

# DETERMINANTS OF CROSS-BORDER MERGERS AND ACQUISITIONS IN AFRICA FROM 2000 TO 2014: THE ROLE REGIONAL INTEGRATION.

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## Abstract

Mergers and Acquisitions (M&A) have increased significantly as a popular mode of entry for Foreign Direct Investment (FDI). During the last decade, worldwide M&A flows almost doubled, growing faster than aggregate FDI flows. At the same time, Africa became a very attractive destination for investment due to high economic growth and improved investment climate, though Asia was first. In this paper, we examine how regional integration affects cross-border M&A in Africa for the period 2000 to 2014, using a gravity model. The findings suggest that customs unions in Africa, specifically Southern Africa Customs Union (SACU) and East African Community (EAC), are significant drivers of M&A by firms from within the unions but not those from outside, perhaps due to their relatively small size. However, large free trade areas such as the Common Market for Eastern and Southern Africa (COMESA) and Economic Community of West

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African States (ECOWAS) seem to attract M&A from within and outside the region. We note that the results for Southern African Development Community (SADC) are not statistically significant. These findings suggest that enlarged free trade areas such as the one signed in 2008 by member countries of Eastern and Southern African countries, may be a step in the right direction, as larger regional economic blocs create economies of scale which attract extra-regional M&A flows.

Keywords: Africa, Mergers and Acquisitions, Gravity Model, Foreign Direct Investment

JEL Classification: F21; F23; C35

# 1 INTRODUCTION

In the last two decades, cross-border Mergers and Acquisitions (M&A) have become the dominant strategy for global businesses to attain growth, make profit and diversify their enterprises. According to Erel et al. (2012) worldwide growth in the number of cross-border M&A increased from 23% in 1998 to 45% in 2007. Furthermore, M&A have been identified as the driving force behind the expansion of Foreign Direct Investment (FDI) especially in developed countries where M&A constitute a substantial proportion of FDI, at times reaching 80% (UNCTAD, 2006). This substantial growth and significant rise of M&A as a component of FDI makes it important to have a better understanding of factors that influence specific entry modes such as M&A. Empirical literature on determinants of FDI has focussed on aggregate but not specific entry modes of FDI.

Literature on determinants of entry mode choice in international expansion seems to suggest differences between M&A and greenfield investment. Brouthers and Brouthers (2000) argue that fast growing markets have spare capacity and favour greenfield form of investment whereas slow growing markets have limited capacity, hence acquisitions are preferred mode for diversification. Nocke and Yeaple (2007) examine how firm capabilities determine entry mode choice in a foreign market. They argue that the key motive for firms to enter foreign markets is in order to acquire complementary non-mobile capabilities such as distribution networks. Whereas M&A obtain country specific non-mobile capabilities of acquired firms, greenfield investment do not. However, they find that firms engaging in greenfield FDI are more efficient than M&A, though M&A mode is more efficient than exporting. Some scholars, for example Globerman and Shapiro (2002) and Globerman and Shapiro (2005) have attempted to establish determinants of the different modes of FDI. Their findings confirm that economic growth drives greenfield investment whereas financial development and investor confidence drive M&A. Zejan (1990) also notes that economic growth in host markets promotes greenfield mode of investment. Neto et al. (2010) find that some factors drive FDI regardless of the entry mode, whereas certain factors are important for specific entry mode. For instance, investor protection and cultural variables seem to play a bigger role for M&A. Hence, the two modes of FDI are attracted by different factors and need to be analysed separately.

Most literature on M&A is concentrated on domestic activities in the host countries. However, Erel et al. (2012, p.1045) point out that "national bor-

ders add an extra element to the calculus of domestic mergers because they are associated with additional set of frictions that can impede or facilitate mergers." In addition, Ahern et al. (2015) argue that the additional costs that come with cross-border mergers such as cultural differences have strong negative effect on merger activity. Brouthers and Brouthers (2000) findings further suggest that host country characteristics influence the choice of entry mode for FDI. More recently, there has been a growing interest on the role of country characteristics in determining the location of FDI. Dunning (2009, p.60) argues that since the 1990s "the importance of location per se as a variable affecting global competitiveness of firms" became significant. Therefore, it is important to examine how country characteristics such as the level of economic integration, institutional quality and macroeconomic factors influence the location decisions of foreign investors.

Literature on M&A mode of FDI in developing countries is scarce. In fact M&A have not been researched thoroughly in both the developed and developing countries. In the context of Africa, there is hardly any empirical work on M&A activities. To the authors' knowledge, only a few studies have focussed on M&A in Africa. For example, Agbloyor et al. (2012) examines how domestic financial markets affect M&A activity in Africa. More recently, Wilson and Vencatachellum (2016) find that between 2003 and 2008, the number of M&A transactions in Africa doubled as the value of M&A targeting the continent increased sevenfold. Figure 1 in the appendix shows the number of M&A that took place in Africa between 1990 and 2011 compared to other developing regions. It can be observed that M&A activities in Africa follow similar trends as other developing countries. M&A are becoming an attractive mode of investment and over time have become a dominant policy issue for both target and acquiror countries.

This study is different from the existing work on cross-border M&A. First, it focusses on M&A acquisitions in Africa by firms from within the continent as well as by those from outside the continent. Unlike many previous studies, we use a structural gravity model to investigate M&A deals from the year 2000 to 2014. This period of time is important because, first, it is characterised by a commodity boom which affected resource-rich economies of the developing world. Second, most M&A literature tends to omit information such as deal values, majority of which happen to be private mergers and small deals, which may lead to sample selection biases (Netter et al., 2011). It is likely that M&A in developing countries and especially in Africa are understudied due to these sample selection biases. Using Zephyr database

which provides more information on deal values, we examine both the number and value of M&A deals. Third, since previous studies on M&A are on developed countries for example (Ahern et al., 2015; Erel et al., 2012; Hyun and Kim, 2010; Di Giovanni, 2005; Rossi and Volpin, 2004) whose institutions and level of economic development is remarkably different from those in developing countries, we examine how country characteristics such the level of economic integration, institutional quality and macroeconomic factors in Africa affect cross-border M&A.

We extract a dataset for global bilateral M&A flows from Zephyr database. This kind of data provides home and host country of M&A flows, a key ingredient in gravity framework which is ideal for studying the effects of regional integration on foreign investment. Our results suggest that customs unions in Africa, specifically EAC and SACU are significant drivers of M&A by firms from within the unions but not from outside, perhaps due to their relatively small size. However, larger free trade areas such as COMESA and ECOWAS seem to attract M&A from within and outside the region in relatively equal measure. We note that the results for SADC are not statistically significant, which implies that perhaps other modes of entry in the region, especially greenfield, are preferred. We also find that low level of corruption for source or acquiror countries has a positive and significant influence on M&A deals whereas the results suggest that weak property rights for both acquiror and target, encourage cross-border M&A flows. We find that amongst financial factors included; only market capitalisation as a ratio of GDP seems to have a significant positive influence on M&A. Finally, our results confirm that the basic variables of the gravity model such as economic size, distance and cultural variables have the expected signs and are highly statistically significant.

This article is organised as follows: section 2 reviews literature on M&A highlighting the importance of location specific factors especially the role of regional integration in fostering FDI and M&A flows. Section 3 presents a structural gravity model which is developed from micro-foundations. Section 4 describes the data and explains the treatment of zero observations. Section 5 discusses the empirical results whereas section 6 concludes the paper.

## 2 LITERATURE REVIEW

In the literature review which follows, we examine studies on cross-border M&A and draw on FDI and M&A literature specifically related to regional integration. The section concludes with a brief review of recent ideas by Neary (2009) and Neary (2007) which are specific to M&A and help us to understand the relationship between regional integration and M&A.

Literature on determinants of M&A is scarce and has explored various aspects such as the role of culture and institutions (Ahern et al., 2015; Hyun and Kim, 2010) and the role of financial market development (Di Giovanni, 2005). Several studies have attempted to identify mode distinguishing determinants of FDI, for instance Globerman and Shapiro (2002) and Globerman and Shapiro (2005), Aminian et al. (2005) and Neto et al. (2010). Rossi and Volpin (2004) look at how differences in laws and regulations explain the pattern of M&A whereas Erel et al. (2012) explore how valuations influence M&A investors' decisions. However, most of this research is mainly on developed countries.

There are just a few empirical studies on cross-border M&A in developing countries. Kamaly (2007) examines macroeconomic determinants of M&A in 60 developing countries in the 1990s. He finds that M&A activity is driven by international stock markets, interest rates and responds with a moderate lag. Aguiar and Gopinath (2005) investigate the behaviour of M&A in East Asia during the 1997-98 crisis. They find that reduced domestic liquidity played a significant role in explaining the dramatic increase in foreign acquisitions in this period. More recently, Brooks and Jongwanich (2011) investigate M&A and financial development in nine emerging market economies in Asia for the period 2000-2009 and find that the banking sector plays a bigger role than equity and bond markets.

