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Emerging Markets, American Depository Receipts and International Diversification

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Abstract

American Depository Receipts (ADRs) are financial instruments that facilitate the ownership of foreign securities without taking physical possession of such securities. These receipts indicate investors' claim on the underlying foreign securities. In addition to other benefits, several studies suggest that investments in emerging market ADRs provide superior benefits of international diversification as compared to European ADRs. Hence, ADRs from emerging markets in the "BRIC" countries (Brazil, Russia, India, and China) have caught the attention of international investors mainly because of the recent spectacular performance of their equity markets which have on many occasions, outperformed the U.S and European markets. In spite of the acknowledged benefits of ADRs, Sub-Saharan Africa (SSA) remains under-exploited in the utilization of ADRs even when the equity markets of countries such as Nigeria and Kenya have equally shown that they are capable of spectacular returns as observed recently. Consequently, SSA has not received a commensurate inflow of capital in the form of ADRs as witnessed in the "BRIC" and other emerging markets. This study therefore explores international portfolio diversification and highlights the precise potential of ADRs especially in emerging markets in SSA. With the spectacular growth rate of some of their economies, burgeoning middle class and democracies that have been deepened, SSA equities deserve a second and in-depth examination with respect to the potential of ADRs, not only for the returns for international investors, but also for the added benefit that the growth of the equity market creates positive externalities for the overall growth of the economy. By not utilizing ADRs in SSA, investors in U.S., Europe and other countries seeking to maximize the return on their portfolios may be inadvertently limiting the performance of these portfolios.

Keywords: American Depository Receipts, Portfolio Diversification, Emerging Markets.

1. Introduction

The subject of portfolio selection and diversification has received considerable attention in the finance and economics literature. The pioneering work of Markowitz (1952; 1959) and later, Tobin (1958) and Sharpe (1963; 1964) stressed the need for diversification of risky assets. However, these earlier studies did not delve into the basic principle that determines the effectiveness of diversification in reducing variance (risk) of portfolio returns. As Levy and Sarnat (1970) state, diversification mainly by adding more securities to a portfolio may not achieve the desired reduction in risk unless the portfolio holder considers how each of the securities contributes to the total risk of the portfolio. According to Sharpe (1963), the total risk of a portfolio may be divided into two parts: (1) Systematic risk which arises from how returns on individual securities are related to returns on the market; and (2) Unsystematic risk which arises from the unique characteristics of the individual securities.

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With proper diversification, all or most of the unsystematic risk can be eliminated whereas systematic risk is non-diversifiable. The ultimate goal of diversification is to reduce the risk involved in holding securities. A portfolio that consists of many different securities is less likely to be drastically impacted in the event that one company is in distress. However, just adding many securities to a portfolio does not guarantee that the benefits of diversification are achieved. Rather, the portfolio manager must consider how much risk a particular security adds to the portfolio and whether or not these risks are related. For instance, a portfolio of fifteen airline securities will produce far less benefits of diversification than the same portfolio from fifteen different industries (Solnik 1974).

Diversification obviously is not a costless process. First of all, the portfolio manager has to search out securities with negative correlation and zero covariance. This is not an easy task given that securities with negative correlations and zero covariances are hard to find. This implies that diversification cannot eliminate all risk, no matter how many securities there are in a portfolio. Secondly, there are transactions costs to be incurred in the process of diversification. It is therefore essential that the portfolio manager considers the marginal benefits associated with one more security added to the portfolio. Bierman (1978)confirmed that "marginal benefits fall off much faster than most practitioners realize."

Sharpe (1963) and Evans and Archer (1978) confirm that most of the benefits of diversification are realized by the time the 8th security is added to the portfolio. The results of these studies suggest that the relationship between the number of securities in a portfolio, and the reduction in risk, is relatively stable and predictable. As Evans and Archer state "…this relationship appears to take the form of a rapidly decreasing asymptotic function, with the asymptote approximating the level of systematic variation in the market." The study strongly recommends that practitioners and private investors must do some marginal analysis in their portfolio selection process. As Evans and Archer further state and Bierman (1978) concurs**,** beyond ten (10) securities, the costs of diversification may exceed the benefits.

