test for heteroskedasticity are presented in Table II. The results indicate that equations 2 and 3 exhibit autocorrelation of the first order. The Breusch-Pagan/Cook-Weisberg test shows that equations 1 and 2 exhibit heteroskedasticity. Estimates for all three equations were made using robust standard errors.

4.2 Estimation Results

The estimated equations' results are presented in Table 3. As previously stated, equation 1 is a conventional CAPM with delays, and the following equations are a continuation of equation 1. In section 3 of this study, the development from equations 1 to 3 has been described.

5. DISCUSSIONS

Equation 1 is a replication of the conventional CAPM. It incorporates the stock risk premium delays. Including the uncertainties of the stock risk premiums provides information about the effect of market risk premiums from previous periods on the current period's stock risk premiums for banks. The beta is the coefficient of the market risk premium. It indicates a risk that cannot be mitigated by diversification. A stock with a high specific risk will only have a high return in proportion to its market return sensitivity (Perold, 2004). The beta coefficient of 1.085517 in equation 1 indicates that investing in a portfolio comprised of South African bank stocks almost entails the same risk as investing in a portfolio that mimics the South African stock market. The coefficient indicates that the returns of a portfolio comprised of bank equities are nearly perfectly correlated with those of the South African market. High systemic risk is associated with South African bank equities. Positive and substantial coefficients of the lagged market excess returns in equations 1 and 2 indicate that the strength of the South

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African stock market's influence on the portfolio comprised of South African bank stocks persists over three quarters.

In equation 3, the coefficient of the lagged coefficient of economic growth is negative and statistically significant, indicating that the excess return on South African bank equities reacts negatively and with a quarter-point lag to changes in domestic economic growth. The insignificant coefficient of the US economic growth variable in equation 3 indicates that the stock performance of South African banks is insensitive to changes in the US economy. This finding is reliable. China's economic growth is significant and positive, indicating a direct relationship between China's economic conditions and the stock performance of South African banks. Cole, Moshirian, and Wu (2008)Cole et al. (2008) also report a positive correlation between the returns on bank stock and economic development. The results also indicate that China has a greater impact on the performance of South African bank equities than the United States. China is the largest transmitter of global shocks, as Tsai (2017)Tsai (2017) and Hakim et al. (2015)Hakim et al. (2015) discovered. The conclusion is supported additionally by Appendices 1, 2, and 3. The Appendix 1 results of the rolling window regression indicate the US and Chinese market influence trend on South African bank equities. Throughout the entire research period, Chinese stock market influence appears to have dominated that of the United States. The impact of the US and China's macroeconomic environments on the performance of South African bank equities is detailed in Appendix 2. The results indicate that the Chinese stock market has a greater impact on the performance of South African bank equities than the US. The conclusion is further supported by Appendix 3, which illustrates the correlation between the stock risk premiums of South African banks and global factors. The results indicate that Chinese economic and market factors outweigh US factors in determining the stock risk premiums of South African banks. The effects of US and Chinese global factors on the performance of South African bank equities exhibit contradictory, inverse patterns, as shown in Appendices 1 and 2. (Whenever the impact of Chinese factors on the stock performance of South African institutions increases, the effects of US factors in determining the same decreases correspondingly; the converse is also true.

Equation 3 compares the relationship between the US and Chinese stock markets and the stock risk premiums of South African banks. Equation 3 demonstrates that the US current period risk premium coefficient is positive but insignificant. In the current period, the South African banks' stock portfolio does not correlate with the US stock market, suggesting that a portfolio comprised solely of South African banks' stocks is immune to fluctuations in the US stock market. The relationship between the two markets does not provide investors with distinct or substantial diversification advantages. In contrast, the China market risk premium coefficient for the present period is negative and statistically significant. The identified inverse relationship between the

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South African banks' stock market and the Chinese stock market suggests that the two markets offer investors a clear and substantial diversification opportunity.

In equation 3, the variable global financial integration and trade opening is positive and significant. The results indicate that opening the economy to commerce with China and the United States improves the performance of South African banks on the stock market. This finding is consistent with those of Donadelli (2013)Donadelli (2013), who also discovered that excess returns on emergent stock markets improve as global integration between nations increases. In equations 2 and 3, the coefficient of the COVID-19 variable is negative and statistically significant, indicating that the imposed lockdowns harmed the bank-based stock market in South Africa during the COVID-19 period. This result is consistent with those of Takyi and Bentum-Ennin (2021)Takyi et al. (2021) and Bahrini and Filfilan (2020)Bahrini et al. (2020), who discovered that COVID-19 harmed stock prices in African and Gulf Co-operation Council (GCC) nations, respectively. Appendices 1 and 2 demonstrate that during COVID-19, the impact of the US market and economic factors on the performance of South African bank stocks diminished. In contrast, the effects of Chinese factors increased substantially.

