



## Analysis of Pre- and Post-Global Financial Crisis Evidence Concerning Financial Incorporation and Stock Market Effectiveness

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### Abstract

Within the context of the 2008-2009 global economic crisis, the goal of this study is to look at the possible effects that informational efficiency may have on financial globalization and market microstructure. Ten developed and rising African markets make up the sample, which spans the years 2003 to 2012. The results, which were obtained using the same methods, reveal several intriguing aspects. First, markets with greater US market integration also tend to be more productive. Also, this large and favourable correlation is observed in both established and African stock market groupings. Secondly, the correlation between informational effectiveness and economic assimilation loses some of its descriptive power throughout the worldwide economic crisis when African developing markets seem to be more precarious than their developed equivalents. In general, the findings lend credence to the idea that the advantages of commercial integration for Africa could be substantial, which could entice overseas investors who are trying to maximize expected returns while minimizing risk.

**Keywords:** *Global Financial Crisis; African Stock Markets; Explanatory Strength; Financial Integration*

### Introduction

Over the past 30 years, rules on how money moves around the world have been slowly loosened, making the world's economic markets more linked. The migration between different national stock markets has increased as a result. The main goals of this massive financial liberalization movement are to boost long-term economic growth and information efficiency (Gupta, 2021).

In fact, the lack of liquidity, low trading volume, high transaction costs, and large knowledge gap are common features of evolving and emerging markets. Both the International Monetary Fund and the World Bank have said that opening stock markets to the rest of the world could be a good way to solve the problems in the financial sector right now. The easier it is for foreign investors to get into domestic markets, the more likely it is that there will be capital inflows, more money in the market, and better use of information. Capital is allocated more efficiently when stock prices are effective. Better deployment of capital leads to increased output and faster economic growth.

Still, the fact that economic crises are getting worse, and that stock market instability is getting a lot worse shows that there are risks to financial deregulation as well. This has led to a political and intellectual debate about whether emerging economies benefit from unrestricted capital flows, which casts doubt on the stated goals of the economic liberalization procedure (particularly in terms of monetary growth). This study backs up what other research has found, which is that there isn't always strong evidence that financial integration boosts growth (Lee & Yoo, 2020). Because of this, several

authors, including others, have investigated a new line of inquiry by trying to find an answer to the question of what preliminary conditions must be met to create a foundation for financial openness. These researchers began with the premise that while risks cannot ever be eliminated, there are some "thresholds" that must be adhered to reap the full advantages of financial liberalization's indirect effects and lower the risks involved. Similar arguments suggest that the ascendancy of private and public organizations, the degree of lucidity of governmental happenings, the prevalence of exploitation, and the efficacy of legal and jurisdictional frameworks are all necessary conditions for financial integration to have a positive and significant effect on growth. They have discovered that to profit from integration, countries must meet several requirements related to their level of economic, institutional, and financial development, as well as their level of public spending. Improved banking management and administration, a more flexible exchange rate scheme, a proper monetary policy structure, the implementation of countercyclical macroprudential laws, and a provisional restriction on short-term money flows are all required steps towards financial openness (Gelos *et al.*, 2022).

Nonetheless, the fact that the present economic crisis originated in the US housing market in 2007 and quickly extended to many industrialized nations demonstrates that even nations with highly established financial systems have occasionally faced periods of financial instability. This monetary instability might have a detrimental impact on economic development.

### **Review of Literature**

One of the major goals of economic deregulation is to make capital markets work better. In fact, there has been anticipation that financial deregulation will increase foreign investors' levels of cash flow and precision, which will boost their presentations.

So, if you look at the theoretical and practical literature about the link between the idea of financial liberalization and informational efficiency, you can see that there are two main, separate lines of inquiry. According to the first, financial liberalization improves informational efficiency in two ways: (1) by encouraging and promoting foreign ownership, and (2) by increasing competition between domestic and foreign investors, which improves the quality and amount of information on economic markets (by increasing the number of domestic securities held by foreign investors). That is, having overseas shareholders on the local market brings in a lot of money and makes it easier for information to spread quickly on the international market. Both things make the financial markets more liquid. So, both international and domestic investors are more likely to take advantage of arbitrage opportunities when the market is liquid. Once these arbitrage opportunities are gone, the prices of financial assets move closer to their equilibrium value, which reduces the sources of incompetence (Ni & Liu, 2019). The second one strengthens the idea that major financial and economic disasters, like the Asian Crisis of 1997, the Internet Bubble of 2001, and the Global Financial Crisis, are caused by too fast and unchecked liberalization of the financial markets. The huge rise in financial instability is the cause of these ongoing financial crises. Make it crystal clear that the main reasons for the persistence of this financial instability are the development of hypothetical bubbles and the increase in illogical investor behavior (derivative and extroverted behavior, etc.). Hence, monetary disarray can be seen as evidence of the financial system's ineffectiveness and defects. Financial integration and informational efficiency are investigated, with a focus on the direct relationship between the two ideas stated above (effectiveness and incorporation), as well as the relationship between stock market effectiveness and financial emergencies (Liu, Choo & Lee, 2020).