In the search to maximize portfolio returns, investors in increasing numbers are looking beyond national boundaries for all manner of instruments. Lately, American Depository Receipts (ADRs) have come to serve as potential vehicles for international diversification for investors seeking broader portfolio advantages. These investors combine ADRs with domestic securities. ADRs are financial instruments that facilitate the ownership of foreign securities without taking physical possession of such securities. These receipts indicate the investors' claim on the underlying foreign securities. ADRs enable an investor to acquire foreign securities without the usual political, economic, and institutional risks and challenges associated with direct purchase of foreign securities. Such issues as obtaining stock certificates and collecting dividends in foreign currencies can be quite daunting by U.S. standards. These and similar issues are alleviated by depository financial institutions that act as intermediaries for holders of ADRs.While ADRs have become quite popular in the U.S., Europe, Latin America, Australia, Asia, and other regions of the world, emerging markets in Sub-Saharan Africa (SSA) seem to be totally neglected or perhaps oblivious to the benefits of this financial instrument. ADRs are explained in more detail in section IV.

The purpose of this study therefore is to explore international portfolio diversification and highlight the precise potential of ADRs in international portfolio diversification, especially in emerging markets. Beyond dividends and share appreciation of ADRs, investors may equally take advantage of arbitrage opportunities in emerging markets which are very likely because of information asymmetries, weak regulatory environment, inadequate infrastructure, transaction costs, investor sentiments,and fluctuations in exchange rates. First of all, the major world stock markets are not open at the same time, and since some countries, for instance Japan and Sweden set a limit on the foreign (outside) ownership of their securities, artificial shortage of ADRs may be created once the limits in these countries are reached (Rosenthal (1983). Secondly, there are some imperfections in the international capital markets. These two factors could lead to differences in prices of ADRs in different markets, thereby creating opportunities for professional arbitrageurs. Furthermore, Rosenthal concluded that the market for ADRs is weakly efficient.

Verma (2011) confirms that irrational sentiments of U.S. institutional investors which tend to be bullish initially are a source of ADR mispricing in Latin America (Mexico, Brazil, Chile and Columbia). Hence, ADRs can attract higher prices than the underlying shares thereby giving rise to arbitrage opportunities in spite of the logic of the Law of One Price. Similarly, Wahab and Lashgari (1992); Suh (2003);Aquino and Poshakwale (2006);Hsu and Wang (2008); and Alsayed and McGroarty (2012) find that ADRs are mispriced, thereby providing opportunity for arbitrage.

On the other hand, Maldonado and Saunders (1983); Kato, Linn and Schallheim (1991) and Park and Tavakkol (1994) conclude that ADRs are not mispriced, thereby validating the Law of One Price and leaving no room for arbitrage opportunities. Furthermore, Agmon (1972) confirmed that prices of capital assets in the international capital markets behave as if there is one multinational perfect capital market, thereby suggesting that arbitrage opportunities may be non-existent.

The remainder of the paper is organized as follows: The next section takes on domestic (U.S.) portfolio diversification while section III examines international portfolio diversification. The potential of American Depository Receipts in international diversification is discussed in section IV while section V concludes the paper.

II. Domestic (U.S.) Portfolio Diversification

As stated earlier, the ultimate goal of every investor in holding a diversified portfolio is to maximize expected return for a given level of risk, which is the same thing as minimizing risk for a given expected return. Several studies,for instance Lintner (1965); Bierman (1978); and Hickey et al. (2015)have examined the relationship between the riskiness of a portfolio and the number of securities for the U.S. market. Solnik (1974) took this a step further, by studying this same relationship in seven European markets ---- United Kingdom, Germany, France, Switzerland, Italy, Belgium and The Netherlands. Solnik's study used weekly price movements from 1966 to 1971. This study, as expected, confirmed the well-known result that as more securities are added to a portfolio, the risk of the portfolio declines asymptotically. However, the more interesting aspect of the results of this study is that the reduction in risk was not proportional in each of these countries. This demonstrates that foreign capital markets may differ significantly from each other. In the U.S. market, adding fifty securities to a portfolio of twenty securities reduces the total risk further by a modest three percent. Furthermore, as Solnik notes, in the U.S. market, 27% of the risk is non-diversifiable whereas in Germany, non-diversifiable risk amounts to 44%.

Every economy experiences periods of recessions and booms. Generally, security returns tend to follow this trend. While one country's economy might be in distress, another country's economy might be experiencing a high level of economic activity. This suggests that diversifying portfolios internationally may offer some advantages (Levy and Sarnat 1970).

III. International Diversification

Grubel (1968) was the first study to explicitly apply the models of portfolio balance to include foreign assets. Using ex post realized rates of return from investment in eleven major stock markets, he found that diversifying portfolios internationally results in welfare gains from international economic relations totally "different from both the traditional gains from trade and increased productivity flowing from the migration of the factors of production." Grubel's model equally showed that the movement of capital between countries does not only depend on interest differentials but also on the rates of growth in total asset holdings in two countries. Consequently, capital movements may occur between countries even when interest rate differentials are zero or negative. Accordingly, capital movement may not occur between countries even when interest rate differentials are positive.