6. OPPORTUNITIES FOR FURTHER RESEARCH

This study investigates the determination of banking sector stock risk premiums. The same analysis is required for other industries, such as the mining and real estate sectors. This study mentions other factors that may contribute to economic inactivity but concentrates on the impact of the COVID-19 pandemic on economic activity. The energy crisis in South Africa also forces economic inactivity. It is necessary to explicitly account for the effects of power outages on the performance of the stock markets.

7. CONCLUSIONS

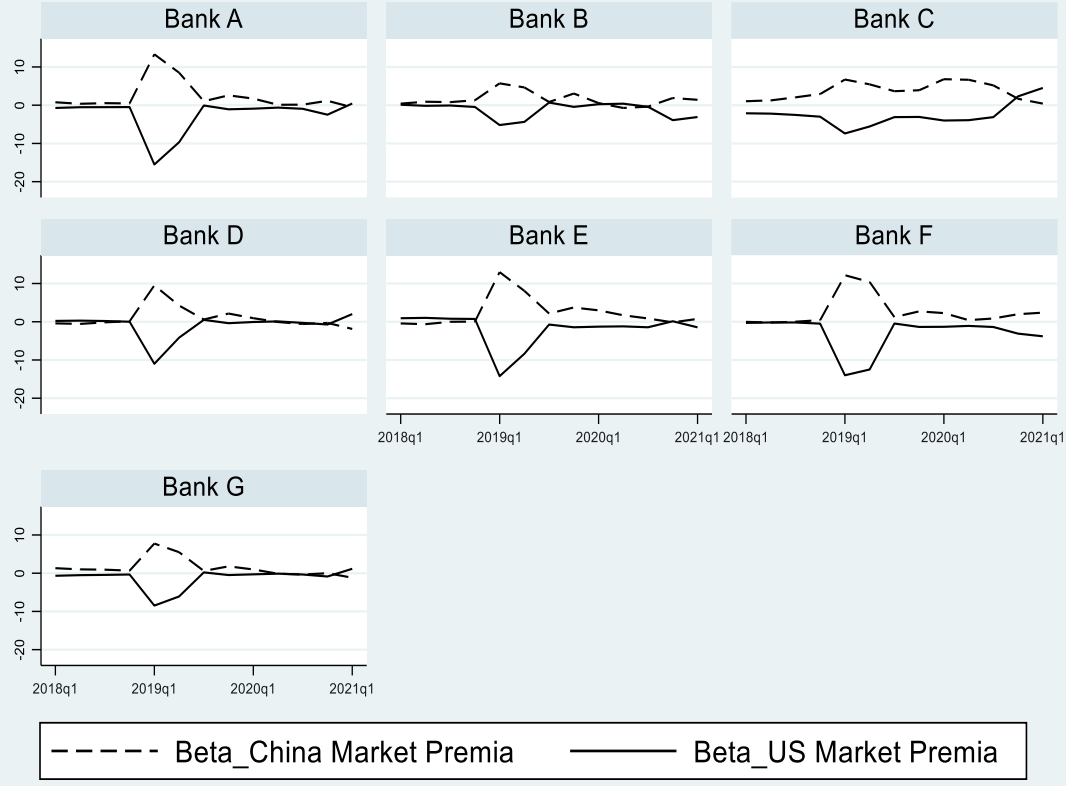
This study aimed to determine and compare the effect of the global market and economic integration on the determination of the stock risk premiums of South African banks. It focuses on the impact of the US and Chinese stock markets and economic conditions on the stock risk premiums of South African banks. COVID-19 has also been included as a factor influencing South African institutions' stock performance due to the study's recognition of global integration as a means of COVID-19 transmission between nations.

The study discovered a negative correlation between the Chinese stock market's performance and South African banks' stock risk premiums. The association offers investors diversification opportunities. It has also been discovered that China's favorable economic conditions are conducive to the performance of South African bank equities. The study results corroborate that COVID-19 negatively affected the stock performance of South African banks. It has also revealed a contradictory inverse pattern of the influence of Chinese and American market factors in determining the stock risk

premiums of South African banks. When the impact of the Chinese stock market on the stock performance of South African banks increases, the influence of the United States decreases. The study also revealed a diversification opportunity between South African bank stocks and the Chinese stock market. There are no obvious diversification opportunities between the US stock market and South African bank securities. Lastly, the study demonstrates that global market integration improves the stock performance of South African banks.

