Determinants of Cross-Border Mergers and Acquisitions Targeting Africa: 1991-2011

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ERSA working paper 600

April 2016

DETERMINANTS OF CROSS-BORDER MERGERS AND ACQUISITIONS TARGETING AFRICA: 1991-2011.

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April, 2016

Abstract

The fast output growth that a number of countries in Sub-Saharan Africa have achieved in the last decade has led to significant inflow of FDI into the continent. A number of studies have examined the trend of such FDI inflows generally but only a few have focused on these flows that are mainly mergers and acquisitions (M&A). Using a dynamic panel data model, this paper examines the determinants of FDI that targeted Africa between 1990 and 2011, a period when the continent exhibited high and sustained economic growth. The paper finds that the trend of M&A in Africa is similar to that of the other developing regions suggesting that the underlying factors driving M&A globally also apply to Africa. However, M&A activity in Africa respond with a lag, showing the role of inertia in driving M&A activity. In particular, we find that M&A targeting Africa responds positively and significantly to international stock markets (S&P) and international bond yields (G7). Internal factors which are location specific are also important determinants. Not surprisingly, given the continent's endowment in natural resources such as oil and rare metals, and the high demand for such commodities in this period, our results further indicate that natural resources are a positive driver of M&A targeting Africa.

Keywords: Africa, Mergers and Acquisitions, Foreign Direct Investment
JEL Classification: F23; C23; G15

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1 INTRODUCTION

Although Africa has enjoyed sustained economic growth, averaging 5 per cent annually, during the past decade (AfDB, 2012) the growth has been largely uneven. While sub-Saharan Africa growth momentum is expected to keep hovering around 5.5 per cent in 2012 in spite of the slowdown in OECD countries (AfDB, 2012) most of North Africa's economic performance has been adversely affected by the 2011 revolutions. Expectations are that a number of African countries (for example Angola, Uganda, Ethiopia) will be among the top 10 fastest growing economies in the world. The drivers of Africa's economic growth are both external and internal.

On the internal side, the reforms that African governments have implemented since the late 1980s have produced a business-friendly environment. Over the past two decades, four African countries (Mauritius, South Africa, Rwanda and Tunisia) have migrated to the top quartile of the Doing Business ranking, and four countries (Morocco, Cape Verde, Burundi and Sierra Leone) have been classified as the best reformers (WorldBank, 2012). On the external side, the booming growth in Asia during the last decade fueled the demand for natural resources, of which many African countries are well endowed, leading to both higher volumes and better prices for these products[1]

One consequence of this fast and significant economic growth during the last decade is an increased engagement by international private sector players, including those from emerging countries, with Africa. This increased engagement is reflected in the higher level of Foreign Direct Investment (FDI) including Merger and Acquisition (M&A) activities. Between 2003 and 2008, the value of M&A targeting Africa increased sevenfold. The number of M&A transactions also doubled. Over the last three decades, of the 10,856 M&A announced deals involving African targets 6,746 were completed (Authors' analysis, 2012).

The rapid increase in M&A activity in Africa raises important questions. What is the sectoral and geographic distribution of these flows? Which external or internal factors are driving such M&A activities. Of particular interest is the role, if any, that the quality of institutions in African countries is playing. Answers to these questions will help shape country-level policies and strategies that need to be put in place to further encourage M&A activity in Africa.

Very little research has focussed on determinants of FDI in Africa. Asiedu (2002) and Asiedu (2006) makes an important contribution to this literature by specifically advising

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[1]However, since 2011 commodity prices have significantly dropped as a result of China's shift from investment to consumption based economy, which has implications for commodity-based countries in Africa.

for the need to separate the analysis of FDI inflows to Africa from similar flows to other regions. Her findings show that countries endowed with natural resources or large markets attract more FDI but institutional factors such as corruption, political stability, infrastructure, human capital, legal system and macroeconomic stability also play a role. Ezeoha and Cattaneo (2012) argue that financial development has not got specific attention in previous studies of FDI in Africa. They find that financial development, the size of market, infrastructural development and urban agglomeration play an important role in attracting FDI to sub-Saharan Africa(SSA). Onyeiwu and Shrestha (2004) consider various macroeconomic determinants of FDI in Africa. They find that economic growth, inflation, openness and natural resources play a significant role in encouraging FDI in Africa.

So far, the only study that has examined cross-border M&A in Africa is by Agbloyor (2011). This study is focussed on the role of financial markets in driving M&A in Africa. It finds that banking sector development promotes M&A activity but stock market development does not have a significant impact on M&A. However, the sample size used in this study is quite limited given that only 14 African countries with stock markets are sampled, thus excluding the majority of African countries. Even though the study examines the role of financial markets, it mostly concentrates on domestic markets while neglecting external financial markets affecting M&A activity in Africa.

This paper differs from previous studies by only focussing on FDI inflows to Africa that are M&A. It differs from Agbloyor (2011) by including a much broader sample of African countries. Our study takes into consideration the role of international financial markets in promoting M&A activity in Africa. Furthermore, given the importance of natural resources driving Africa's growth, we introduce natural resources variable in the M&A literature. In addition, we incorporate the role of time (inertia) as determinant of M&A activity in Africa which results in estimation of a dynamic panel data model. The M&A database used in our study is different from Agbloyor (2011) and is the most comprehensive database for M&A activity.

The paper is organised as follows: Section 2 provides literature review on M&A and hypothesis to be tested while Section 3 details descriptive statistics of the number and value of M&A in developing countries and Africa. In Section 4 we specify the model and discuss the estimation procedure used. Section 5 presents the empirical results and analysis, and lastly Section 6 concludes the paper.

2   LITERATURE ON MERGERS AND ACQUISITIONS

Empirical literature on cross border M&A is concentrated on developed countries (for example Froot and Stein (1992) and Blonigen (1997). Furthermore, most of the studies concentrate on domestic causes and consequences. Giovanni (2002) observes that "practically no work has been done" to examine M&A flows at international level. He reports only two studies with such work, one by Pryor (n.d.) and Vasconcellos and Kish (1998) wherein the latter examines Europe-US flows. Giovanni (2002) uses data for both developed and developing countries between 1990 and 1999 and finds that financial and institutional factors are important drivers of M&A flows. His main result emphasizes on financial market deepening in acquisition countries as the main determinant of M&A activity. He finds that the size of financial markets and the credit provided to the private sector encourage domestic firms to invest abroad.

