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KBA Centre for Research on Financial Markets and Policy
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The Drivers of Cross-border Banking Expansion: Evidence from East Africa

Odongo Kodongo* and Dinah Natto**

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Abstract

This paper has investigated the drivers for bank expansion abroad in East Africa. We use a Poisson regression model with number of banks going abroad as our dependent variable and several host-country and source-country explanatory variables. Our results indicate that follow-the-customer motive is a strong drive for bank expansion across East Africa. Similarly, the desire for superior returns and the need to escape intense competition in Kenya has pulled banks into foreign markets. Further, favorable regulatory environment abroad is an important factor influencing the expansion of banks into foreign markets. Surprisingly, our results suggest that economic integration is negatively related with bank expansion. Results are robust to alternative measures of foreign bank expansion and estimation procedures. We also run predictive regressions, which show that the single most important factor informing banks' future decisions to move abroad is domestic bank concentration.

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Motivation

The need for continuous innovation to attract and retain customers and to protect existing markets from new entrants whose aggressiveness and number multiplies following liberalization of the banking industry makes the banking industry operating environment very challenging (Brownbridge and Harvey, 1998) and induces banks to more aggressive search for revenues. Certain developments in Kenya's regulatory framework have also posed challenges to banking operations.

Notable recent regulatory changes include the Finance Act 2008, which placed a minimum core capital requirement of KES 1 billion on banks and the new set of prudential and risk management guidelines issued by the Central Bank of Kenya to enable banks to better manage cross-border risks and withstand emerging macroeconomic shocks. Although such regulations aim to streamline the financial system, reduce information asymmetry and avert bank failures, their enactment may threaten the survival of some banks in the short run. The banking sector's aggregate balance sheet stood at about KES 2.2 trillion (approximately USD 26 billion) in June 2012. During the period ending June 30, 2012, the sector registered KES 53.2 billion (USD 633 million) pre-tax profits, drawn mostly (62%) from fees and commissions; interest from loans and advances constituted a paltry 25% of bank profits (CBK, 2012).

Kenya's banking sector has witnessed several key developments in recent years including adoption of agency banking, increased acceptance of online banking, and reduced information asymmetry through sharing of credit information amongst institutions. The banking sector aggregate balance sheet stood at about KES 2.2 trillion (approximately USD 26 billion) in June 2012. During the period ending June 30, 2012, the sector registered KES 53.2 billion (USD 633

million) pre-tax profits, drawn mostly (62%) from fees and commissions; interest from loans and advances constituted a paltry 25% of bank profits (Central Bank of Kenya, 2012a). Another key development is the move by several banks to set up shop in neighboring countries. Central Bank of Kenya (2012b) documents that eleven Kenyan banks had extended their portfolios across Kenyan borders and had subsidiaries operating in the East African Community partner states as at end of 2012: the subsidiaries had a total of 282 branches around the East African region as of December 2012, up from 223 in December 2011. Rwanda registered the highest growth from 27 in 2011 to 52 in 2012. 125 of the foreign branches in the region were in Uganda, 70 in Tanzania, 51 in Rwanda, 31 in South Sudan and 5 in Burundi. The subsidiaries had a total of 4780 employees; total assets valued at about KES 266.5 billion (USD 3.10 billion) of which KES 125.5 billion (USD 1.46 billion) were loans to customers; total deposits amounted to KES 202.6 billion or USD 2.36 billion. Foreign subsidiaries and branches contributed about 9.8% and 2.6% respectively of Kenyan banks' total assets and profit before tax between 2007 and 2011.[1]

Whereas Kenyan banks have engaged in an aggressive expansion drive into East African countries and even beyond, banks domiciled in other East African countries have not yet made serious forays into the Kenya market. Considering that Kenya's financial markets, institutional and legal frameworks are "superior" to those of the neighboring countries (see, e.g., World Economic Forum, 2013), the aggressive expansion of Kenyan banks to the rest of East Africa seems paradoxical. The rise in international banking activity of Kenyan banks across the East African region in recent times raises interesting questions: What motivates the decision as to whether or not to expand regionally? Is the expansion by Kenyan banks to markets perceived to be relatively less sophisticated an indication that their local operations have reached "optimal" levels leaving geographical expansion as the next logical move? Is the pursuit of regional expansion driven by "push" factors emanating from intense local competition or "pull" factors arising from the allure of regional opportunities?