Research on M&A in Africa is even more scarce. The only studies which have paid attention to M&A in Africa are Agbloyor et al. (2012) who examine how domestic financial markets in eleven(11) African countries affect M&A activity and Wilson and Vencatachellum (2016) who investigate how global factors such as international financial markets and natural resources affect M&A in Africa. Agbloyor et al. (2012) find that banking sector development, but not stock market development, encourages M&A activity . Wilson and Vencatachellum (2016) find that M&A in Africa were driven by international stock markets and bond yields as well as natural resource endowment. In this paper, we investigate the relationship between regional integration and

M&A activities in Africa.

The relationship between regional integration and FDI has been of interest to researchers since the establishment of European Union. The key element of regional integration is that it expands the market and hence generates interest of potential investors wanting to exploit economies of scale. Bahadur and McCord (2004) argue that regional integration will raise the interest of foreign investors by increasing the scope for market. Also, Brenton et al. (1999, p.95) assert that “regional economic integration provides an important stimulus not only to trade but also FDI”.

Blomstrom and Kokko (1997) and Kubny et al. (2011) argue that investigating the relationship between regional integration and FDI is complicated by many aspects of the relationship which need to be taken into consideration. The complexity is brought about by opposing effects from the various transmission channels. The two main transmission mechanisms are trade and investment<sup>1</sup>. Warin et al. (2009) in their empirical work, covering the period between 1994 and 2005, illustrate that the integration process towards the European Monetary Union (EMU) doubled FDI flows within the EMU, hence complementing the impact on trade as measured by Frankel and Rose (1998). Using case studies, Blomstrom and Kokko (1997) analyse the effect of economic integrations between developed and developing countries, whereas Kubny et al. (2011) looks at the benefits of integrations amongst developing economies.

Empirical research on the impact of regional trade agreements (RTAs) on FDI include Levy-Yeyati et al. (2003) who investigate how investment patterns between the North and South are affected by the presence of RTAs, and Te Velde and Bezemer (2006) who focus on the impact of RTAs on FDI inflows in developing countries from two source developed countries. Levy-Yeyati et al. (2003) measure regional integration with a dummy variable, whereas Te Velde and Bezemer (2006) use a quantitative measure of the strength of integration within RTAs, by using the level of trade and investment provisions. Both empirical studies use stock and not flow of FDI, and both use gravity model for analysis.

There are very few theoretical models that explain the relationship between regional integration and M&A subset of FDI. A model by Neary (2009) suggests that a decrease in trade costs within an economic bloc encourage competition and can trigger cross-border merger waves. This argument that

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<sup>1</sup>These transmission channels are explained in section 3.1.1

falling trade costs stimulate FDI is in line with the trade liberalization channel suggested by Blomstrom and Kokko (1997). Furthermore, Neary (2009) theoretical model extends to capital market liberalisation such as the special case of a monetary union. He argues that financial integration reduces transaction costs such as exchange rate risk, and therefore facilitates movement of capital across borders.

Neary's theory is tested by Coeurdacier et al. (2009) who investigate whether trade liberalisation within the European Monetary Union (EMU) and financial integration within the European Union (EU) promote M&A within the region and with the rest of the world. Using sectoral data for manufacturing and service sectors of major economies, the authors find that financial integration within EU had a strong impact on horizontal M&A in the manufacturing sector while trade liberalisation within EMU did not benefit the service sector.

Brakman et al. (2005) explicitly test the implications of theoretical proposition by Neary (2007) that cross-border M&A are driven by comparative advantage. Using sectoral data for period 1980-2005 from five(5) OECD countries, their results show that acquiring firms operate in strong sectors. However, target firms also come from strong sectors, not weak sectors, which they call 'target paradox'. These findings support Neary (2007) hypothesis that low-cost firms, which have comparative advantage, have an incentive to merge or takeover high-cost weak sectors.

To conclude this section, the review of literature has shown that there are limited empirical studies on determinants of M&A in developed countries. The literature in developing countries is even scarcer and in Africa only two studies have been found so far. The literature reviewed in this section finds evidence that regional integration promotes FDI and M&A. However, many of these studies relate to aggregate FDI stock and not flows or M&A. The entry mode choice of FDI matters, therefore we need to specifically consider the case of M&A mode of entry. The few studies on M&A use sectoral and not aggregate data for developed countries.

### 3 THEORETICAL MODEL

We introduce a theoretical model developed by Head and Ries (2008) from the “inspection game” presented in Fudenberg and Tirole (1991). This model implies a trade-off between the gain of transferring the control to a better owner and the costs entailed by the fact that an owner is located remotely from the target. If not controlled, the manager of the subsidiary will not have strong incentive to optimize the worth of the affiliate.

In this model, the management of a headquarter (hereafter, HQ) decide whether or not to control the management of an overseas affiliate (hereafter, AF), while the affiliate opts whether to shirk or to work. Profits depend on the contributions of HQ and AF. HQ brings  $e$  in any case whereas AF only yields  $f$  when choosing to work. At the same time HQ decides whether to trust AF or to monitor whether it has worked or not.

Table 1 shows the payoffs for HQ and AF. AF receives  $w$  from HQ, unless the latter monitors him and uncovers shirking; in such a case AF gets nothing. When AF works, he generates a gross output of  $e + f$ . However, working implies  $g$  as a cost of effort to AF while the monitoring costs for HQ are equal to  $h$ .

Table 1: The inspection game

		Headquarters chooses	
		Trust ( $1 - z$ )	Monitor ( $z$ )
Affiliate management chooses	Shirk ( $y$ )	$w, e - w$	$0, e - h$
	Work ( $1 - y$ )	$w - g, e + f - w$	$w - g, e + f - w - h$

We follow Fudenberg and Tirole (1991) and Head and Ries (2008) by assuming that  $f > w > g > h$ . In those conditions, there is no Nash equilibrium in pure strategies. In a Nash equilibrium with mixed strategy, AF cheats with probability  $y$  and HQ monitors with probability  $z$ . HQ’s expected revenues are  $e + f(1 - y)$ , while its expected costs are given by  $hz + w(1 - yz)$ . Hence, the expected payoffs of HQ and AF are respectively:

$$\nu_{hq} = e + f(1 - y) - hz - w(1 - yz) \tag{1}$$

$$\nu_{af} = w(1 - yz) - g(1 - y) \tag{2}$$

Agents select their respective probabilities by considering the others' as fixed. Consequently, the first order conditions for HQ and AF are respectively:

$$\partial \nu_{hq} / \partial z = -h + wy \quad (3)$$

$$\partial \nu_{af} / \partial y = g - wz \quad (4)$$

The equilibrium mixed strategy therefore implies the following probabilities  $y = h/w$  and  $z = g/w$ . Replacing these probabilities by their respective expressions into HQ's payoff, we have

$$\nu_{hq} = e + f(1 - h/w) - w \quad (5)$$

Optimizing this objective function with respect to  $w$  yields the following solution  $w^* = \sqrt{fh}$ . This implies that there is a contract between HQ and AF implying that AF will be paid  $\sqrt{fh}$  except when HQ notices that AF has cheated. We now have the expression of the optimal payoff function

$$\nu_{hq} = e + f - 2\sqrt{fh} \quad (6)$$

As outlined by Head and Ries (2008) the most important result that flows from that expression is that higher verification costs lower the value of the affiliate to the headquarter. This result is even boosted when AF's effort is more valuable. Stated otherwise, if two headquarters of equal value added  $e$  were bidding, the headquarter with lower monitoring costs would provide the highest auction.

We can now move one step forward to our econometric specification by assuming that monitoring costs,  $h$ , are an increasing function of a vector of measures of geographical and cultural distances and of economic proximity<sup>2</sup>, denoted  $\mathbf{D}_{ij}$ . We can express this "remoteness function" as follows

$$h_{ij} = [k(\mathbf{D}_{ij})/2]^2 \quad \text{with } k' > 0$$

Replacing  $h$  in equation (6), by the formula of the remoteness function yields the following expression of the payoff function of a headquarter in country  $i$  monitoring a target in country  $j$

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<sup>2</sup>An interesting measure of economic proximity is participation in an regional integration such as a regional trade agreement.

$$\nu_{ij} = e + f - 2\sqrt{fk}(\mathbf{D}_{ij}) \quad (7)$$

We model the ownership outcome as a process where the headquarter which expects the highest affiliate valuation, makes the highest bid, and wins the auction for control of the affiliate. We denote  $\pi_{ij}$  as the probability that headquarter from country  $i$  takes control of a randomly drawn affiliate or target in country  $j$  and  $K_j$  the asset value of entire stock of targets country  $j$ . The expected value of mergers and acquisitions ( $M\&A$ ) between country  $i$  and  $j$  is given by the following equation:

$$E(M\&A_{ij}) = \pi_{ij}K_j \quad (8)$$

Due to many large target sizes, which create lumpiness in data, the realized value of  $M\&A$  will differ from the expected value of  $M\&A$ .