A seminal paper on M&A activity in emerging markets of Aguiar and Gopinath (2005) employ firm level data to investigate the behaviour of M&A in East Asia during the 1997-98 crisis. In the paper, it is noted that M&A activity increased during the financial crisis period as domestic firms faced serious liquidity constraints. The paper finds that liquidity played a significant role in explaining the dramatic increase in foreign acquisitions and inflow of FDI during the Asian crisis. Whereas foreign acquisitions increased substantially, domestic acquisitions of local firms dropped. The paper concludes that during crises, foreign acquisitions of domestic firms' increase since foreign firms do not experience the same liquidity problems. Furthermore, the value of domestic firms' assets drops making it even easier for foreign firms to acquire them.

In a subsequent paper which uses the same database as Giovanni (2002) and Aguiar and Gopinath (2005), Kamaly (2007) covers the same period as Giovanni (2002) but examines a different set of financial and macroeconomic determinants from Giovanni (2002). His results show that M&A activity in the 60 developing countries respond positively to Standard and Poor's Index and negatively to G7 bond yields, with the former capturing the effect of international stock markets and the latter international interest rates. He also finds that M&A activity responds with a moderate lag (inertia) and that openness and depreciation of exchange rate have significant and positive relationship to M&A. However, and surprisingly the paper finds that stock market variables in developing countries have a significant negative effect.

The only study that has dealt with cross-border M&A activity in Africa was conducted by Agbloyor (2011). However, the study mainly deals with the two way relationship

between financial markets and M&A activity in Africa. A further shortcoming of their study is that, they considered only 14 African countries with stock markets, thus excluding the majority of African countries. Even though the authors examine the role of financial markets, they concentrate on domestic markets and neglect external factors affecting M&A activity. Furthermore, they also fail to take into account a very important feature of Africa, that is, its natural resource endowment. In the earlier context, this research notes that Africa's growth is partly driven by commodity booms. Hence, our study included a variable that captures this special feature of Africa in the analysis.

This paper also attempts to examine location – specific determinants of M&A activity, such as macroeconomic and institutional factors that affect M&A activity in Africa using Thomson Financial as used by Giovanni (2002), Aguiar and Gopinath (2005) and Kamaly (2007). Thomson Financial is the most comprehensive database on M&A activity. Unlike the United Nations Conference on Trade and Development (UNCTAD) data which is aggregated, Thomson Financial has data on each M&A activity at company level. According to Kamaly (2007) international studies of M&A activity were previously hampered by lack of data. Agbloyor (2011) use data on M&A from the Australian/New Zealand Database on Special Mergers Sectors.

2.1 SELECTION OF EXPLANATORY VARIABLES AND HYPOTHESES

We select explanatory variables based on theoretical literature on important macroeconomic, financial and institutional factors that influence M&A activity.

Dependent variable: Some previous studies have used the number of M&A as the dependent variable because the data is much more complete. However, a considerable part of information is lost if only the number of M&A activity is used. A few more recent studies have used the value of M&A activity. We similarly use the value of M&A activity as the dependent variable because values provide information on flows of capital into a country.

Hypothesis 1: A positive relationship is expected between value of M&A and its lag.

A few studies have shown total FDI flows to respond with a lag for instance Kamaly (2007). The lagged dependent variable captures persistence in M&A activity. This inertia is due to the time it takes to set up operations in a target country. However, the Greenfield component of FDI could have longer lags than M&A because the former involves setting up new operations in a host country whereas the latter is about taking over existing operations.

Hypothesis 2: High stock prices encourage M&A activity.

The expectations hypothesis postulates that high expectations about the future, which is indicated by economic growth and stock prices, encourage M&A activity (Nelson, 1959). High stock prices reduce the cost of capital and increase the value of potential acquiring firms, increasing the likelihood of M&A activity (Kamaly, 2007). Furthermore, bouyant stock markets signal economic boom, which creates production capacity, and a desire for firms to acquire others. Hence, booming international stock markets make it easier for multinational firms to source funds, and expand productive capacities through foreign investment in developing countries.

Hypothesis 3: The relationship between bond yields in developed countries and investment in developing countries is ambiguous.

Bond yields represent the cost of capital, that is interest rates, on one hand and the level of risk on the other. Economic theory suggests a negative relationship between interest rates and the level of domestic investment. However, high bond yields in a country indicate a high level of risk, which implies diversion of investment from that country into other assets. High bond yields in developed economies, for instance, due to the current sovereign debt crisis in Europe, signal a high level of risk which have the potential to shift investors to high growth and high return regions of the developing world such as Africa. Since bond yields are expected to generate both negative and positive effects, the net effect will depend on the strength of either of the effects.

Hypothesis 4: A negative relationship is expected between inflation and M&A activity and a positive relationship with exchange rates.

Inflation is a macroeconomic barometer of market risk and high levels signify a negative economic outlook. As such, a negative relationship with M&A activity is expected as high levels of inflation discourage foreign investors. Inflation in the host economy affects the cost of capital and hence the profitability of FDI De Mello Jr (1997). Both domestic and foreign investors would be discouraged from investing in an uncertain environment with regard to profitability of their businesses.

Exchange rates also matter because devaluations or depreciations of host or target country currency have implications for investors, in terms of returns from existing investment and purchase of new investment. Overall, the positive relationship is expected to -outweigh the negative effect, and thus depreciation of target country currency which indicates assets are relatively cheaper would boost foreign investment.

Hypothesis 5: Financial development and financial account openness have a positive impact on M&A activity.

The role of domestic financial markets, banking sector and stock market, has been recog-

nised in the literature for facilitating both domestic and foreign M&A in target countries. When financial markets are more developed, it becomes easier and cheaper for firms to access funds necessary for expansion. On the other hand, underdeveloped financial markets constrain the scale of multinational activity and make firms rely more on parent companies for capital (Antras et al., 2007).

Hypothesis 6: Good institutions and natural resources abundance positively affect M&A.

Corruption undermines investors' confidence in the economic system and is expected to be negatively related to cross-border M&A. Habib and Zurawicki (2002) and Al-Sadig (2009) argue that corruption discourages foreign investment because it is considered illegal and also leads to operational inefficiencies.