At the same time, banks foreign to East Africa have recently increased their presence in the East African region, typically entering through the Kenyan market. In particular, several banks with origins in the Middle East (especially the UAE, Iran and Saudi Arabia), India, South Africa and Nigeria have recently established branches in Kenya as well as in some of the countries in East Africa. This development raises a further empirical question as to why Kenyan banks would expand to other East African countries when, apparently, there is untapped potential in Kenya which banks from outside the region desire to exploit. Indeed, available statistics show that a majority of Kenya's adult population is largely unreached by financial services (see for instance Beck et al., 2010). As of 2009, about

1 Retrieved March 4, 2013 from http://www.trademarkea.com/kenya-banks-continue-their-march-in-the-eac/

31.4% of adult Kenyans did not have access to any form of financial services; of those with access, about 27.2% only had access to informal financial services (FSD, 2013). The situation improved marginally over time: by 2013, 25.4% of adult Kenyans were excluded from any form of financial services; however, only about 32.7% of adults had access to formal prudential financial services (FSD, 2013).

The above observations speak to allocation efficiency: why would domestic banks in markets, such as Kenya's, the bulk of whose populace remains unbanked seek regional markets? Additionally, Čihák and Podpiera (2005) find that international banks are generally more efficient and more active in lending than domestic banks in East Africa. This finding also raises an empirical question: Is the expansion drive of Kenyan local banks informed by their inability to compete due to inefficiency? Foreign expansion activities of banks domiciled in Eastern Africa are a relatively recent phenomenon and have attracted no empirical investigations. For these markets, therefore, our investigation of regionalization motives is seminal.

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Review literature

Economists have proposed several hypotheses explaining the internationalization of banking. The first, the trade theory (Aliber, 1976), explains internationalization of banking through the standard comparative advantage hypothesis. Thus, less efficient banks are less likely to acquire necessary capital and maintain their market shares, which might be lost to more efficient (foreign) banks. Further, banks operating in different countries are subject to different regulatory environments which determine the efficiency with which they produce their products. Thus, where the domestic regulatory environment is stifling and adversely impacts their product efficiency, banks may move to foreign countries to circumvent it.

Second is the industrial organization theory which argues that foreign direct investment occurs mainly in industries characterized by certain market structures in source and destination countries (Caves, 1971). In the banking industry, the nature of competition and market structure may be glimpsed from the spread differential, or profit margin (Aliber, 1976). Large spread differentials typically obtain in countries with high bank concentration ratios (i.e., fewer banks and less competition). Banks operating in such countries are likely to be more profitable and stand a better chance of satisfying capital needs for foreign expansion. However, the persistence of high spreads might indicate barriers to trade in money and hence provide a good inference about the relative efficiency of countries' banking sectors. Other proponents of the industrial organization school of thought attribute the multinationalization of banking to the existence of superior entrepreneurial resources, such as superior managerial and marketing technologies, commercial intelligence (Grubel, 1977), and information efficiency and screening technology (Althammer and Haselmann, 2011) in domestic markets.

Third, the international investment approach attributes the rise in multinationalization of banks to imperfections in international financial markets (Grubel, 1977). Such imperfections might be introduced by government-induced distortions, such as regulations (Buch, 2000; Goldberg and Johnson, 1990), or market-related distortions such as imperfect market structures and market failures (Cho, 1986). The second conceivable explanation draws from banks' desire to reduce variability in their earnings through international diversification (Fieleke, 1977). In both cases, location-related factors either push the bank out of their domestic market to avoid unfavorable situations or pull the bank into foreign markets to exploit favorable situations. Third, Barron and Valev (2000) hypothesize that investors' portfolio choice decisions are endogenously determined, conditioned by the cost of information. In their model, firms endowed with fewer financial resources are likely to base their investment on information inferred from the investment decisions of financially stronger firms. Thus, smaller banks wait until larger competing domestic banks have forayed into international markets then infer international investment prospects from the latter's experiences. Accordingly, less financially endowed banks internationalize with a lag.