To specify  $\pi_{ij}$  we assume that acquiror country  $i$  has  $m_i$  headquarters, each of which have different valuations for a given target country  $j$ . We introduce heterogeneity in valuations through headquarter value-added term,  $e$ . We assume that the cumulative density of  $e$  takes Gumbel Type 1 Extreme Value form:  $\exp(-\exp(-(x-\mu)/\sigma))$ .

Using discrete choice theory (Anderson et al., 1992, p.39) one can show that  $\pi_{ij}$  are given by multinomial logit formula:

$$\pi_{ij} = \frac{\exp\left[\mu_i/\sigma + \ln m_i - \left(\sqrt{f}/\sigma\right)k(\mathbf{D}_{ij})\right]}{\sum_l \exp\left[\mu_l/\sigma + \ln m_l - \left(\sqrt{f}/\sigma\right)k(\mathbf{D}_{lj})\right]} \quad (9)$$

If we substitute equation (9) into (8) we obtain the expected bilateral value of  $M\&A$  as:

$$E(M\&A_{ij}) = \frac{m_i \exp\left[\mu_i/\sigma - \left(\sqrt{f}/\sigma\right)k(\mathbf{D}_{ij})\right]}{\sum_l m_l \exp\left[\mu_l/\sigma - \left(\sqrt{f}/\sigma\right)k(\mathbf{D}_{lj})\right]} K_j \quad (10)$$

Let the inspection cost function  $k(\mathbf{D}_{ij}) = \mathbf{D}_{ij}\boldsymbol{\delta}$  where  $\boldsymbol{\delta}$  is distance costs of remote inspections and where  $\boldsymbol{\theta} \equiv \boldsymbol{\delta}\sqrt{f}/\sigma$ . The compound parameter  $\boldsymbol{\theta}$

measures friction costs due to distance between countries. As shown,  $\theta$  is directly related to distance costs of inspection ( $\theta$ ) and the value added by manager who chooses not to shirk ( $f$ ).

Using the latter notation, we can then specify the bid competition, a measure of remoteness, for targets in country  $j$  as  $B_j \equiv \sum_l s_l^m \exp(\mu_l/\sigma - D_{lj}\theta)$ , with  $s_i^m = m_i/\sum_l m_l$  the country's share of world bidders.

We therefore express equation (10) as:

$$E(M\&A_{ij}) = \frac{\exp(\mu_i/\sigma - \mathbf{D}_{ij}\theta)}{B_j} s_i^m K_j \quad (11)$$

A higher bid competition implies that it is easier for assets in country  $i$  to be acquired by rivals from other countries, hence reducing the expected bilateral  $M\&A$  from country  $i$ .  $B_j$  is similar to the ‘‘multilateral resistance term’’ developed in the trade literature by Anderson and Van Wincoop (2003) and represents the market potential or supplier access. We can rewrite the right hand side of equation (11) as follows:

$$E(M\&A_{ij}) = \exp[\mu_i/\sigma + \ln s_i^m + \ln K_j - \ln B_j - \mathbf{D}_{ij}\theta] \quad (12)$$

This formula reminds us of the gravity equation as the expected bilateral  $M\&A$  are positively related to the product of target and acquirer countries size variables,  $s_i^m$  and  $K_j$  respectively, but inversely related to measures of distance between two countries ( $\mathbf{D}_{ij}\theta$ ). The terms  $\mu_i/\sigma$  are related to the profitability of investments in country  $i$  which is influenced by factors such as locational factors. We can therefore use the gravity equation to estimate the effect of various determinants of cross-border  $M\&A$ . Since we are interested in the effect of economic blocs such as regional trade agreements(RTA) on cross-border  $M\&A$ , we augment the standard gravity model as follows:

$$\begin{aligned} M\&A_{ijt} = & \alpha_i + \alpha_j + \alpha_t + \beta_1 \log GDP_{it} + \beta_2 \log GDP_{jt} \\ & + \beta_3 \text{BothinRTA}_{ijt} + \beta_4 \text{OneinRTA}_{ijt} + \phi Z_{ijt} + \nu_{ijt} \end{aligned} \quad (13)$$

Where:  $M\&A_{ijt}$  is bilateral  $M\&A$  between target and acquirer countries at time  $t$ ;  $\alpha_i$  and  $\alpha_j$  are target and acquirer countries individual effects which capture unobservable characteristics of target and acquirer countries;  $\alpha_t$  is

the effect specific to year  $t$  but common to all the pairs of countries to capture common shocks (such as 2008 global financial crisis);  $GDP_{it}$  and  $GDP_{jt}$  is target and acquiror country GDP at time  $t$ ;  $Z_{ij}$  is a set of control variables linked to transaction costs associated with cross-border M&A, which include distance, institutions, cultural and financial variables. These variables are described in much more detail in the following section.  $BothinRTA_{ijt} = 1$  if both acquiror and target countries are members of a regional economic bloc such as SADC;  $OneinRTA_{ijt} = 1$  if target country is a member of regional bloc but acquiror country is not and  $\nu_{ijt}$  is the error term

### 3.1 DESCRIPTION OF EXPLANATORY VARIABLES AND A PRIORI EXPECTATIONS

We first discuss the expectation of the relationship between regional integration and M&A before we turn to the relationship between M&A and other important explanatory variables.

#### 3.1.1 The effect of regional integration on M&A

We closely examine the effects of regional integration represented by regional trade agreements on cross-border M&A. We scrutinize the relationship from the point of view of the source or acquiror of M&A.

The acquiror of M&A can be categorised into two groups. First, the acquiror can be a participating member of a regional economic bloc. In such a case, the member of RTA can purchase targets within the region, resulting in intra-regional M&A. We assigned the variable  $BothinRTA_{ijt}$  in Equation 13 to such an acquiror. Second, the acquiror can be a non-member of a regional economic bloc or RTA. A non-member can invest in one country in the regional bloc in order to take advantage of benefits within the bloc. This is the case of inter-regional M&A described by  $OneinRTA_{ijt}$  variable in Equation 13. The latter helps us to analyse investment from outside the region.

Looking at M&A from the point of view of the source of flows is helpful in distinguishing M&A deals by acquiror and target. If the source of M&A is a participating member of a regional bloc, it is expected that the removal or reduction of trade barriers would enhance trade within the region. However, the removal of trade barriers would discourage horizontal M&A which had been previously incentivised by tariff jumping. As a result, trade becomes a

substitute for horizontal FDI and M&A. The other effect of the removal of trade barriers is that it expands the regional market and stimulates intra-regional FDI and M&A, hitherto stifled by tariff jumping. Notable beneficiaries are likely to be vertical intra-regional and efficiency seeking M&A usually from more developed members of RTA. As a result, the net effect of trade liberalization on intra-regional FDI and M&A depends on the type and motive of the investment (Blomstrom and Kokko, 1997; Barrell and Velde, 2002).

The source of M&A can also be from outside the region, that is, inter-regional. In such a case, removal of trade barriers due to the creation of an RTA expands the market making it more profitable for cross-border M&A deals. This channel is more likely to be exploited by market seeking horizontal FDI and M&A from outside the region, and, usually the deals target more developed regional member countries. An example of a more developed regional member who may attract investors from developed countries is South Africa in the Southern Africa Development Community (SADC). Regardless of the source of investment, that is, whether from the region or from outside, the choice of location of M&A is likely to be near the largest market and where the costs of production are lowest (Te Velde and Bezemer, 2006). This might explain why inter-regional inward FDI and M&A in SADC tends to be concentrated in South Africa.

The investment provisions channel takes place through liberalization of capital controls within RTA. Reduction or elimination of restrictions on foreign investment is expected to bring direct benefits to M&A. Investment provisions include explicit protection and treatment of FDI and M&A, such as guarantees against appropriation of investment and foreign investors being given national treatment. Explicit protection of investment is best described by protection of property rights and the presence of dispute resolution mechanisms. Implementation of such provisions improves the investment climate and creates certainty in policy environment. Blomstrom and Kokko (1997) argue that strong property rights is one important aspect of RTAs among developing economies where political risk often inhibits foreign investment.