Natural resources are an important consideration for resource-seeking FDI. Many African countries are richly endowed with natural resources hence would attract more FDI.

Data on inflation and natural resources is obtained from World Development Indicators (WDI), that of corruption is from Centre for International Development and Conflict Management, Standard and Poor's price index and G7 bond yields is from Quantec database, financial openness from (Chinn and Ito, 2008) exchange rates from the International Monetary Fund(IMF) and financial development from the World Bank, as shown in Table 3 in the Appendix. Summary statistics of all variables are shown in Table 4 in the Appendix.

3   DESCRIPTIVE STATISTICS

We use Thomson Financial database on Mergers and Acquisitions which cover deal issues such as announced and effective date of acquisition, details of target and acquirer company such as the name, country and region, primary SIC code, macro industry, as well as deal information such as the value and other balance sheet information. We use deals declared in the status of the dataset as completed deals. These completed deals have both announced and effective date of acquisition. In all the descriptive and regression analysis below, the acquirer nation does not belong to the region, for instance, Asia deals exclude Asian acquirers, and so the acquirer in the region is non-Asian.

We identify four main phases in the trends of M&A in developing countries as shown in Figure 1. Phase one covers most of the 1990s up to 1996. This phase is characterised by a steady upward trend for the three regions. It is followed by phase is attributed to the Asian liquidity crisis and covers the period 1997-2001.This second phase ends in 2001 with a sharp decline in M&A for all the three regions. Evenett (2004) observes that worldwide
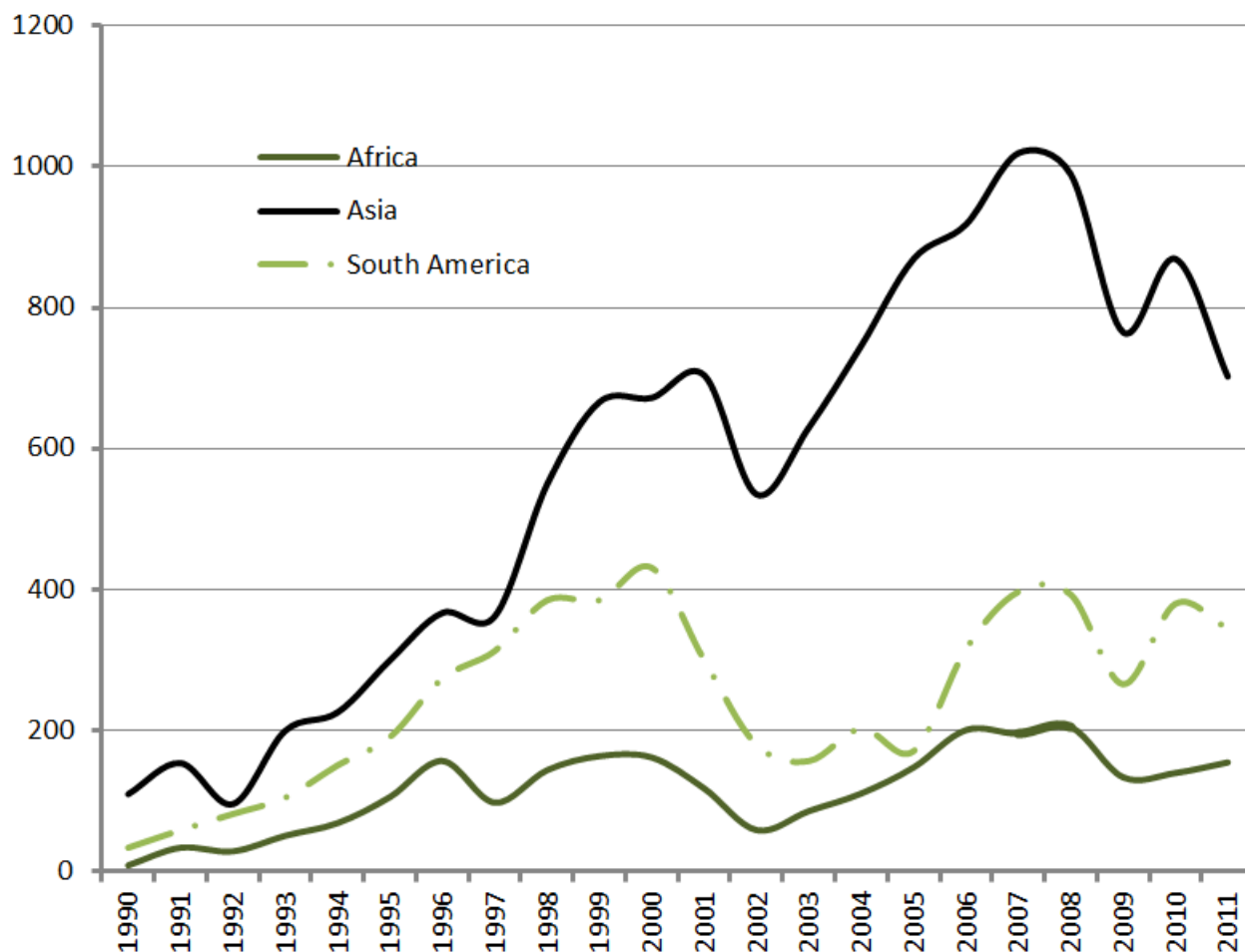
Figure 1: Mergers and Acquisitions Targeting Developing Countries Number of Completed Deals 1990-2011. Compiled using Thomson Financial

M&A declined by 40 per cent in 2002. Hence the slump is not unique to the three developing country regions. Phase three begins in 2002 reaching a peak in 2007 and exhibits a steady increase in deals. The fourth phase shows a sharp decline attributed to the 2008/09 global economic and financial crisis.

A casual look at M&A trends in Figure 1 indicates that there are more similarities in the trends for the two regions of Asia and South America than for Africa. However, correlation analysis indicates that M&A in Africa are highly correlated with both Asia and South America with a correlation coefficient of 0.85 and 0.87 respectively. Comparatively, the correlation for Asia and South America is much less at 0.72. All the correlations are highly statistically significant suggesting similarity of global factors that drive the overall trends in M&A.