Lastly is the eclectic theory of internationalization, which has dominated academic discourse on the growth of the multinational enterprise for several years. Through a series of articles, Dunning (1979, 1980, 1988) argues that the level of involvement in multinational activities by a firm is determined by a combination of ownership-specific, location-specific and internalization advantages of the firm prevailing at a given time.[2] Ownership-specific advantages mostly take the form of possession of intangible assets or of the advantages of common governance which are, at least for a period of time, exclusive to the firm possessing them (Dunning, 1988: 26). The more the ownership-specific advantages possessed by a firm, the greater the inducement to internalize them; and the wider the attractions of a foreign rather than a home country production base, the greater the likelihood that a firm, given the incentive to do so, will engage in international production (Dunning (1980: 9). An important feature of owner-specific advantages is a bank's ability to differentiate its banking products and its ability to borrow cheaply (Cho, 1986).

If ownership advantages exist, it will be advantageous to the firm to use them itself, through an extension of its value-added chains or adding of new ones, rather than sell or lease them (Dunning, 1988: 26). The benefits reaped in this manner are the internalization advantages. According to Casson (1979) industries which use proprietary information extensively (such as banks) are more likely to enjoy considerable advantages from internalization than those that do not. Cho (1986) points out five areas from which banks can achieve internalization advantages: availability

2 Ownership factors refer to the extent to which the firm possesses (or can acquire on more favorable terms) assets which its competitors (or potential competitors) do not possess; location-specific factors speak to how far it is profitable to exploit these assets in conjunction with the indigenous resources of foreign countries rather than those of the home country. The third factor relates to whether it is in the interest of the firm to sell or lease these assets to other firms, or make use of (i.e., internalize) them itself (Dunning, 1980).

and lower costs of intra-bank fund transfers, efficient and extensive customer contacts, transfer pricing manipulation, larger and improved networks of market information and commercial intelligence, and the potential for reduced earnings variability.

Location-specific advantages accrue from differences in endowments among countries and arise from sources that are not bank-specific, including different national regulatory frameworks, effective interest rate differentials, differential economic situations, nationality of banks, and general socio-economic influences (Cho, 1986).[3] Similarly, banks from vehicle currency countries can acquire an advantage as they do not incur risks and costs involved in foreign exchange management and have easier access to the sources of vehicle currencies, which non-vehicle currency banks may not acquire competitively (Cho, 1986).[4] Such may be the case with Kenyan banks in East Africa, where the Kenyan shilling is predominantly used in settling transactions. Banks can reap location advantages by operating at the better endowed location or, if already at that location, using it to their advantage in the less endowed location.

These theories have been, directly or indirectly, examined empirically by several studies. The overwhelming interest in the multinationalization of banks by researchers may stem from the central role played by international bank lending in gross capital flows: Buch and Pierdzioch (2001) report that international bank lending accounted for about 40 percent of gross capital flows of OECD countries in the 1990s. Interestingly, early studies, such as Fieleke (1977) suggest that the profit motive may not be an important factor informing decisions of banks to expand abroad. However, the author's evidence strongly suggests that US banks expand into foreign markets largely to serve US non-banking firms abroad (in other words banks tend to follow their customers). Goldberg and Saunders (1980) find that expansion of domestic bank activity and US trade overseas are the most important factors driving US bank activity to Britain. Other relatively important factors include the Eurodollar rate, the exchange-rate and "equitable" regulation in the destination country.