### **3.1.2 Other explanatory variables**

Apart from regional integration, we select two measures of institutional quality related to M&A. These include the level of corruption and property rights. Foreign investors are attracted to countries with good institutions because

weak institutions increase the cost of capital. Coeurdacier et al. (2009, p.12) argues “reliable institutions enhance transparency and sound legal and political systems offer a less uncertain environment to investors”. Institutional factors such as laws and regulations as well as corruption and political systems have been previously considered as important determinants of M&A (Rossi and Volpin, 2004; Di Giovanni, 2005; Alfaro et al., 2008).

Some recent studies claim that differences in institutions matter, that investors are attracted to countries with similar institutional environment. For instance, investors from countries with good institutions prefer to invest in countries with strong institutions, and vice versa. Moreover, Hyun and Kim (2010) argue that the quality of institutions in host country matters. In this study, we consider institutions in both source (Di Giovanni, 2005) and host countries (Hyun and Kim, 2010).

The level of financial development matters for M&A (Di Giovanni, 2005; Brooks and Jongwanich, 2011). Financial depth indicates the ease with which investors can source funds from financial markets in target countries. Raising funds from internal markets in a country is much cheaper than external markets in target country due to asymmetric information (Froot et al., 1991). In developing countries, the banking sector plays the primary role of providing funds for investment.

Stock and bond markets are increasingly becoming important source of finance for cross-border M&A. Vasconcellos and Kish (1998) argue that M&A are driven by market value of firms. Apart from cash payments, M&A transactions are increasingly being financed through exchange or issuance of equity and bonds. In the 1990s and 1960s merger waves, the medium of payment of M&A transactions was often stock as opposed to cash (Shleifer and Vishny, 2003).

## 4 DATA DESCRIPTION AND SOURCES

We construct a dataset for gross bilateral M&A flows using Zephyr database published by Bureau van Dijk and IBM business directory. An advantage of using this unique database as opposed to other sources is that it is quite comprehensive on M&A activity. In certain cases, the database estimates the value of M&A where it is not provided. This feature of the database enables us to have more data on values especially for developing countries such as those in Africa. The database covers deal information such as announced and completion date of acquisition, and where the completion date is not given, it provides an assumed completion date. Since we use only completed deals in our empirical analysis, this aspect of completed deals is very important. Other aspects of the data are standard. For instance, the dataset provides details of target and acquiror company, but more important is target and acquiror country and region, primary SIC code, major industrial sector, as well as deal information such as the value and other balance sheet information.

Figures 2 to 5 in the Appendix describe the nature of bilateral cross-border M&A dataset used. Figures 2 and 3 show the number and values of deals where Africa is involved, that is, inflows and outflows of M&A. Figure 2 shows the case where African companies have been sold or targeted (M&A inflows) and Figure 3 shows the case where Africa has purchased or acquired firms in the world (M&A outflows), which includes intra-African cross-border M&A. The two diagrams depict similar trends. We observe that in the years 2000 and 2002, relatively fewer deals took place. However, from 2003 there is a sharp increase in M&A deals reaching a peak in 2005 in terms of number of deals and a peak in 2006/07 in the case of value of deals. The impact of 2008/2009 global financial and economic crisis is clearly evident, with a steady decline in both number and value of deals from the year 2006. After reaching a trough in 2009, in both number and value of deals, we observe a recovery from year 2010 especially with the number of deals. In Figure 3, we observe that the value of deals remains above 2009 values in years 2010 to 2012.

Figures 4 and 5 shows the sectoral distribution of cross-border M&A deals in Africa. We observe that banking, insurance and financial services sector are the most attractive for both targets and acquirors in Africa. The sectors attracts approximately a fifth of all deals by value. Mining and extraction sectors is the second most attractive sector in Africa, motivated by resource-seeking M&A deals during the commodity boom, whereas the sectors ranks

fourth for African acquirors. Personal, leisure and business services ranks second for African acquirors and sixth for African targets. Further we observe that retail and wholesale sectors are quite important for African acquirors because the sectors rank third and fifth for African acquirors but rank fifth and eighth for African targets. These observations indicate that the top sectors for Africa targets and acquirors are similar but the ranking is different. Table 5 in the Appendix shows disaggregated data for African targets in terms of deal numbers and values. We observe that South Africa is a major target in Africa followed by North African countries.

Country data for macroeconomic variables such as GDP, stock market capitalisation, value of stocks traded and domestic credit provided by financial sector are obtained from World Bank Development Indicators database. Data on geographic and cultural variables are obtained from CEPII database and data on property rights and corruption is from Heritage Foundation.

#### 4.1 TREATMENT OF ZEROS

One problem with specification of Equation 13 is that for many country pairs, the value of gross bilateral flows of M&A between countries in a given year is zero. That is, no deals occurred between country  $i$  and country  $j$ . This is a problem if gravity model is to be estimated in logarithmic form since the log of zero is undefined. Linnemann (1966) was the first to observe that half of trade data is actually zero. Therefore, estimation of gravity model with zero data for trade or investment has been problem for 50 years. However, this problem has been addressed more recently by Silva and Tenreyro (2006) and Silva and Tenreyro (2009). It is important to keep zero observations to avoid losing information on why no deals occur between countries. This might help us understand why some countries do not receive M&A at all.

As mentioned above, gravity model estimated in logarithmic form implies that zero investment flows are dropped out of the estimation which substantially limits the sample size. If we drop all zero deal values, we might underestimate the effects of explanatory variables on M&A. Therefore we have to keep these zero deal value to avoid loss of valuable information and to avoid model misspecification. One way to maintain the logarithmic specification of gravity model and still keep the zero investment flows is to add a small constant, that is, replace  $\ln M\&A$  with  $\ln(1 + M\&A)$ . This is an imperfect way but has been used extensively in the literature by Di Giovanni (2005) and Levy-Yeyati et al. (2003) among others. Substituting zero value

with a small constant value is arbitrary and does not reflect the underlying expected value. Furthermore, it does not guarantee that the estimates from gravity model will be consistent.

Silva and Tenreyro (2006) emphasize on the importance of correctly treating zero observations of the dependent variable in gravity equation and warn that heteroscedasticity can still be a problem in such equation even after including fixed effects. They recommend the use of Poisson Pseudo Maximum Likelihood (PPML) to deal with both problems of zero observations and heteroscedasticity. By nature (original form) the Poisson model is a non-linear model, which takes exponential form. Therefore, if we have the dependent variable as the level of M&A, we do not have to take the log of zero, but we can linearize the right-hand side of the model by taking logarithms where necessary. This gives us a linear-log model, which enables us to keep zero observations of the dependent variable, but still log explanatory variables. The Poisson model has been employed in levels of trade data, when estimation of non-linear form of gravity model is done. However, the traditional Poisson estimator has convergence issues which have been addressed by the use of PPML.

PPML has been recommended by Silva and Tenreyro (2010a) as a robust approach especially in the presence of heteroscedasticity which makes OLS estimators biased and inconsistent. Silva and Tenreyro (2010a) show that PPML gives consistent estimates of the original non-linear model. Even though Poisson is used for count data, PPML does not require the data to be distributed as Poisson, and so can be applied to non-linear models such as gravity (Bacchetta et al., 2012). The estimator has been applied in gravity equations by Silva and Tenreyro (2010b) to study the effects of currency unions.

Poisson estimator has other desirable properties. It is consistent in the presence of fixed effects which can be included as dummy variables. Bacchetta et al. (2012) argue that this is an unusual property of nonlinear maximum likelihood estimators, which usually have poorly understood properties in the presence of fixed effects. Gravity models which are consistent with theory require inclusion of fixed effects, hence this property of the Poisson estimator becomes quite important. The other desirable property of the Poisson estimator is that it naturally includes zero observations of trade or investment. Most other estimators do not allow this. For instance, when OLS method is used, one has to drop zero observations because the log of zero is unknown.

## 5 EMPIRICAL RESULTS AND DISCUSSION

As shown in Table 2 column 1, the traditional gravity variables perform very well with correct signs and statistical significance. The results suggest that economic size of both target and acquiror countries is relevant and positively related to M&A flows. The coefficients of target and acquiror GDP are above one, theory predicts GDP elasticities to be close to one. We also note that acquiror or source GDP is higher than target or host GDP as expected, because acquirors tend to come from bigger economies which are usually developed countries and prefer smaller firms as targets. We can directly interpret the coefficients of GDP to mean that 1 percentage increase in target country GDP (acquiror country GDP) will result in approximately 1.8 (2.6) percentage increase in M&A flows. Also in line with theoretical expectation is the finding of gravity effect, that geography matters.