We now focus on African countries with the acquirer nation exclusively non-African. The number of deals for all the countries in each year was aggregated to obtain Figure 2.
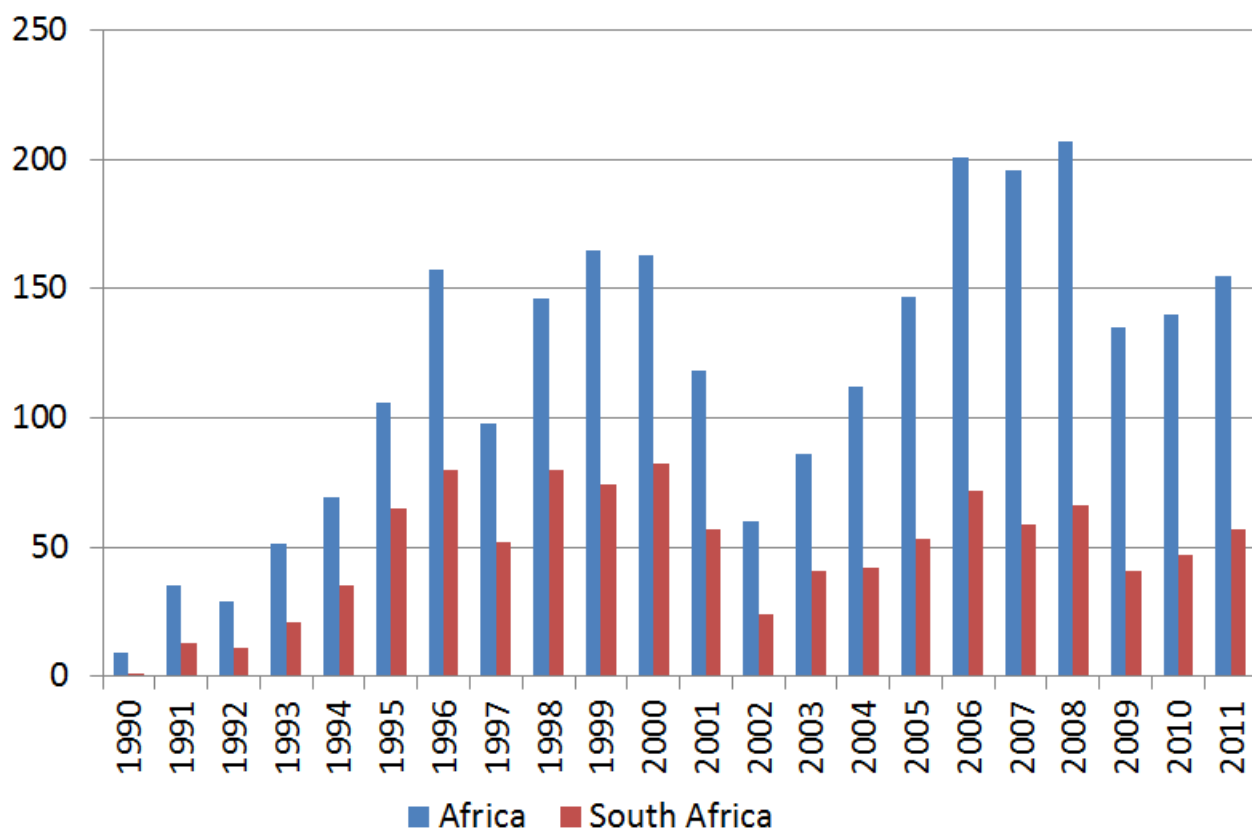
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Figure 2: Mergers and Acquisitions Targeting Africa and South Africa Number of Completed Deals 1990-2011. Compiled using Thomson Financial

Figure 2 shows that M&A in Africa came in two waves, the 1990s and the 2000s. There is a steady upward trend from early 1990s especially after 1994. This could partly be explained by the fact that almost a third of M&A in Africa take place in South Africa. The attainment of democratic rule in South Africa enormously boosted investor confidence as indicated by increased M&A activity. There is a slump in number of M&A in 1997, which could be explained by the Asian crisis. In the 1990s decade, the number of deals peaked at 165 deals in 1999, and then began to drop reaching a trough of only 60 deals in 2002. The 2000s wave was much stronger starting at only 60 deals in 2002 and rising to a peak of 207 deals in 2008, which is triple the 2002 number. The apparent sharp decline in 2009 can be observed which is attributed to the 2008/09 global economic and financial crisis. The 2010/11 heralded the beginning of another wave, though sovereign debt crisis in Europe may have disrupted the momentum.

The value of transactions was also summed up for all countries for each year to obtain Figure 3. It should be noted that many deals do not report the value and hence the total value is under-reported. We recognize that this is one shortcoming of the database.

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However, we expect any under-reporting to be consistent throughout the sample period and therefore not to bias the findings.
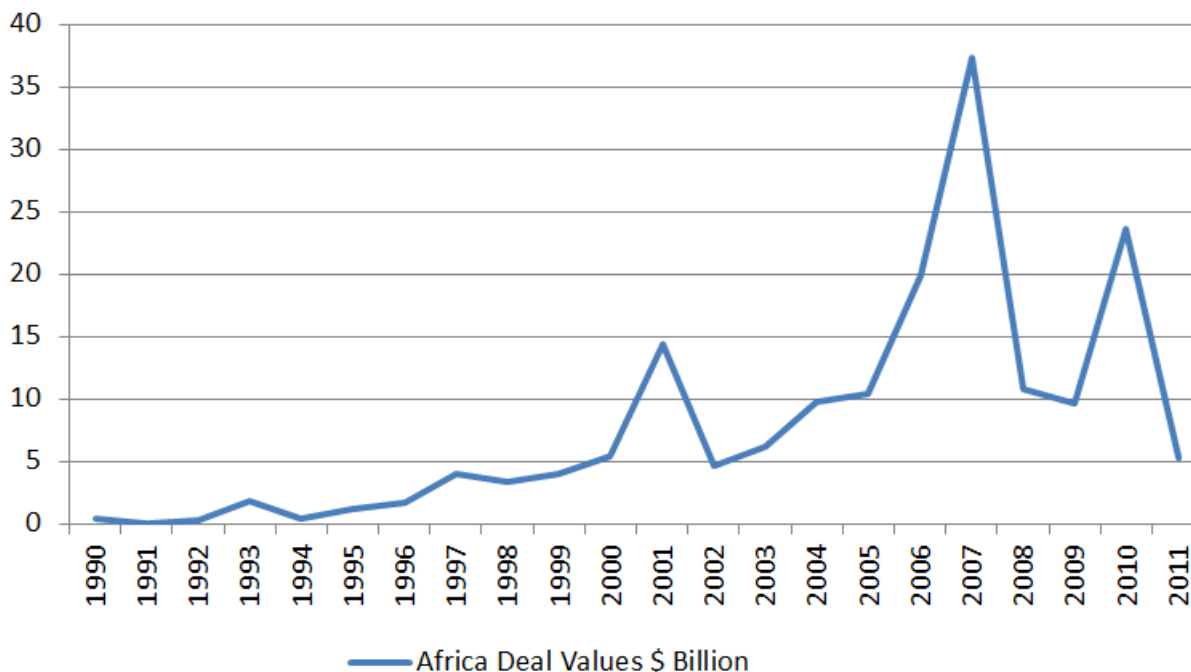