In the mid to late 1980s, many researchers proposed testable models to try to explain foreign banking activity. Cho's (1986) model identifies size of the bank, effective lending rate differentials and size of host banking market as important factors determining the growth of multinational banks. Goldberg and Johnson's (1990) model identifies several determinants of US foreign bank assets and bank branches. They test their model with pooled data of 22 countries in which US banks operate and find that more restrictive foreign regulation of US

3 For instance, where the law allows, banks can substitute internal funds transfer among subsidiaries for more risky and expensive external transfer. This may enable them to realize substantial cost savings and risk reduction. Thus, through transfer pricing manipulation, firms can take advantage of such legal flexibility to enhance their profits in low corporation tax countries (abroad), avoid some domestic taxation, and hence boost their overall profitability.

4 Examples of differential economic situations that may create potential location advantages include the level of development and the structure and size of the host economy, increased presence of other firms (through foreign direct investments, joint ventures or even branches) from the home country in the host economy and availability of better skilled personnel in the home economy.

banks negatively affect foreign bank assets growth and the establishment of foreign branches; other factors influencing foreign banking activity include foreign trade levels, population, per capita income, and levels of domestic deposits. Fisher and Molineux (1996) also find that size of the home country of the investing bank, foreign direct investment, and trade activities between the home country and the UK positively influence home countries' banking presence in London.

Using simultaneous equation estimation techniques to analyze decisions made by thirty five US banks, Dahl and Shrieves (1999) find that foreign credit extension by US banks follows the commercial expansion of US businesses abroad and is greater in countries with expanding economies. Consistently, Konopielko (1999) finds that "follow-the-client" provides the most significant motive for entry of foreign banks in transition economies of Central and Eastern Europe. Focarelli and Pozzolo (1999) show that expected growth and degree of openness of the destination market, and diversification potential and efficiency of the subject bank are the most important factors driving foreign direct investment in banking.

The roles of regulations and information costs on the international banking activities of banks have also been examined. Buch (2000a) finds strong evidence suggesting that international banking activity is encouraged by regulations (proxied by European Union's single market program and the Basel capital accord) and information costs (proxied by distance, common language, and common legal systems). Similarly, Focarelli and Pozzolo (2005) show that the degree of integration between the destination country and the home country, institutional characteristics of home and host countries, and profit opportunities, positively affect the probability that a bank will expand abroad, within the OECD. Studies in Southern Europe (Herrero and Pería, 2007) and Latin America (De Paula and Alves Jr., 2007) have also found that regulations and information costs play a significant role in informing bank expansion abroad.

A departure from the extant methodology of the time comes from Barron and Valev (2000). Arguing that smaller banks tend to follow the behavior of their relatively better endowed and informed peers, the duo hypothesizes that the strength of the propensity of small banks to follow large banks depends on the persistence of states of the host economy. Through Granger-causality tests, they fail to reject this hypothesis with data from forty host countries during 1982–1994. In a review of the prevailing literature at the time, Herrero and Simón (2006) point out that consensus appears to exist about the role of the host country institutional factors, income per capita, economic growth, volatility, size of the bank, risk sharing and follow-the-client behavior in motivating foreign banking activity. However, the role of the source country's economic cycle and the mode of internationalization (branches or subsidiaries) appear contentious.

Herrero and Simón's (2006) review sets the stage for a change in focus by later studies, many of which try to address the effect of home country factors in their empirical models. In the spirit of the new

research direction, Schoenmaker and van Laecke (2007) propose the Transnationality Index as a measure of cross-border banking activity and use it to investigate the role of home country factors on banks internationalization. They find GDP, domestic credit, concentration of banks in market, regional trade and economic integration significant in explaining banks' foreign expansion. In tandem with the change in focus, Claessens and Van Horen (2008) examine the role of institutional competitive advantage and find that for those banks which, compared to their competitors, are used to work in countries with good institutions, a relatively high institutional quality in the host country positively impacts cross-border entry, while for banks that are more familiar with working in countries with weak institutions, a relatively low institutional quality in a host country can encourage entry. This finding is interesting in the East African context where Kenyan banks, operating in a perceived better institutional quality environment, venture into, say, Tanzania, which we consider to have relatively less developed institutions and lower institutional quality.