### **Economic Incorporation and Stock Market Productivity**

Most empirical research into the link between economic liberalization and market effectiveness has come up with results that are unclear or contradictory. Some tests of data-driven efficiency, like autocorrelation tests, haven't changed much since the market opened. This finding disproves the theory that rising nations improve their productivity after formal liberalization. Tested to see if the Amman stock exchange became more productive once liberalization began in 1997. They proved that financial deregulation has no beneficial effect on market performance. The liberalization process has

had a substantial and positive impact on the performance of the Greek stock market, according to the study's conclusions. Evaluation was done using a model with time-varying parameters to examine the slow but consistent influence of liberalization on the weak effectiveness of several evolving financial systems. According to them, empirical studies indicate that liberalization has a substantial effect on efficiency, but the direction of these impacts is unclear because they seem to be market-driven. By evaluating the dynamic behavior of Hurst's exponent, it has been demonstrated that the liberalization procedures and Tunisian stock market reforms contributed to the reduction of variations from the informational market effectiveness hypothesis (weak form effectiveness).

Also, it was suggested that the flow of information could be made more efficient by officially combining African stock markets and linking them to markets around the world. To test the hypothesis that a more connected stock market is associated with better efficiency, the authors employed the adjusted pricing error from a market model as a substitute for economic integration and the country-level price delay as an inverted extent of informational effectiveness. The country-level price delay shows how quickly stock prices adapt to familiar global data. The results back up the idea that the most connected markets to the rest of the world are also the most efficient. However, this positive correlation between the two key variables (incorporation and effectiveness) was only found in the subsample of developing stock markets (which included 29 emerging markets and 22 developed markets) for the period 1995–2007, indicating that financial liberalization not only increases competence but also diminishes the likelihood of a financial crisis. Additionally, they pointed out that each financial market's inherent peculiarities affect how well information is shared. Another study looked at how financial liberalization affected the effectiveness of information in 13 emerging economies. Throughout the duration of January 1986 to December 2008, they estimated a time-altering parameter prototype to achieve this.

The outcomes of their research demonstrated that markets have become more effective recently. They also showed that structural breaks in the predictability of stock returns were linked to both the formal liberalization periods and their other experiences. Most recently, an attempt was made to look at the Granger causal links (between commercial liberalization and informational effectiveness) using panel data from 27 rising nations from 1996 to 2011. They showed that the process of liberalization hurts the informational effectiveness of stock markets in the short period but helps in the long period. It was found that changes in regulations and liberalization in the financial sector don't have much of an effect on how well data is used. This could happen if deregulation has led to an uneven spread of important information. Companies that are cross listed in multiple countries give global investors access to data that may not be readily available to domestic investors. Due to the diverse trading positions that these two types of investors can adopt, it is unclear whether stock prices accurately reflect their true value. Additionally, foreign investors can earn by outperforming the market by using their informational edge. This could negate any efficiency gains made in the financial markets because of other liberalization-related factors.

### **Stock market productivity and financial emergencies**

There have been serious problems in the financial industry, which show up as financial crises, for a long time. A clear sign of a financial crisis is an increase in moral hazard and adverse selection, as well as a sharp drop in the value of assets and the catastrophe of many economic and non-economic businesses. Because of this, financial markets won't be able to direct savings to the best places to invest. In other words, they increase the amount of information that isn't the same for everyone, which makes it harder for financial markets to work well.

Due to how bad financial crises have been for the financial world and how often they happen, some researchers felt compelled to find out if there was a link between these crises and how well the financial markets worked (Greek crisis in 2011, Asian crisis in 1997, global financial crisis in 2008, Internet bubble burst in 2001, Russian crisis in 1998). These crises include the 1998 Russian crisis,

the 1997 Asian crisis, and the 2011 Greek crisis. And the 2008 global financial crisis (Indirect influence of crises on informational productivity) Using the spinning bicorrelation test data for a total of three subperiods, for instance, an analysis was conducted to examine how the Asian crisis impacted the informational effectiveness of eight Asian stock markets (ahead of the crisis, throughout the crisis, and following the crisis). They determined that the crisis had a negative effect on the efficiency of stock markets throughout Asia, with Hong Kong suffering the most. This finding was supported by the studies they conducted. The findings indicated, on the one hand, the continuation of a non-linear serial dependency, which demonstrated the presence of an equilibrium (efficiency) departure due to the influence of external shocks. Despite this, most of these nations have demonstrated a rise in productivity in the post-crisis years. Lim, Brook, and Kim reached the conclusion that the uncertain character of the financial climate during the Asian financial crisis was compatible with the high degree of inefficiency seen during that time. Hoque and Zaidi (2020) desired to offer pragmatic proof of the effectiveness of the Indian stock market considering the latest international economic crisis. Using unit root testing, he established that there was proof of the market's poor variety's ineffectiveness (a negative impact of the worldwide economic crisis on informational effectiveness). It has been proven that the effectiveness of information processing has little effect on economic downturns (economic market effectiveness is autonomous of the multiplicity of emergencies). Even though this inverse connection between stock market revenues and financial incorporation is only evident in emerging markets, it has been demonstrated that markets with greater degrees of financial integration with the rest of the world experienced steeper declines in stock values during the global financial crisis (Dinh *et al.*, 2019).