The aim of any diversification activity (international or domestic) is to reduce the risk of the portfolio. Solnik (1974) confirmed that stock price movements in different countries are independent. This makes the case for international diversification very appealing. The question then becomes one of ascertaining the effectiveness of international diversification in reducing portfolio risk. Solnik's study indicated that in "terms of variability of return, an internationally well-diversified portfolio would be one-tenth as risky as a typical security and half as risky as a well-diversified portfolio of U.S. stock." As Solnik further points out, investors in other countries such as Germany or Switzerland would even benefit more from international diversification than U.S. investors since these countries have higher percentage of non-diversifiable risk than the U.S.

The U.S. market offers more opportunities for diversification because it is very large and most companies offer common stock. In the European countries, private ownership of very large firms is still prevalent. In the U.S. market, increasing the size of a portfolio beyond 20 stocks may result in only very modest reduction in risk, whereas for an international portfolio, the reduction in risk can be quite substantial (Solnik 1974). Grubel (1968) also showed that U.S. investors can benefit substantially from international diversification of their portfolios.

He examined the stock market returns of eleven major countries[1] from January 1959 to December 1966 and calculated the correlations with the U.S. market. The correlations reveal that apart from Canada which has a correlation of 0.7025 with the U.S., all the other stock market returns showed correlations of between -0.162 to 0.3008. This is a necessary condition for achieving the maximum benefits of diversification.To further demonstrate the potential gains of international diversification, Levy and Sarnat (1970) examined the stock market returns of 26 countries from 1951 to 1967. As this study confirms, the variations in rates of return and standard deviation show that substantial reductions in portfolio risk can be achieved via international diversification.

International diversification is not without risks arising from political, institutional, cultural, and economic factors and unpredictable movements in exchange rates. As Officer and Hoffmeister (1987) state, such issues as "transfer of stock certificates or the collection of dividends in foreign currencies can be difficult." Moreover, the transaction costs of buying foreign securities can be quite substantial. All these factors mitigate the attractiveness of international diversification. To alleviate some of these risks of international diversification, investors are enlisting a new financial instrument --- ADRs. (Officer and Hoffmeister (1987). Other studies such as Choi and Kim (2000); Schaub (2010; 2011) and Peterburgsky and Yang (2013)**;** have touted the effectiveness of ADRs in international portfolio diversification. On the other hand, Aquino et. al. (2005) find that ADRs do not provide any particular portfolio diversification benefits above and beyond the underlying shares in terms of mean-variance efficiency.

IV. American Depository Receipts (ADRs)

ADRs are financial instruments that facilitate the ownership of foreign securities without taking physical possession of such securities. These receipts indicate investors' claim on the underlying foreign securities. ADRs are usually issued by the U.S. banks called depositories. As Merjos (1984) states "the receipts are contracts between the bank and the holder certifying that a specific number of foreign shares has been deposited with the bank's overseas branch or custodian, and will be held on deposit as long as the ADRs remain outstanding." These banks or depositories actually take physical possession of foreign securities through their foreign branches or custodians, and then issue receipts on these securities. The banks perform several duties for ADR holders which small investors in foreign securities would find difficult or impossible to do on their own. These duties include, receiving dividends on these securities, paying any foreign withholding taxes, converting the proceeds into dollars, and passing the dividends onto the receipt holders.

Investors can trade in ADRs just like domestic securities, since these receipts are listed on the national stock exchanges or the over-the-counter market. Upon request, ADRs are easily converted into the underlying shares, and investors who own foreign securities can also exchange them for ADRs. Usually the depository bank charges a fee for its services (Officer and Hoffmeister 1987).

Origin of ADRs

The guaranty Trust Company of New York introduced ADRs in 1927. This company later merged with J.P. Morgan in 1959 to form the Morgan Guaranty Trust. ADRs did not become popular until recently, as more U.S. investors search for more convenient ways to jump on the international band wagon. Investors are discovering the opportunities in foreign markets as many of these markets have outperformed the U.S. market in recent times (Merjos 1984**).**