Physical distance between the country pairs is significant and negatively related to M&A flows. Greater distance discourages cross-border M&A because of high monitoring costs as far away affiliates become expensive and difficult to supervise as shown in the theoretical model developed earlier in Section 3.3. However, distance does not capture physical distance alone but also information costs associated with cultural differences. For instance, Di Giovanni (2005) argues that the cost of investment increases with distance due to asymmetric information. The coefficient of distance is approximately -0.6 and implies that a 10 percentage increase in distance decreases bilateral M&A by 6%. Furthermore, our regression results indicate that distance tends to influence the magnitude and significance of border effect. For instance in Table 2 column 2 and 5 where both distance and contiguity are included, contiguity is insignificant and has much lower coefficient. Whereas when distance is excluded from the regression in column 4, contiguity is statistically significant. This can be explained by the finding of Disdier and Head (2008) who observes that adjacency tends to be negatively correlated with distance which may result in overestimation of distance.

Characteristics capturing cultural similarity such as common official language, common colony and former colony have a positive and significant effect on M&A flows as shown Table 2 column 2. This concurs with previous literature such as Erel et al. (2012) who find that culture matters: similar cultural features such as common official language or/and shared ethnicity reduce frictions in business transactions since participants are able to communicate easily and understand each others' business practices.

Table 2: Poisson Pseudo Maximum Likelihood Model: The Effect of Economic Intergration Agreements on Value of M&A

VARIABLES	1	2	3	4	5
lnDistance	-0.638*** (0.055)	-0.601*** (0.063)			-0.431*** (0.055)
lnGDP_target	1.836*** (0.308)	1.809*** (0.327)	1.582*** (0.312)	1.524*** (0.306)	1.626*** (0.315)
lnGDP_acquiror	2.562*** (0.325)	2.539*** (0.307)	2.361*** (0.304)	2.347*** (0.304)	2.459*** (0.309)
Comlangofficial		0.478*** (0.141)		0.556*** (0.130)	0.482*** (0.130)
Contiguity		-0.027 (0.162)		0.511*** (0.151)	0.056 (0.162)
Common colony		0.904*** (0.259)		1.265*** (0.275)	1.009*** (0.254)
Former colony		0.344*** (0.124)		0.411*** (0.124)	0.5042*** (0.126)
Economic Union			1.148*** (0.161)	0.784*** (0.195)	0.365*** (0.197)
Customs Union			2.548*** (0.319)	1.943*** (0.319)	1.5534*** (0.318)
Common Market			1.051*** (0.144)	1.287*** (0.144)	0.619*** (0.158)
Preferential Trade Area			0.875*** (0.276)	0.858*** (0.250)	0.541** (0.242)
Free Trade Area			0.792*** (0.143)	0.508*** (0.140)	0.183 (0.147)
Non-Reciprocal PTA			0.289* (0.161)	0.343** (0.147)	0.342** (0.155)
Observations	362,052	362,052	369,358	369,358	369,358
Country fixed effects	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.382	0.376	0.379	0.379	0.383

Where \*\*\* means significant at 1%, \*\* means significant at 5% \* means significant at 10%. Standard errors are in brackets.

Sharing an official language and colonial link is also related to adoption of similar legal system. Amongst the cultural variables, it seems that having been previously colonised by the same power has a bigger effect (as the coefficient is higher) in promoting M&A amongst country pairs than the other cultural variables. These cultural variables also have the expected signs and are statistically significant when we use count data, that is, the number of M&A as the dependent variable. Sharing a common border(contiguity) does not seem to matter, as the variable is not significant. However, it is noted that adjacency is affected by inclusion of distance in the regression due to high correlation. For instance, in Table 2 column 4, we find that borders(contiguity) matter, but only when we exclude distance between country pairs from the regression.

We now take a closer look at our variable of interest, the effect of economic integration on M&A. A key finding from the literature review section is that the effect of regional trade agreements depend on the level of integration within regional blocs, the kind and the extent of trade and investment provisions that have been implemented by member countries. Before we discuss findings from regional economic integrations in Africa, it is important to highlight what is to be expected from different types of economic integration agreements <sup>3</sup>. The highest level of integration is a monetary or economic union such as the European Union which allows movement of not only trade and capital but also labour and whose monetary and fiscal systems are harmonized. The lowest level of an economic integration is a non-reciprocal preferential trade agreement, where developing countries are given trade and customs concessions by developed countries, for instance, Generalised System of Preferences (GSP).

Using recently published bilateral Economic Integration Agreements(EIA) database by Kellogg Institute for International Studies, we estimate the effect of six categories of economic agreements on M&A, in order to empirically establish the kind of effect to expect from different economic agreements in general. We perform this exercise due to lack of comparable findings in relation to M&A. The results are shown in Table 2 columns 3 to 5. In general, we find that all these forms of economic integrations have a positive significant impact of M&A flows <sup>4</sup>. Customs unions rank the highest because they

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<sup>3</sup>For detailed explanation see Frankel et al. (1997)

<sup>4</sup> The integration agreements are represented by dummy variables, with 1 equal to existence of an agreement and zero otherwise

Table 3: Poisson Pseudo Maximum Likelihood Model: The Effect of RTAs on the Value of M&A

Variables	CUs	FTAs	ALL
lnDistance	-0.610*** (0.067)	-0.597*** (0.062)	-0.629*** (0.055)
lnGDPtarget	1.830*** (0.329)	1.807*** (0.327)	1.856*** (0.327)
lnGDPacquiror	2.540*** (0.438)	2.538*** (0.307)	2.5630*** (0.438)
Comlang official	0.479*** (0.141)	0.479*** (0.141)	
Contiguity	-0.027 (0.162)	-0.025 (0.162)	
Common colony	0.903*** (0.259)	0.892*** (0.259)	
Former colony	0.343*** (0.124)	0.342*** (0.124)	
BothinEAC	7.052*** (1.230)		6.614*** (1.409)
BothinSACU	1.955*** (0.644)		1.640*** (0.821)
BothinWAEMU	3.304*** (1.614)		-2.863*** (1.462)
BothinCOMESA		3.271* (0.917)	3.668*** (1.309)
BothinSADC		1.554* (0.870)	1.292 (1.141)
BothinECOWAS		10.550*** (1.387)	11.409*** (1.443)
OneinEAC	-0.270 (0.923)		-0.229 (0.921)
OneinSACU	-1.022* (0.566)		-1.030* (0.566)
OneinWAEMU	2.748*** (0.958)		-0.838 ( 1.116)
OneinCOMESA		1.420** (0.728)	1.740 ( 1.172)
OneinSADC		0.817 (0.597)	0.800 ( 1.097)
OneinECOWAS		5.001*** (1.227)	5.722*** ( 1.354)
Observations	362,052	362052	362,052
Country fixed effects	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes
Pseudo R-squared	0.376	0.376	0.381

Where \*\*\* means significant at 1%, \*\* means significant at 5% \* means significant at 10%. Standard errors are in brackets.

have the greatest impact on M&A, with a coefficient ranging from 2.5 to 1.5, whereas non-reciprocal PTAs have the lowest impact, with coefficient approximately 0.3. This finding contradicts Di Giovanni (2005) who finds customs unions(CU) and free trade agreements(FTA) to decrease cross-border M&A.

We now analyse the effect on M&A in six regional economic blocs in Africa which are at different levels integration. Firstly; we discuss the effect in two customs unions - Southern Africa Customs Union (SACU) <sup>5</sup>and East African Community (EAC)<sup>6</sup>. Second; we discuss three large groups of countries which are Free Trade Areas (FTAs)<sup>7</sup>. These include Southern African Development Community (SADC), Common Market for Eastern and Southern Africa (COMESA), Economic Community of West African States (ECOWAS). Third; we examine one monetary union which has a common currency, the CFA franc, that is, West African Economic and Monetary Union(WAEMU).

The discussion which follows refers to the two RTA variables specified in Equation 13 that is, *BothinRTA<sub>ijt</sub>* representing intra-regional exchanges and *OneinRTA<sub>ijt</sub>* which stands for inter-regional exchanges, with their results depicted in Table 3. These two dummy variables describe if both the target and acquiror countries have signed a regional trade agreement (*BothinRTA<sub>ijt</sub>* <sup>8</sup>) and as a result belong to the same regional bloc and when the target country belongs to an economic bloc but the acquiror country does not (*OneinRTA<sub>ijt</sub>* <sup>9</sup>). It is important to find out whether regional integration agreements in Africa have any effect on M&A because there have been mixed general findings elsewhere. However, the theoretical expectation is that falling trade costs within a regional bloc encourage competition and enhance cross-border M&A (Neary, 2009).