In the emerging markets, Hryckiewicz and Kowalewski (2010) find that expected economic expansion is attractive to new bank entrants because it promises better profitability. However, unlike the literature from developed markets which largely find that foreign banks tend to follow their customers, they find that foreign bank entry may precede foreign entry by nonfinancial firms. A novel contribution of their study is the finding that legal, cultural and geographical proximity to the host country might play a key role in attracting foreign banks into the emerging markets. Another important finding of their study is that foreign banks appear to have increased their presence (through acquisitions as opposed to setting up branches) to less risky emerging markets during the recent global financial crisis. Our observation of the East African banking markets seems to confirm this: banks appear to prefer direct investment as their mode of entry into foreign markets.

For Africa, empirical study of the motives for bank expansion abroad is gradually gaining traction. In a review, Lukonga and Chung (2010) suggest that expansion abroad, particularly among South African and Nigerian banks, might have been propelled by the need to finance an expanding corporate clientele, liberalization and diminishing domestic opportunities. Other factors include the significant increase in minimum capital, the emerging ideology of becoming global players, and limited opportunities in domestic markets. The review also points out that a majority of foreign banking operations are in the form of subsidiaries, with parent banks holding stakes as high as 75-100 percent; there are very few foreign branches. While the factors mentioned by Lukonga and Chung (2010) may also apply to many African countries, Čihák and Podpiera (2005) demonstrate that the banking system remain inefficient and perform only a limited intermediation role in spite of the reform efforts put in place by governments in Kenya and other countries in the East African region. This raises the question as to whether the move to regionalize their operations is economically rational and/or justifiable. Our study provides empirical answers to this and several questions earlier posed.

Empirical strategy

The eclectic theory of the internationalization suggests several factors that may inform the entry of banks into foreign countries. To investigate the role of these factors, we gather secondary data from different sources (see section 3.4) which we subjected to quantitative empirical analysis. Central Bank of Kenya (2012) indicates that ten Kenyan banks have operations in regional economies across Kenya's borders: only one of the ten banks operates in Burundi while two banks operate in Southern Sudan. The bulk of the ten banks have operations in Rwanda, Tanzania and Uganda.

Therefore, this study concentrates on the latter three countries. Quantitative analysis examines the nexus between the number of Kenyan banks entering the three East African countries and several hypothesized factors. Following Hryckiewicz and Kowalewski (2010), we estimate a Poisson regression:

$$P(Y_{it}=y) = \frac{e^{\lambda it} \times \lambda_{it}^{y_{it}}}{y_{it}!} \quad (1)$$

where i is the index of host countries (Rwanda, Tanzania and Uganda), t represents time in years, and y is the number of banks entering into host country i from Kenya at time t. Consistent with the assumptions of the Poisson model, the λ_{it}s are specified as log-linearly dependent on the explanatory variables:

$$\ln\lambda_{it} = \beta_0 + \beta_1 H_t + \beta_2 K_{it} + \beta_3 D_{it} + \beta_4 Z_i + \varepsilon_{it} \quad (2)$$

where H_t is the vector of determinants specific to the home country (Kenya) at time t, K_{it} is the vector of variables that speak to the relationship between Kenya and the destination country i at time

t, and D_{it} is the vector of determinants specific to destination country i at time t, Z_i is the vector of time-invariant destination country-specific factors.

Our non-linear model specification is suitable for several reasons. First, although empirical investigations of foreign banking activities typically assume linearity of variables and employ ordinary least squares estimation technique, the dependent variable, in our case, is a count variable and using OLS estimation would lead to inconsistent results (Maddala, 1985). Second, as Greene (2000) points out, usage of non-linear techniques allows for the direct control of discrete nature of the dependent variable and to improve on the least squares approach. Finally, the Poisson regression provides the most consistent estimates when the dependent variable is of a discrete or non-categorical nature (Maddala, 1985).

3.1 Factors informing cross-border bank expansion

The literature review and the analytical framework have proposed several possible determinants of cross-border banking activities of commercial banks. Below, we recapitulate the key determinants and specify the variables that are used to capture them in the study.