Figure 3: Mergers and Acquisitions Targeting Africa: Value of Completed Deals (in $ Billion) 1990-2011. Compiled using Thomson Financial

There is a steady upward trend in the total values over time, with a few spikes in 2001, 2007 and 2010. The peaks are due to mega deals during the years. See Table 10 in the appendix for a summary of mega deals in Africa for 1991-2011. Very low deal values are reported in early 1990s, except a small rise in 1993. There is exponential growth in the value of reported M&A deals from mid-1990s reaching a peak in 2001. This rapid growth in value of deals can partly be attributed to investor confidence after South Africa attained democratic rule and liberalization of her trade policy. After a sharp global decline in FDI in 2002, there is strong growth in M&A deal values from different sectors especially the natural resources sector. The year 2006 had many transactions in terms of number of deals but of relatively small amounts. Deal value peak in 2007, even though only 90 deals with reported values took place. The spike in deals could be attributed to a number of mega deals in the materials, financial and retail sectors. During the 2008/09 global economic and financial crisis, deal values decline sharply. This decrease is also reported in total FDI which dropped by 14 per cent, ending eight years of uninterrupted growth in FDI (UNCTAD, 2012). The decrease in overall FDI is associated with fall in demand for commodities and cancellation of some cross-border deals. There is some recovery in 2010 but this is disrupted

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by the onset of sovereign debt crisis in Europe.

Table 1: Top ten most attractive countries in terms of number of completed deals

Country	Number of Deals	Value in $ million
South Africa	988	66,087.54
Egypt	224	37,367.63
Moroccco	125	9,628.87
Tunisia	75	3,752.25
Mauritius	64	2,502.8
Nigeria	60	5,833.29
Ghana	52	1,305.07
Tanzania	44	608.22
Algeria	42	1,290.82

Compiled using Thomson Financial

South Africa attracts by far the highest number and value of deals in Africa, with 988 reported deals by non- African acquirers at a value of $66, 087million. This is followed by three North African countries – Egypt, Morocco and Tunisia. Mauritius, which is another Southern Africa country, takes the fifth position, followed by two West African countries- Nigeria and Ghana. Tanzania is the only East African country to feature among the top ten, and the tenth position is taken by yet another North African country. All the countries in the top ten have active stock markets. The list of African countries with M&A data are in Table 9 in Appendix.

To summarise this section, a substantial number of M&A deals took place in Africa in different sectors. Deal number and values are low in early 1990s but a steady upward increase is observed from mid- to late 1990s. Most M&A activity in Africa in terms of deal values, took place in the last decade of 2001-2010. South Africa is the most attractive country in both number and value of deals for the period 1990-2011. A number of mega deals are reported especially in natural resources and services sectors.

4 MODEL SPECIFICATION

A dynamic panel data specification is used for analysis. The model is specified as follows:

$$Y_{it} = \alpha + \mu_i + \delta Y_{it-1} + X_{it}\beta + u_{it} \tag{1}$$

$$u_{it} \sim ii(0, \sigma_u^2) \quad i = 1, 2, ...N; \quad t = 1990, ...2009$$

where

Y_{it} is the value of M&A activity for country i and year t as response variable

X_{it} is the matrix of explanatory variables other than the lagged dependent variable

N is the total number of observations

α, δ and β are unknown parameters

u_{it} is the error term, which captures all other variables affecting Y_{it}

4.1 ESTIMATION PROCEDURE

We apply different estimation methods, ranging from pooled Ordinary Least Squares (OLS) to system Generalised Method of Moments (GMM). We start with estimation of the simplest method - pooled OLS, which assumes that all units (countries) have the same characteristics. We test for this hypothesis, that African countries have similar characteristics, hence country specific effects (μ_i) are not present. If this is the case, then we can pool the data of African countries and proceed with estimation and analysis of results. However, poolability test results indicate that the null hypothesis of homogeneity is rejected as the p-value of F-statistic is zero. Therefore, we cannot rely on results from pooled OLS because African countries are heterogeneous and have individual specific effects.

We next consider panel data methods and first establish whether fixed or random effects specification is appropriate. This is done using the Hausman test which gave chi-square value of 103.15 with a probability of zero. We therefore strongly reject the random effects specification and conclude that a fixed effects model is more appropriate for estimation. Furthermore, we find a negative correlation between fixed effects and explanatory variables $[corr(\mu_i X_{it}) = -0.288]$. This outcome reinforces the appropriateness of fixed effects model since random effects model assumes zero correlation between the two, that is $[corr(\mu_i X_{it}) = 0]$.

The fixed effects model solves heterogeneity problem of OLS by taking into account individual specific effects of countries such as different institutions, geographical characteristics, cultural norms which influence M&A activity and which are fixed in the short to

medium term. This is a valid assumption given the diversity of African countries. However, the presence of a lagged dependent variable as an explanatory variable in the fixed effects model as well as in pooled OLS, gives rise to endogeneity problem. This is due to the fact that the lagged dependent variable tends to be correlated with fixed effects in the error term resulting in dynamic panel bias. If we do not take into account the presence of lagged dependent variable as one of explanatory variables in estimation, the results obtained would be inconsistent.

The suggested solution to dealing with dynamic panel bias problem is the use of GMM. One of the GMM estimators is difference GMM proposed by Holtz-Eakin et al. (1988) and further developed by Arellano and Bond (1991). Difference GMM transforms the dynamic model by using first differences of regressors, in order to remove country-specific effects and lagged endogenous are used as instruments. The use of first difference of regressors ensures that they are not related with the error term. However, difference GMM works best when the panel data set is balanced, as the estimator tends to have problems dealing with missing observations in unbalanced panels by magnifying gaps. Furthermore, Arellano and Bover (1995) argue that lagged levels are poor instruments for first differences (Asiedu and Lien, 2011).