A customs union entails liberalisation of trade within the bloc and establishment of a common external tariff for non-members. Results in Columns 2 and 4 of Table 3 show that the coefficient for *BothinSACU* and *BothinEAC* have the expected positive sign and are statistically significant. This means that within these customs unions, there is significant M&A coming from

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<sup>5</sup>SACU is the oldest RTA in Africa and has a smaller common monetary union which excludes Botswana

<sup>6</sup> EAC has three main protocols: the customs union (2005), the common market (2010), and, more recently, the monetary union (2013)

<sup>7</sup>some SADC and COMESA countries overlap

<sup>8</sup>intra-regional M&A

<sup>9</sup>inter-regional M&A

member countries. This makes sense if we consider that most of the investment would come from regional hubs - South Africa and Kenya in SACU and EAC respectively. These results are similar to those of customs unions in general as depicted in Table 2. However, the magnitude of coefficient for BothinEAC is at least twice that of customs unions in general and three times that of BothinSACU. A related finding by Allard et al. (2016, p.20) using trade flows is that “cross-border exchanges within EAC are found to be five times larger than average regional trade flows within sub-Saharan Africa.” Therefore, the finding between SACU and EAC for M&A may not be peculiar. The coefficient for OneinSACU is negative and significant at 10% level, whereas OneinEAC is negative but insignificant. The negative sign suggests investment diversion from the customs unions. Coeurdacier et al. (2009) find the coefficient of extra-regional M&A flows in the EU to be insignificant in most cases and hence exclude the variable from estimations.

FTAs entail complete removal of trade barriers among members but each member remains responsible for its trade policy for non-member countries. Whereas COMESA has investment provisions for intra-regional FDI, SADC has investment provisions and initiatives for extra-regional FDI. But have these provisions born fruit? The results from these FTAs in Africa shown in Column 3 and 4 of Table 3 are mixed. On one hand, BothinSADC has a positive insignificant coefficient suggesting that the regional economic bloc does not foster M&A within bloc. This is somehow unexpected given the significant influence, in terms of trade and investment, of South Africa and Mauritius in the region and initiatives such as Southern Africa Regional Power Pool (SAPP). The result contradicts the general finding in Table 2 that free trade areas support intra-regional M&A flows. However, BothinECOWAS produces very strong effects, with the coefficient even higher than what we found with customs unions. The relatively large positive impact from ECOWAS could be attributed to an increase in cross-border private investment in ECOWAS region especially in banking, oil and entertainment. For instance, Nigerian banks have expanded into ECOWAS countries, and this is expected to further encourage intra-regional trade and investment. BothinCOMESA result is in line with theoretical expectation and the previous general finding about FTAs. With regard to M&A flows from outside the region, we observe in Table 3 column 3 and Table 4 column 3 and 4 that OneinECOWAS and OneinCOMESA have a positive and significant effect but OneinSADC is not significant and changes sign in different estimations. The results are similar when we use number of M&A as the dependent vari-

able.

In Column 2 of Table 3 we observe results for WAEMU, an economic and monetary union in West Africa which has a common currency<sup>10</sup>. Both in WAEMU and OneinWAEMU are both significant and have the right positive signs, which means that WAEMU attracts investment from both member countries and from outside the region. When all regional economic blocs are put together in one estimation, we find that the results for WAEMU change signs to negative but this is mainly due to high collinearity between WAEMU and ECOWAS, since all members of WAEMU also belong to ECOWAS.

The results for institutional factors, that is, corruption and property rights, are shown in Table 4 column 2 to 4, where we observe a positive relationship between freedom from corruption index and M&A flows. This result indicates that low level of corruption for the acquiror country is positively and significantly related to M&A activity, even though the magnitude of the coefficient is small. Since the perception index is measured on a 10 point scale, with a score of 10 indicating very little corruption and zero very corrupt government, we can therefore interpret the positive relationship to mean that low levels of corruption in the acquiror country encourage M&A flows. The result is not surprising given that most M&A deals originate from developed countries which have relatively low levels of corruption compared to developing countries. However, the result for target country show that the corruption perception index for the host country is negative though not significantly related to M&A flows.

When it comes to property rights, we observe an unexpected result, that the coefficient for both target and acquiror countries is negative and significant, which implies that M&A flows increase with weak institutional environment. Property rights are described as the ability of individuals to accumulate wealth that is secured by clear and enforceable laws. The index increases with higher levels of protection of private property. Therefore, we expect property rights index to be positively related to M&A flows, because a higher score indicates more legal protection of private property. However, our result goes against this prior expectation, suggesting that investors from good institutions also invest in countries with weak institutions.

Table 4 columns 1 to 3 show results when we control for bilateral trade. The coefficient turns out to be significant in all regressions, the positive sign

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<sup>10</sup>The other monetary union is Central African Economic and Monetary Union(CEMAC)

suggests that trade and M&A move in the same direction, hence they complement one another. This result is contrary to the prediction by standard trade theory, that a firm would rather establish a subsidiary in a foreign country in order to avoid paying tariffs. Therefore, trade and FDI are expected to be substitutes. However, our results show that trade and M&A are complements. This outcome is supported by Neary (2009) who notes that the experience of 1990s, saw both trade and FDI increasing substantially but with FDI growing much faster than trade, thus contradicting the norm that trade and FDI are substitutes. The increase in both trade and FDI in 1990s is associated with trade liberalisation <sup>11</sup>, market integration and technological change. Using different estimation methods, Di Giovanni (2005) also comes up with a similar finding, that trade and M&A are positively and significantly related, hence complement each other. The inclusion of trade flows in the model can potentially lead to endogeneity problem, due to the presence of regional integration variable as an explanatory variable.

We also control for factors related to the level of financial development, as they have been previously found to be fundamental drivers, at times mode-distinguishing determinants of FDI flows. Our result suggests that market capitalisation of acquiror country as a ratio of GDP is an important consideration for M&A flows. This result is in line with the finding of Vasconcellos and Kish (1998) that M&A are driven by market value of firms, suggesting that stock markets are important for M&A. However, we find that the value of stocks traded in acquiror country as a percentage of GDP and credit provided to private sector in acquiror country as a ratio of GDP to be insignificant. These results may be influenced by limited data in many developing countries especially Africa, which do not have established stock markets. Indeed, we observe in Table 4, that the sample size significantly diminishes due to inclusion of financial market variables.

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<sup>11</sup>Note the trade liberalisation channel discussed in section 3.1

Table 4: The Effect of RTAs, Institutions & Financial Depth on the Value of M&A

Variables	CUs	FTAs	ALL
BothinEAC	4.935*** (1.256)		4.660*** (1.382)
BothinSACU	1.720** (0.723)		1.213 (1.118)
BothinWAEMU			
BothinCOMESA		2.347* (1.240)	3.064*** (1.476)
BothinSADC		0.694 (1.252)	-0.078 (1.348)
BothinECOWAS		8.182*** (2.111)	11.324*** (2.293)
OneinEAC	-0.932 (0.970)		-0.933 (0.966)
OneinSACU	-0.946 (0.621)		-0.948 (0.621)
OneinWAEMU	0.767 (1.035)		-3.036*** ( 1.014 )
OneinCOMESA		1.690** (0.799)	2.540** (1.171 )
OneinSADC		0.180 (0.779)	-0.595 ( 1.225 )
OneinECOWAS		2.586* ( 1.482)	5.729*** (1.669)
Corruption_acq	0.026*** (0.007)	0.026*** (0.007)	0.026*** (0.007)
Corruption_tar	-0.006 (0.008)	-0.005 (0.008)	-0.006 (0.008)
Property Rights_acq	-0.025*** (0.009)	-0.025*** (0.009)	-0.025*** (0.009)
Property Rights_tar	-0.018*** (0.006)	-0.019*** (0.006)	-0.018*** (0.006)
Trade Flows	0.361*** (0.052)	0.361*** (0.052)	0.361*** (0.052)
Market Cap/GDP_acq	0.408** (0.208)	0.410** (0.208)	0.409** (0.208)
Stocks Traded/GDP_acq	-0.004 (0.110)	-0.005 (0.110)	-0.004 (0.110)
Domestic Credit_acq	0.017 (0.132)	0.017 (0.131)	0.017 (0.132)
Observations	148,509	148,574	148,509

Notes: Controls of Table 3 are included but not reported. Country dummies for acquirer and target countries and time dummies are included but not reported. Observations are clustered within country pairs. Pseudo R-squared 0.38

Where \*\*\* means significant at 1%, \*\* means significant at 5% \* means significant at 10%. Standard errors are in brackets.