ADRs are classified into two - sponsored and unsponsored. With sponsored ADRs, the foreign companies appoint a bank to be an intermediary between the company and the ADR holders. The ADRs in this case are fully registered with the SEC, and can trade on the New York Stock Exchange (NYSE) and the American Stock Exchange (ASE). Unsponsored ADRs on the other hand, are created at the request of U.S. brokerage firms without the active involvement of the foreign companies. These are not registered with the SEC, and they trade in over-the-counter market. In the case of sponsored ADRs, the banks' fees are paid by the foreign company, whereas in unsponsored ADRs, the banks' fees are paid by the investor (Officer and Hoffmeister 1987; Bank of New York 2015)

The growth in the number of ADRs has been quite remarkable. By 1961, there were only 150 ADRs available for investors. By 1976, this number had more than doubled to 390, and by 1984, the number of ADRs was 550. As of 1987 there were 525 unsponsored ADRs and only 25 sponsored ADRs. By 1990, there were more than 800 companies from over 30 countries being traded on U.S. exchanges as ADRs.

As of 2015, the Bank of New York Mellon, which is a major source of data for ADRs, reports that there are over 3,600 ADRs trading on the organized exchanges - New York Stock Exchange (NYSE), American Stock Exchange (AMEX), the NASDAQ system – and other private trading networks. The total capitalization of these ADRs is over $7 trillion. Usually, one ADR represents one share of stock, but depending on the strength of the U.S. dollar in relation to the foreign currency, one ADR may represent a fraction of a stock or multiple shares of stock. The Bank of New York acts as depository for more than 1,300 sponsored ADRs from 68 countries, representing 60% of the global market (Merjos 1978; 1984; Bank of New York 2015).

Despite the advantages of ADRs over other vehicles of international diversification, ADRs like all other financial assets have its disadvantages or risks. Several risks that apply to other forms of international investing also surface with ADRs. These risks include; (1) Greater volatility in foreign markets than in the U.S. market. Even when the U.S. market seems very erratic at times, it is still well-tamed compared to the wild swings in many foreign markets. (2) ADRs are still subject to fluctuations in the foreign exchange market. A sudden jump in the dollar could spell disaster for investors. (3) There are also tax complications to worry about. Some foreign countries withhold part of the dividend payments on ADRs, and the U.S. investors have to file very complex forms to get back their money, and (4) Investors need to monitor developments in foreign countries, so as to balance their portfolios as necessary (Herman and Sesit 1990).

Officer and Hoffmeister (1987) examined the investment characteristics of ADRs as an alternative to direct investment in foreign equities. Specifically, they wanted to ascertain if any significant portfolio advantages can be realized by including ADRs in a portfolio with U.S. securities. The sample of ADRs used for this study consisted of 20 securities taken from the NYSE and ASE and 25 securities from the OTC market. The period of study was from 1973 to 1983, and floating exchange rates were in place. For the same period, 1973 to 1983, a portfolio of 45 randomly selected domestic (U.S.) stocks from NYSE and ASE was selected. This is to enable a comparison of the ADR portfolio performance to the performance of the domestic portfolio. The monthly rates of return were calculated for all domestic stocks and ADRs. The study evaluated the systematic risk of ADRs, and the diversification that an investor can achieve from pure domestic portfolios versus pure ADR portfolios. As the study reveals, the betas (Bp) of the ADR portfolio are very low compared to the domestic stocks. Therefore, a significant reduction in standard deviation would be achieved if ADRs and domestic stocks are combined in one portfolio.

In summary, it appears that a diversified portfolio of both ADRs and domestic stocks is superior to either a portfolio of ADRs or domestic stocks alone. The three portfolios (domestic stocks, ADRs, ADR-domestic) constructed in Officer's and Hoffmeister's (1987) study had similar annual rates of return of 13.08%. However, the ADR-Domestic portfolio is superior in the sense that for the same annual rate of return, it had lower levels of risk.

V. American Depository Receipts and Emerging Markets in Sub-Saharan Africa

ADRs from emerging markets in the "BRIC" countries (Brazil, Russia, India, and China) have caught the attention of the international community mainly because of the recent spectacular performance of their equity markets which have on many occasions, outperformed the U.S and European markets. Studies such as Schaub (2004; 2009); and Schaub and Highfield (2006); Elliott and Schaub (2009) suggest that investments in emerging market ADRs provide superior benefits of international diversification as compared to European ADRs. Surprisingly, emerging markets in Sub-Saharan Africa(SSA) have been practically left out of the international portfolio diversification benefits of ADRs even when the equity markets of these countries such as Nigeria and Kenya have equally shown that they are capable of spectacular returns as observed recently. Given the reasons outlined earlier for the rapid embrace of ADRs, it seems illogical that the ADR market in SSA is yet untapped. Consequently, firms from SSA have not benefited from this source of capital from the U.S. capital markets to the extent that other emerging markets have.