The alternative to difference GMM is the use of system GMM suggested by Arellano and Bover (1995) and Blundell and Bond (1998). System GMM is a more efficient estimator than difference GMM because it mitigates the problem of poor instruments by utilising additional moment conditions (Asiedu and Lien, 2011). Moreover, system GMM uses the average of future observations to work out differences, that is, it uses orthorgonal deviations instead of previous period observations (Roodman, 2006).

System GMM is more appropriate for unbalanced panel datasets as in our case, but the problem with it is that it results in more instruments than difference GMM. The outcome of many instruments significantly improves efficiency of estimators. However, having too many instruments, known as instrument proliferation, can be a problem especially in finite samples (Roodman, 2006). The instruments may seem valid individually but not collectively, resulting in unreliable findings. To test for collective validity of instruments, we apply difference in Sargan tests, which ensure that the subset of instruments that have been chosen is valid. With regard to choice of instruments, one can instrument with levels or differences, or collapse the instruments.

5   EMPIRICAL RESULTS AND DISCUSSION

We estimate pooled OLS, fixed effects, difference and system GMM models as discussed in the estimation procedure in the previous section and regression results are shown in Table 2. All the explanatory variables are lagged by one period to avoid endogeneity problem. With regard to GMM estimators, we first report results of difference GMM in column 4, and system GMM in column 5. The following diagnostic tests were conducted to ensure quality of GMM results. For all the tests, probability values are reported.

First, Wald test for joint significance of explanatory variables is found to be significant at 1 per cent level in all the regressions. Second, Sargan and Hansen test for overidentifying restrictions confirms that the chosen instruments are valid and exogenous. Third, Arellano and Bond test for first and second order autocorrelations failed to reject the null for second order autocorrelations of all the system GMM regressions. However, only one difference GMM satisfies this condition. Fourth, though not reported in our results, according to difference-in-Sargan test, the subset or group of chosen instruments is exogenous and valid.

Empirical results are shown in Table 2, with all the variables and different estimation techniques. Tables 5-8 in the appendix provide more results, each table dealing with particular technique and variation of explanatory variables. The discussion of results is organised as follows, we first deal with the role of inertia, then external factors, followed by domestic factors such macroeconomic stability and financial development, we then finish with institutional quality and natural resources.

Role of inertia: Lagged dependent variable has a positive and statistically significant effect in pooled OLS and system GMM models. The coefficients range from 0.1 to 0.6 in different specifications, implying that, a one percentage increase in previous year M&A will result in approximately 0.3 per cent increase in current period's M&A. This result indicates that M&A activity in Africa responds with a lag, showing the role of inertia in driving M&A activity. Kamaly (2007) found that M&A to developing countries exhibit a moderate level of inertia, which is not as much as that found for total FDI. Lagged M&A coefficient is the second largest among his explanatory variables.

External factors: International stock markets as proxied by S&P index have a positive and significant effect on M&A activity in Africa, in all the specifications. This result suggests that positive changes in stock prices in developed countries, which signify booming economic activity there, generate an increase in M&A targeting Africa, and vice versa, suggesting a pro-cyclical nature in M&A activity. However, the coefficient of approximately 0.001 is rather very small and can be interpreted as a one per cent increase in S&P index

Table 2: Determinants of M&A in Africa

	Pooled OLS	Fixed Effects	Difference GMM	System GMM
Constant	−3.887***	−5.753***	−5.298***	−3.291***
Lagged MA	0.347***	0.091***	0.0919***	−0.309***
External factors				
Standard and Poor's Index	0.001***	0.001**	0.001***	0.001**
Weighted Av.(G7 bond yields)	0.748***	1.587***	1.056***	0.0650***
Domestic factors				
Financial Development				
Liquid Liabilities % GDP	0.034***	−0.007	0.047***	0.037***
Stock Market cap % GDP	0.015***	0.001***	0.018***	0.014***
Macroeconomic Stability				
Inflation rate	−0.0001	−0.0001***	−0.0001	0.0001
Exchange rate	0.0087	0.0086**	0.0033	0.0045
Financial openness	0.017	0.254	0.042	0.029
Corruption	−0.023	−0.256*	−0.070	−0.064
Natural resources	0.018***	0.046***	0.024***	0.020***
Wald χ^2			0.000	0.000
Sargan (overidentifying)			0.468	0.451
Arellano-Bond AR(2)			0.207	0.908
Number of restrictions			27	27

Where *** means significant at 1%, ** means significant at 5% * means significant at 10%.

in the previous year raises M&A activity in Africa by only 0.001 per cent. Kamaly (2007) has a similar finding that an increase in S&P index increases M&A activity in developing countries. International interest rates and risk as proxied by weighted average of bond yields in G7 countries have a positive and significant effect in all the regressions on M&A (see Tables 5-8 in the Appendix). The coefficient of this variable is the largest and is a partial elasticity which suggests that a one per cent increase in G7 index results in 0.7 to 1.6 per cent increase in M&A activity, all else constant. Since the overall effect of bond yields on M&A sign is positive, it indicates that a high level of risk in the G7 leads to diversion of investment to high growth and high return regions such as Africa during the period. Kamaly (2007) however finds a negative and statistically significant relationship between bond yields and M&A in developing countries, suggesting the cost of capital effect was much stronger. His coefficient of 0.1 is second largest among explanatory variables.

He interprets the point estimate as one per cent increase in interest rate decreasing M&A to GDP ratio by 0.1 per cent. Melicher et al. (1983) find that lagged bond yields were negatively related to M&A. In some studies, bond yields exhibited both signs (Golbe and White, 1988).

Macroeconomic Stability: Inflation has a negative and statistically significant effect at 1 per cent level in the fixed effects regression but loses significance though maintains the correct sign in GMM regressions. The coefficient sign is in line with theoretical expectation that high inflation discourages investment as it increases the cost of doing business. Hence M&A investors shy away from countries with high inflation rates. Yartey and Adjasi (2007) and Onyeiwu and Shrestha (2004) find negative and statistically significant relationship with FDI in Africa but Ezeoha and Cattaneo (2012) find a positive and significant relationship, whereas Asiedu (2002) finds an insignificant relationship. So the empirical results for the relationship between FDI and inflation in Africa are mixed, even though M&A and inflation relationship is negative in our case.