## 6 CONCLUSION

This paper examines determinants of cross-border M&A flows in Africa for the period 2000 - 2014. We extract a global dataset for gross bilateral flows of completed M&A transactions using Zephyr database published by Bureau van Dijk and IBM business directory. We examine whether regional integration is beneficial to cross-border M&A in Africa. Results from a gravity model estimated using Poisson Pseudo Maximum Likelihood (PPML) suggest that economic size of both target and acquiror countries is relevant and positively related to M&A flows. Physical distance between two countries is important and negatively related to M&A flows as expected. Former colony has a bigger effect in promoting M&A than the other cultural variables.

We investigate the effect of six regional economic blocs in Africa, which are at different levels of integration, on M&A flows. We find that customs unions in particular EAC and SACU promote M&A from member countries but not from outside the region. In the case of free trade areas, we find that COMESA and ECOWAS have a positive impact on M&A from the region and from outside the region. However, SADC does not seem to encourage both intra- or extra-regional M&A. The level of corruption for the acquiror country is positively and significantly related to M&A activity suggesting that low levels of corruption in the acquiror country encourage M&A flows. Property rights for both target and acquiror countries is negative and significant, which implies that M&A flows increase with weak institutional environment. Thus investors from countries good institutions also invest in countries with weak institutions.

Findings from this study suggest that African countries need to further strengthen existing regional integration arrangements, as the case of SACU and EAC indicates, in order to benefit more from cross-border M&A amongst members and to be able to attract foreign investment from non-member countries. Results from ECOWAS and COMESA may suggest that enlarged free trade areas such as the one signed by member countries of COMESA and SADC in 2008, may be a step in the right direction, as larger regional blocs create economies of scale which might attract extra-regional M&A flows.

## Appendices

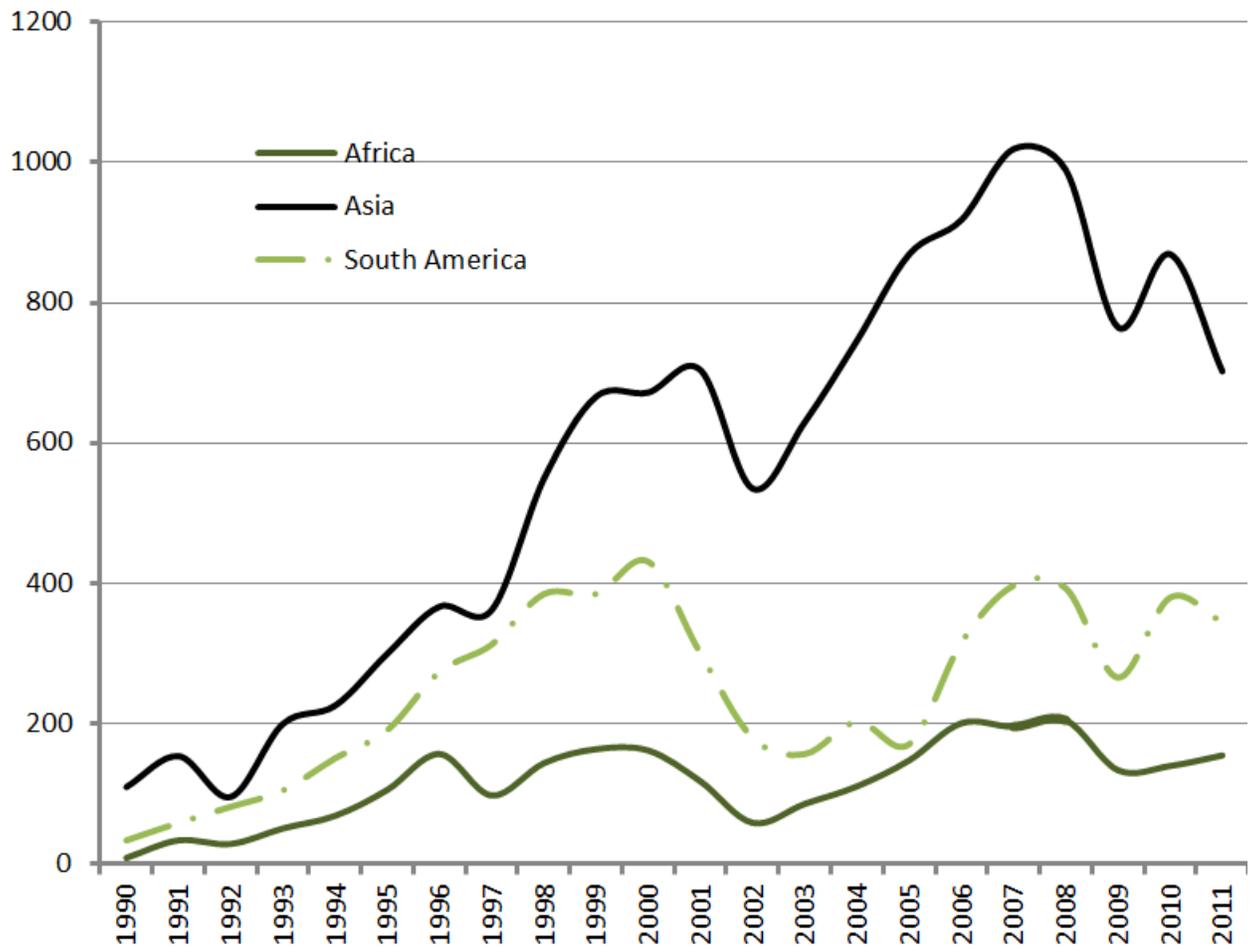


Figure 1: Cross-Border Mergers and Acquisitions Targeting Developing Countries. Number of Completed Deals 1990-2011. Compiled using Thomson Financial. Source: Wilson and Vencatachellum (2016)

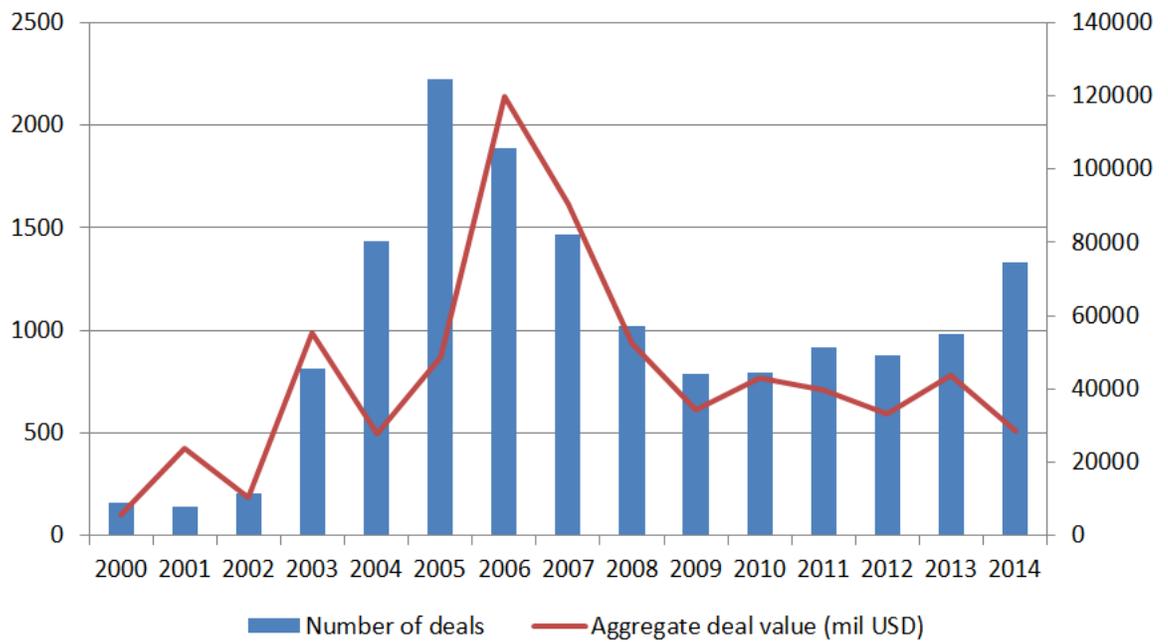


Figure 2: Completed M&A Deals with Africa as the Target 2000-2014. Compiled using Zephyr database