Appendix: 1 Window Rolling Betas US and China[2]

$$Rsab_{i,t} - rfrsa_t = \alpha + \beta_{ch}\left(Rch_{i,t} - rfrch_t\right) + \beta_{US}\left(Rus_{i,t} - rfrUS_t\right) + \varepsilon$$



[2] The graphs show the trend of the coefficients of the U.S. and China global market betas. The betas indicate the magnitude of influence of the two markets in determining South African bank stock performance respectively.

INTERNATIONAL JOURNAL OF ECONOMICS AND FINANCE STUDIES
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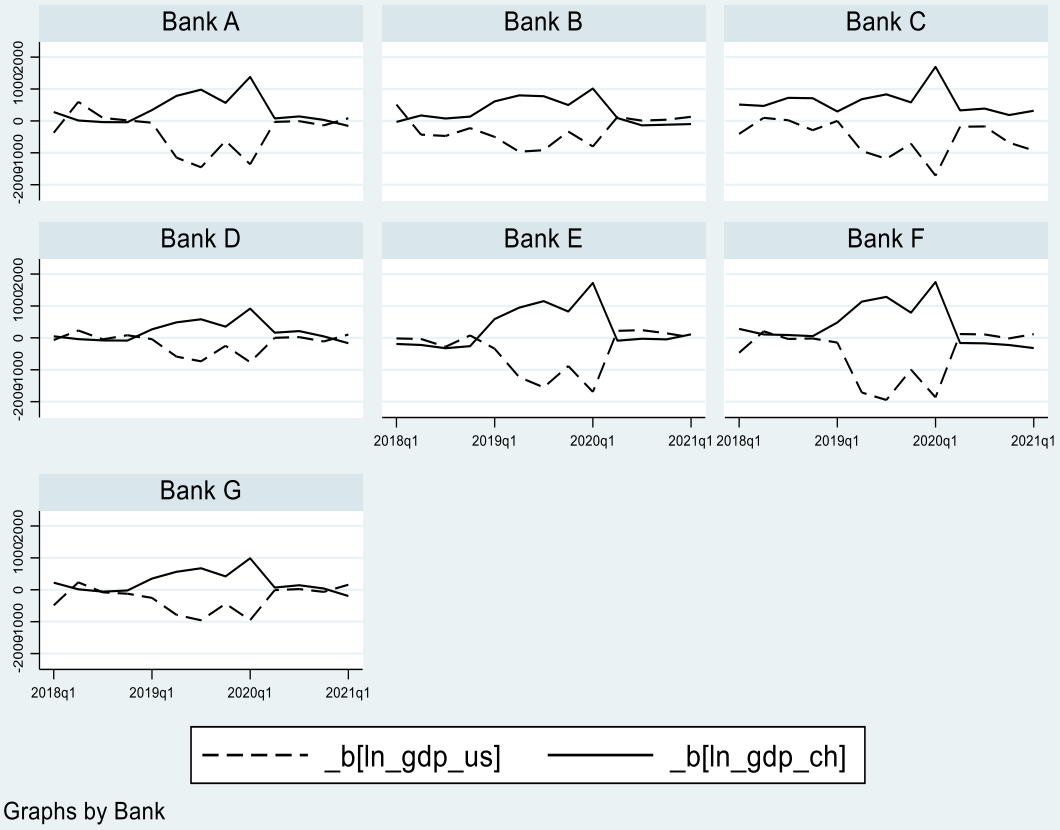
Appendix 2: Rolling window coefficient of US and China GDP[3]

$$Rsab_{i,t} - rfrsa_t = \alpha + ¥LnGDPch_{t\_} + ßLnGDPch_t + \varepsilon$$



Appendix 3: US vs China, SA banks' stock correlation analysis

	sa_bank_premia	ch_m_premia	us_m_premia	ln_gdp_us	ln_gdp_ch
sa_bank_premia	1				
ch_m_premia	0.2522	1			
us_m_premia	0.0655	0.7343	1		
ln_gdp_us	0.2195	0.0441	0.1585	1	
ln_gdp_ch	0.2414	0.1396	-0.0597	0.5155	1

[3] The graphs show the trend of the coefficients of the U.S. and China economic condition factors in determining the South African banks' stock performance.

Vol: 15 **No:** 02 **Year:** 2023 **ISSN**: 1309-8055 (Online) (**pp.** 131-150) **Doi:** 10.34109/ijefs. 202315207

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