### **Multidimensional Variables**

Before starting the estimation of the larger model, first measurement must be done for the two important variables that has been talked about above.

### **Empirical extent of price delay**

Popularized by this metric, it examines how rapidly stock values change in response to news in the US market. Calculates how much of the dispersion in regional market revenues can be explained by the lagging performance of the US market. Hence, estimating the unrestricted market model is required to find the lag variable. In fact, the following price delay measure is computed using the R-squares of both constrained and unconstrained versions of market models: low), the US market's lagging returns have a larger impact on domestic market index volatility. Evidence that the domestic market is slow to react to widely disseminated news from the American market (high delay value). Hence, greater price delay values indicate lesser informational efficiency, and conversely, smaller price delay values indicate greater efficiency (Iqbal, Gan & Nadeem, 2020).

### **Empirical Integration Metric**

Indeed, the value of the integration metric is inversely related to the degree of economic incorporation between the local market and the US marketplace (the integration value is near zero). In a fully integrated market, integration has a value of zero, proving the viability of a single price (LOP). According to this rule, when stock markets are properly connected, there are no long-term arbitrage opportunities, and stock market returns are the same (Nakajima, 2019).

### **Control Variables**

The resources of the five control variables are:

Portfolio equity liabilities/market capitalization: Investibility is defined as the proportion of outstanding equity debt to the total market value of the company (Dinh *et al.*, 2019). One quantitative measure of how easily foreigners can participate in a stock market is the "degree of investibility" ratio. The value could be anything from 0 to 1. If this ratio is 0, foreign investors are barred from the market. Nonetheless, the market is completely open to outside buyers if the ratio described above equals 1 (Ahn, Cai & Cheung, 2020).

**Short selling:** Short selling is a dummy variable that stands in for an investor's actual and theoretical ability to short a security. If trading input options or other short sales is possible in both countries and vice versa, the value is equal to 1.

**Size:** The natural logarithm of the market capitalization of publicly traded businesses is often used to measure the extent of the financial market.

**Volume:** The turnover ratio and market capitalization of listed businesses are taken from the Global Development Indicators (WDI) (2012) of the World Bank and are employed as a "proxy" for the trading volume.

**Volatility:** There is a correlation between the volatility of the stock market and its informational efficiency, the strength of which depends on how extreme the volatility is. For this reason, it has been said that a market is "informationally efficient" when price disparities are small, and volatility stays within a reasonable bound. Its volatility is a reaction to new information that has the backing of the market. If volatility is high and price gaps are large, it raises doubts about the efficient market theory since it suggests that many trades are not grounded. Models from the GARCH family are used, more specifically the GARCH (1,1) model. These models are able to accurately represent many aspects of the volatility of stock returns, such as the clustering of volatility and the influence of leverage.

## **Discussion**

Before going into empirical study, aim should be kept to paint a broad picture of the three-dimensional and chronological variance of the two key variables, "Integration" and "Delay," that have been focused on.

In fact, the cross-sectional variance of informational effectiveness and financial integration will be portrayed. The latter illustrates how much more integrated most Western markets are compared to their African equivalents. Developed markets are becoming increasingly interdependent on the American financial market, as evidenced by this international benchmark. Another indicator, the stock price delay, displays the same pattern of behavior. According to statistics provided based on their research into individual financial markets, the average value of Integration and Delay changed between 2003 and 2012 for each of the 10 economic marketplaces examined for the research. Proving that established markets incorporate new information into stock prices more quickly and more effectively than emerging markets (Zaremba & Maydybura, 2019).

In light of the current global economic crisis, this essay looks at how market microstructure (financial resources, lack of predictability, etc.) and liberalization policies affect the effectiveness of information (Gelos *et al.*, 2022).

Several surprising findings emerge from the data. To begin, monetary integration isn't the only aspect that can enhance informational productivity. For the latter, factors like the stability of the financial system's infrastructure are essential ("liquidity", "size") (Gupta, 2021). Thus, financial market maturity is required for maximum benefit from financial deregulation. There is a positive and strong connection between the developed and African emerging markets, and the marketplaces that are more linked with the US market are also more effective. In addition, the connection between developed and African emerging markets is good and strong. As a result of the ongoing financial crisis, African stock markets seem to be more precarious than their established counterparts; hence, this connection loses its potential to explain the phenomenon (Liu, Choo & Lee, 2020).

## **Conclusion**

The results back up the importance of the possible benefits that could come from the process of financial integration for economies in Africa that are still growing. So, it is best for African countries to open up their investment markets so that foreign shareholders can take advantage of the benefits of more financial integration. Some of these benefits are that risk is shared, the stock market is less volatile, and liquidity, efficiency, and competition are all improved. In fact, an investor who directs some of their financial resources toward developing nations contributes to an increase in the total

amount of capital that is available for investment. This, in turn, boosts the level of output produced and encourages the expansion of the economy over the long term.

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### Conflict of Interests

The authors declare that they have no conflict of interests.

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