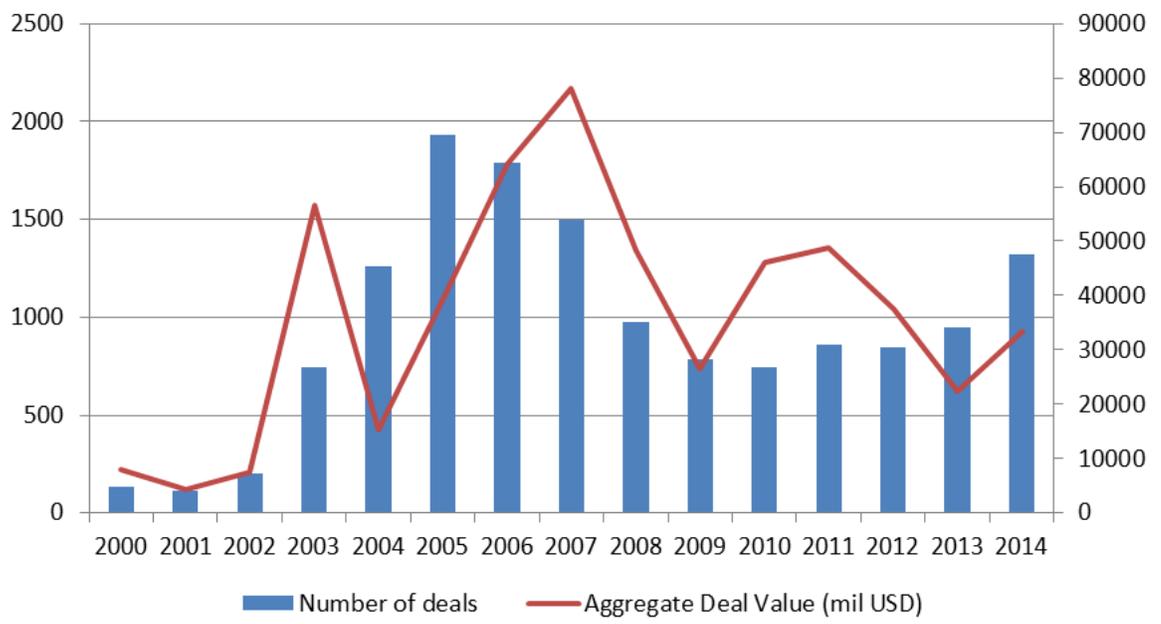


Figure 3: Completed M&A Deals with Africa as the Acquiror 2000-2014. Compiled using Zephyr database

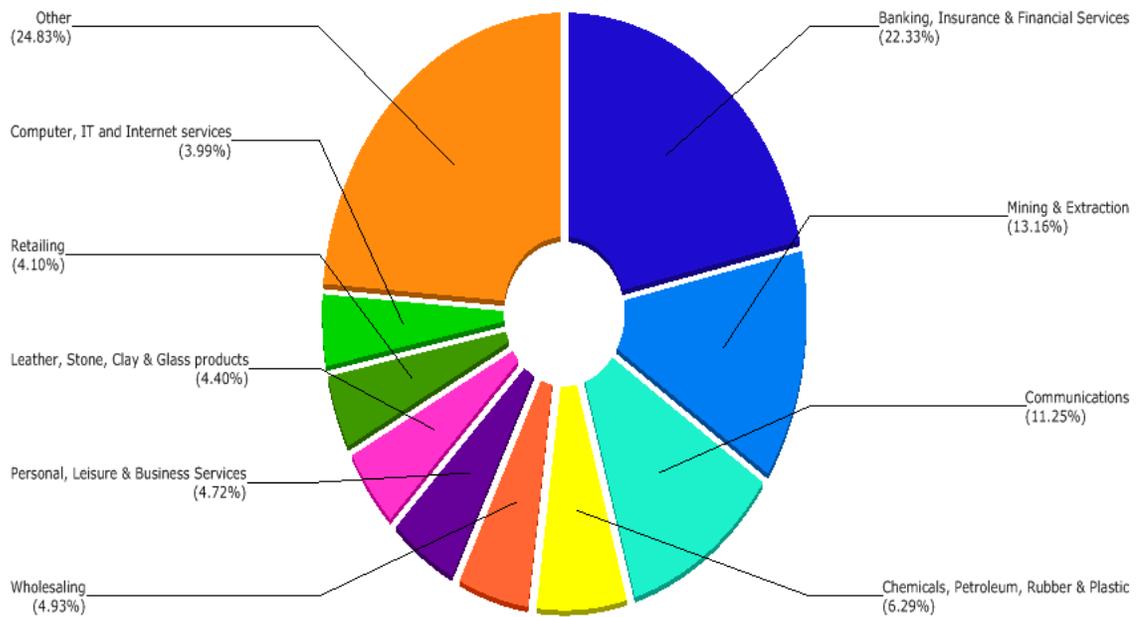


Figure 4: Sectoral Distribution by Value of Completed M&A Deals with Africa as the Target 2000-2014. Compiled using Zephyr database

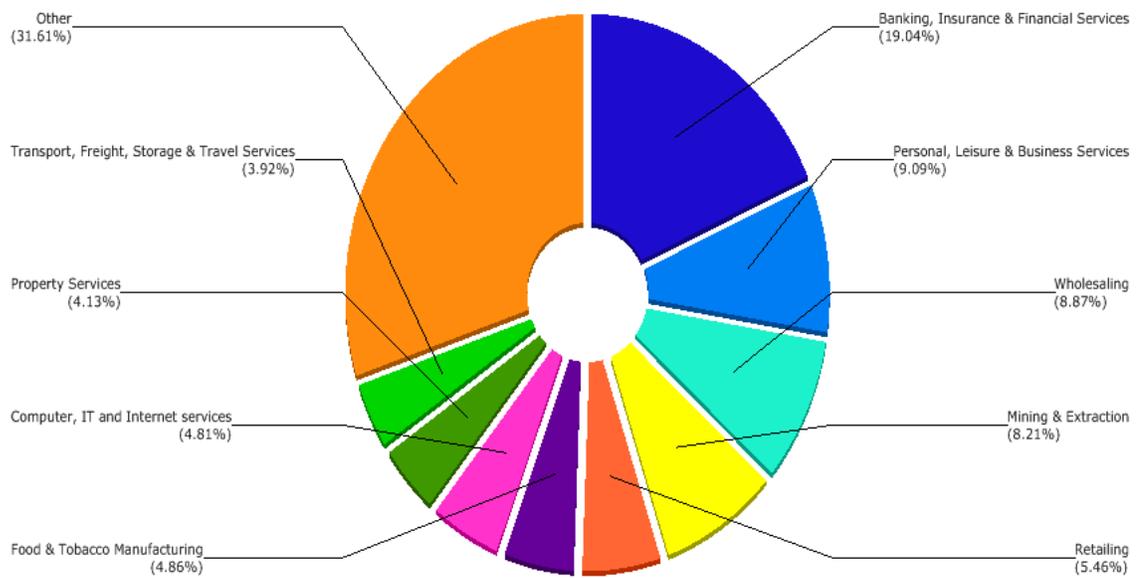


Figure 5: Sectoral Distribution by Value Completed M&A Deals with Africa as the Acquiror 2000-2014. Compiled using Zephyr database

Table 5: Number and Value of Cross-Border M&A in Africa at Country Level. Compiled using Zephyr database

Target Country	Number of deals	Number with known values	Aggregate deal value(mil USD)	% Number with known value
South Africa	8966	5873	284936	66
Egypt	2078	1611	105071	78
Nigeria	750	423	59237	56
Morocco	420	273	41092	65
Kenya	391	198	9661	51
Zimbabwe	362	196	104010	54
Mauritius	341	217	9741	64
Ghana	176	89	6712	51
Namibia	149	76	2033	51
Zambia	138	60	2490	43
Algeria	135	54	10089	40
Uganda	125	56	1642	45
Tanzania	124	56	2560	45
Mozambique	112	52	7641	46
Botswana	100	53	1609	53
Cote D'Ivoire	86	39	1375	45
Congo DRC	80	32	3087	40
Angola	62	21	2802	34
Rwanda	60	31	357	52
Libya	60	18	2674	30
Sudan	53	24	5296	45
Madagascar	38	20	1345	53
Ethiopia	37	26	671	70
Seychelles	36	27	922	75
Cameroon	36	16	782	44
Togo	35	18	2601	51
Malawi	31	16	418	52
Liberia	28	21	2956	75
Sierra Leone	27	13	1966	48
Gabon	25	16	2578	64
Swaziland	25	10	188	40
Congo	24	11	2480	46
Senegal	23	7	890	30
Guinea	22	11	2762	50
Mauritania	18	6	513	33
Mali	18	16	743	89
Burkina Faso	18	9	344	50
Cape Verde	14	6	83	43
Benin	11	7	1887	64
Chad	11	6	524	55
Burundi	11	2	107	18
Lesotho	8	5	132	63
Gambia	8	3	93	38
<b>Total</b>	<b>15,504</b>	<b>9,857</b>	<b>721,710</b>	

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