Changes in exchange rate have a positive statistically significant effect on M&A at 1 per cent level in the fixed effects regression but lose significance though maintain the correct sign in GMM regressions. The positive sign implies that exchange rate depreciations are conducive to M&A activity as they make domestic assets relatively cheaper and hence encourage M&A activity. Previous studies by Froot and Stein (1992), Gastanaga et al. (1998) confirm this positive relationship between FDI and exchange rate. Furthermore, Kamaly (2007) finds a positive and significant effect between exchange rate changes and M&A in developing countries.

Financial Development: The first measure of financial depth shows that the banking sector plays an important role in facilitating M&A transactions in Africa. A positive and statistically significant effect on M&A activity is observed, in all models apart from fixed effects. The coefficient suggests that a one percent increase in liquid liabilities to GDP, would increase M&A activity by between 0.02 to 0.04 per cent, holding all other variables constant. The sign and significance of this variable is in line with results previous from previous studies by Ezeoha and Cattaneo (2012) and Agbloyor (2011) who find a positive significant relationship for FDI and MA in Africa, respectively. However, Kamaly (2007) finds a positive but insignificant effect for developing countries.

The results of the second financial development indicator suggest that domestic stock markets development significantly encourage M&A activity in Africa. The coefficient of approximately 0.02 implies that a one per cent increase in stock market capitalization to GDP will increase M&A activity by 0.02 per cent. Surprisingly, Kamaly (2007) finds this

coefficient negative and statistically significant for developing countries. Agbloyor (2011) find that stock market development does not predict M&A activity in Africa. Both these two authors' results contradict our results, but a possible explanation to their surprising results is reduction is sample size used (sample bias). Kamaly (2007) lost 20 per cent of his sample due to unavailability of stock market data and Agbloyor (2011) used 14 African countries with stock markets. Our results hold even when we use of stock market activity (that is value of stocks traded as a percentage of GDP) and stock market efficiency (stock market turnover ratio) indicators.

The third indicator of financial development, that is financial openness, shows that the extent of liberalisation of the financial account has a negative but statistically insignificant relationship with M&A activity, in all the regressions. This result is not surprising for Africa, given that many countries' quality of institutions and legal systems are challenged. The situation in Africa falls within Chinn and Ito (2008) caveat that financial openness promotes financial development only under specific conditions. Given that the institutional variable in the regression, that is corruption, did not perform well, it is also not surprising to find financial openness to be found wanting. In spite of this, studies such as Brakman et al. (2006) and Agbloyor (2011) find that trade and financial openness, respectively stimulates M&A activity, though our results suggest that financial account openness does not affect M&A activity in Africa.

Institutional Quality: The index for corruption is negatively related to M&A in all the regressions but is only significant in fixed effects model. Ezeoha and Cattaneo (2012) find corruption positively related to FDI in Africa and conclude that corruption is an incentive to FDI as it acts as a helping hand. Since the coefficient is only significant in one specification, perhaps we cannot make firm conclusions about it, but the negative relationship is evident in all the regressions. Our results should be interpreted bearing in mind that there are many missing observations for corruption index in many African countries, which might have affected our results.

Natural Resources: The question of whether natural resources matter with regard to M&A in Africa is addressed by inclusion of the share of total natural resources rents to GDP. The coefficient is positive, as expected, and statistically significant in all the regressions. The coefficient of approximately 0.02 is slightly lower than that of banking sector development indicator. Our results are in agreement with Asiedu (2006) and Onyeiwu and Shrestha (2004) who also find a positive and significant relationship between natural resources and FDI in Africa, using the same proxy as this study. Asiedu (2006) however points out that, even resource-poor countries with quality institutions benefit from FDI.

6 CONCLUSION

This paper examines determinants of M&A targeting Africa for the period 1990 to 2011. Trends of M&A in Africa are similar to other developing regions of Asia and South America suggesting that there are similar global factors that drive the overall trends in M&A. Our panel regression analysis, based on fixed effects and GMM estimations show that M&A in Africa respond positively and significantly to external factors which are represented by international stock market (S&P) and weighted average of international bond yields in G7 countries.

Location-specific domestic factors are also important drivers of M&A activity. Macroeconomic stability variables, that is inflation and exchange rates have right signs and are statistically significant but only in the fixed effects model. Financial development came out strongly, with banking sector development and stock market development having right signs and statistically significant. However, results from financial openness indicate that M&A activity does not respond significantly. M&A activity in Africa respond with a lag, showing the role of inertia in driving M&A activity. The role of institutions as proxied by corruption index indicates a negative relationship with M&A suggesting that corruption is a disincentive to investment. Results of natural resources proxy are consistent in all the regressions and suggesting that M&A in Africa are resource driven.

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Appendices

Table 3: Variable Description and Source

Name of Variable	Variable Description	Source
Value of M&A	Mergers and Acquisitions	Thomson Financial
S&P Index	% change in Standard and Poor's Index	Quantec Database
G7 bond yields	Weighted Av. G7 bond yields	Quantec Database
Financial Development		
1. Size of banking sector	Liquid liabilities to GDP	Beck et al. (2000)
2. Size of domestic markets	Total value traded to GDP	Beck et al. (2000)
3. Capital account	Financial Openness	Chinn and Ito (2008)
Corruption	Corruption Index	CIDCM
Inflation	% change in CPI	WDI(World Bank)
Exchange rates	Annual Av. change in monthly rates	IFS (IMF)
Natural Resources	Share of total natural resources rents to GDP	WDI(World Bank)

Table 4: Summary Statistics

Variable	Mean	Standard Deviation	Minimum	Maximum
Number M&A	2.446	8.29	0	0
Value M&A ($million)	157.613	991.257	0	18448.1
Liquid liabilities	29.778	21.570	0.0948	117.799
Stocks value traded	2.761	27.260	0	754.028
Financial openness	-0.634	1.140	-1.856	2.456
Inflation	65.722	854.102	-11.686	23773.1
Exchange rate	2.013	13.215	-122.356	162.5
Corruption index	2.403	1.026	0	5
Natural resources	11.183	16.072	0	79.580