The fact that ADRs provide all the benefits of owning shares of stock without the impediments of actually taking physical possession of foreign stocks makes it an instrument tailored to overcome the disproportionate institutional inefficiencies inherent in dealing with emerging markets especially in SSA. As Arugaslan and Samant (2012)**(**the first known study to examine ADRs from Africa and the Middle East) state, the equity market in SSA is quite large and provides immense opportunities for portfolio diversification.

By 2012, there were only 75 ADRs outstanding in SSA, of which 74 are from South Africa and one from Zambia. As of 2015, there are 122 ADRs issued from SSA and South Africa alone accounts for 90, leaving the rest of SSA with only 32 which is less than 1% of outstanding ADRs worldwide[2]. Why are emerging markets such as Nigeria, Kenya, and Ghana ignored when Choi and Kim (2000) confirm that emerging market ADRs provide U.S. investors with more effective international diversification than ADRs from developed markets? In his study of twelve Latin American and Asian emerging markets, Karolyi (2004) confirms that the growth of ADRs from these markets have enhanced the growth of their emerging equity markets. Since stock market development is generally seen as a catalyst for overall economic development by the efficiencies it induces in the economy, it therefore follows that an embrace of ADRs from SSA will equally facilitate more rapid economic growth than foreign aid and other such non-market interventions. Karolyi's study corroborates the findings of earlier studies such as King and Levin (1993); Wurgler (2000); and Rajan and Zingales (2003) that confirm that the development of the financial sector impacts positively on overall economic growth.

While the embrace of ADRs from emerging "BRIC" countries is warranted, the almost total neglect of SSA is unwarranted. Take for instance a country in SSA such as Nigeria. Nigeria is the largest economy in SSA with a 2014 current GDP of $568.5 billion and a population of about 180 million people. The country is rich in mineral resources including oil and vast quantities of untapped solid minerals such as gold. Recently, the economy has been recognized as one of the fastest growing economies in the world; at over 6% per year real GDP growth rate (World Bank 2015). Except for a few ADRs in the banking sector, other industries have been practically ignored. With the spectacular growth rate of the economy, a burgeoning middle class, and a democracy that has been deepened, Nigerian equities deserve a second and in depth examination with respect to the potential of ADRs, not only for the returns for international investors, but also for the added benefit that the growth of the equity market spills over positively to the overall growth of the economy.

VI. Conclusion

The typical U.S. investor is confronted with a few complications in an attempt to diversifying internationally. It is often very expensive to deal with these complications, some of which include currency exchange transaction problems; difficulty in collecting dividends; marketability – difficulty in transfer of stock certificates; institutional, political, and economic factors; and heavy transaction costs. By utilizing ADRs, U.S. investors can eliminate some, if not all of these problems. With ADRs, the problems of currency exchange transaction, difficulty in collecting dividends, and marketability are eliminated. Officer and Hoffmeister (1987) show that investors need only as few as four ADRs in combination with four domestic securities to reduce their risk exposure by 20% to 25%. In contrast, most other studies of international diversification assume that investors need large portfolios of securities in each country. Of course, large portfolios imply large transaction costs. The practical advantages of ADRs over other forms of international diversification implies that ADRs can provide a realistic and useful alternative for U.S. investors as they eliminate many of the problems that arise with direct investment in foreign securities, and at the same time provide the major benefits of international diversification.

In spite of the acknowledged benefits of ADRs for potential investors and overall impact on the development of the equity markets which impact positively on overall economic development, emerging markets in SSA have been neglected in the utilization of ADRs as financial instruments that enhance international portfolio diversification. Many economies and equity markets in SSA such as Nigeria and Kenya are experiencing spectacular growth, but this has not translated to commensurate inflow of capital in the form of ADRs as witnessed in the "BRIC" and other emerging markets. By not exploring the opportunities in SSA, investors in U.S., Europe and other countries seeking to maximize the return on their portfolios may be inadvertently limiting the performance of their portfolios.

One major limitation in studying emerging markets in SSA is the availability of relevant data. With the availability of relevant data, future studies can test if ADRs in SSA are mispriced, thereby creating room for arbitrage opportunities. Secondly, future studies may explore the issue of whether or not ADRs in SSA can provide superior international portfolio diversification benefits relative to other emerging markets.

Notes

1. Eleven major countries are USA, Canada, UK, West Germany, France, Italy, Belgium, The Netherlands, Japan, Australia, and South Africa
2. Data come from the Bank of New York Mellon (www.adrbnymellon.com)

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