Table 5: Determinants of M&A in Africa: Pooled OLS Results

	Pooled OLS1	Pooled OLS2	Pooled OLS3	Pooled OLS4
Constant	−3.141***	−2.787**	−3.250***	−3.887***
Lagged MA	0.567***	0.440***	0.427***	−0.346***
External factors				
Standard and Poor's Index	0.001***	0.001**	0.001***	0.001**
Weighted Av.(G7 bond yields)	0.761***	0.608**	0.689***	0.748***
Domestic factors				
Financial Development				
Liquid Liabilities % GDP		0.017**	0.016**	0.034***
Stock Market cap % GDP		0.044***	0.016**	0.016**
Financial Openness		0.026	0.002	0.017
Macroeconomic Stability				
Inflation rate			-0.000	-0.000
Exchange rate			0.007	0.008
Corruption				−0.023*
Natural resources				0.019***
Number of Observations	868	726	711	515
F-statistic	86.21***	61.83***	31.16***	22.84***
R^2	0.35	0.43	0.45	0.48

Where *** means significant at 1%, ** means significant at 5% * means significant at 10%.

Table 6: Determinants of M&A in Africa: Fixed Effects Results

	Fixed Effects1	Fixed Effects2	Fixed Effects3	Fixed Effects4
Constant	-6.539^{***}	-6.198^{***}	-6.493^{***}	-5.753^{***}
Lagged MA	0.145^{***}	0.111^{***}	0.108^{***}	0.091^{***}
External factors				
Standard and Poor's Index	0.001^{***}	0.001^{**}	0.001^{***}	0.001^{**}
Weighted Av.(G7 bond yields)	1.563^{***}	1.557^{***}	1.623^{***}	1.587^{***}
Domestic factors				
Financial Development				
Liquid Liabilities % GDP		-0.002	-0.002	0.007
Stock Market cap % GDP		0.003	0.003	0.001
Financial openness		0.326^{**}	0.332^{**}	0.254
Macroeconomic Stability				
Inflation rate			-0.0001^{***}	-0.0001^{***}
Exchange rate			0.009	0.009
Corruption				-0.255^{*}
Natural resources				0.046^{**}
Number of Observations	868	732	711	515

Where *** means significant at 1%, ** means significant at 5% * means significant at 10%.

Table 7: Determinants of M&A in Africa: Difference GMM Results

	DGMM1	DGMM2	DGMM3	DGMM4
Constant	−7.061***	−5.483***	−5.625***	−5.298***
Lagged MA	0.051	0.062	0.062	0.092
External factors				
Standard and Poor's Index	0.001***	0.001**	0.001***	0.001**
Weighted Av.(G7 bond yields)	1.693***	1.178***	1.208***	1.056***
Domestic factors				
Financial Development				
Liquid Liabilities % GDP		0.026***	0.026***	0.047***
Stock Market cap % GDP		0.025***	0.021***	0.018***
Financial openness		0.024	0.025	0.042
Macroeconomic Stability				
Inflation rate			-0.0001	-0.0001
Exchange rate			0.003	0.003
Corruption				−0.069*
Natural resources				0.024***
Wald χ^2	0.000	0.000	0.000	0.000
Sargan (overidentifying)	0.566	0.212	0.215	0.468
Arellano-Bond AR(2)	0.013	0.047	0.077	0.207
Number of restrictions	20	23	25	27

Where *** means significant at 1%, ** means significant at 5% * means significant at 10%.

Table 8: Determinants of M&A in Africa: System GMM Results

	SysGMM1	SysGMM2	SysGMM3	SysGMM4
Constant	-4.671***	-4.285***	-4.378***	-3.291***
Lagged MA	0.326***	-0.205	0.209	0.317*
External factors				
Standard and Poor's Index	0.001**	0.001**	0.001***	0.001***
Weighted Av.(G7 bond yields)	1.135***	0.924***	0.941***	0.650***
Domestic factors				
Financial Development				
Liquid Liabilities % GDP		0.022***	-0.022	0.036***
Stock Market cap % GDP		0.017***	0.017***	0.014***
Financial openness		0.018	0.016	0.029
Macroeconomic Stability				
Inflation rate			-0.000	-0.000
Exchange rate			0.004	0.004
Corruption				-0.064
Natural resources				0.020***
Wald χ^2	0.000	0.000	0.000	0.000
Sargan (overidentifying)	0.240	0.120	0.489	0.451
Arellano-Bond AR(2)	0.894	0.794	0.923	0.908
Number of restrictions	20	23	25	27
Number of Observations	868	732	711	515

Where *** means significant at 1%, ** means significant at 5% * means significant at 10%.

Table 9: List African countries included

Algeria	Madagascar
Angola	Malawi
Benin	Mali
Botswana	Mauritania
Burkina Faso	Mauritius
Burundi	Morocco
CA Republic	Mozambique
Cameroon	Namibia
Cape Verde	Niger
Chad	Nigeria
Congo republic	Rwanda
Congo, DR	Senegal
Cote d'Ivoire	Seychelles
Egypt	Sierra Leone
Equatorial Guinea	South Africa
Ethiopia	Sudan
Gabon	Swaziland
Gambia	Tanzania
Gambia	Togo
Guinea	Tunisia
Kenya	Uganda
Lesotho	Zambia
Liberia	Zimbabwe

Table 10: Mega Deals in Africa (1990-2011)

Year	Deal value	Acquiror	Target
1993	$1.428 billion	Minorco SA Luxembourg	Anglo-America Selected Mining South Africa
2001	$11.078 billion	DB Investments Luxembourg	De Beers Consolidated Mines South Africa
2005	$4.953 billion	Barclays UK	ABSA South Africa
2006	$1 billion	Lexshell 44 General Trading UK	Victoria & Alfred Waterfront South Africa
2007	$15.043	Larfarge France	OCI Cement Group Egypt
2007	$5.616 billion	ICDC China	Standard Bank South Africa
2007	$3.502 billion	Bain Capital LLC USA	Edgars Consolidated Stores South Africa
2008	$10.7 billion	Bharti Airtel India	Zain Africa Nigeria
2010	$3.119 billion	NTT Japan	Dimension Data South Africa
2010	$2.154 billion	Walmart USA	Massmart South Africa

Source: Thomson Financial