3.1.1 Home country factors

Foreign direct investment (FDI)

Many studies have documented the role of "follow-the-customers" motive in influencing banks' foreign activities (Goldberg and Saunders, 1981; Goldberg and Johnson, 1990; Konopielko, 1999). Follow-the-customer is a term that has been used to refer to the tendency of banks to be drawn to foreign countries to service the needs of their domestic customers doing business abroad. The variable typically used to capture this tendency is the net foreign direct investment of non-financial firms in destination countries. We are unable to get a breakdown of Kenya's foreign direct investments by sectors. Therefore, our study uses total FDI. However, to act as a good proxy for testing follow-the-client hypothesis, we use only outgoing FDI. Since larger net FDI of domestic banks potentially leads to greater foreign business for banks, a positive coefficient is anticipated for this variable.

Domestic market opportunities

The size and level of development of a country is a determinant of available opportunities in that market. The size of an economy is typically measured through the country's Gross Domestic Product (GDP). However, the size of the market is a function of the country's population. This study assumes that banks have a home bias and would not venture abroad if they can efficiently and effectively make use of the domestic market to realize a rate of return sufficient to maximize their owners' wealth. Combining the two measures of size, this study uses the GDP per capita as the proxy for domestic market development.[5] A negative coefficient is anticipated.

Depth of the domestic banking system

Focarelli and Pozzolo (2001) argue that deeper domestic banking markets expand local business

5 Other studies in the literature that have used this proxy are Buch (2000b) and Schoenmaker & van Laecke (2007).

opportunities and banks only need to offer more innovative products to fully exploit profit opportunities at home rather than expanding abroad. In this case, depth of the domestic banking market is negatively related to internationalization. However, according to Schoenmaker and van Laecke (2007), the depth of the banking system provides banks with a steady income at home, and enables them to finance their foreign activities. In this regard therefore, there should be a positive relationship between depth of the domestic banking system and internationalization. Thus, the sign of the depth coefficient must be explained contextually. Consistent with Schoenmaker and van Laecke (2007), this study measures banking market depth as domestic credit to the private sector as a proportion of the GDP.

Concentration of and competition in the banking system

As Schoenmaker and van Laecke (2007) observes, a high concentration of firms in any industry limits the scope for expansion and growth in market share. Opportunities for market share growth may serve as a proxy for the level of competition in the industry. Consequently, many measures of bank concentration also serve as measures of the level of competition in the banking industry. A good measure that captures both concentration and competition is the Herfindahl-Hirschman index (HHI)[6] computed as

$$HHI = \sum_{j=1}^{n} S_j^2 \qquad (3)$$

where S_j is the size, as measured by the percentage market share of bank j.[7] Increases in the HH index imply a decline in competition, with a value of unity, the highest possible, implying the existence of a monopoly. Thus, the lower this index, the higher is the chance that banks in the industry will look for expansion and growth opportunities in external markets. The coefficient for this variable is expected to be negative.

3.1.2 Time-varying host country factors

Profit opportunities

Availability of profit opportunities in the destination country may motivate the movements of banks into that country. The literature has linked profit opportunities to a number of indicators including country risk (Fisher and Molyneux, 1996), income per capita (Goldberg and Johnson 1990), total income (Buch, 2000b) and size of the banking sector (Grosse and Goldberg, 1991). However, none of these studies provide any empirical evidence linking international bank activity to any of these variables. In this study, the host country's gross national income (GNI) per capita and inflation are used as the measures of profit opportunities. A positive relationship is expected between bank internationalization and destination country profit opportunities.

6 Bikker and Haaf (2002) reviews several measures of bank concentration proposed in the literature.

7 The index ranges between 1/n and 1, reaching its lowest value, the reciprocal of the number of banks, when all the banks in the market are of equal size, and reaching unity in case of a monopoly (Bikker and Haaf, 2002).

Foreign trade

The more a country engages in foreign trade, the more her residents are likely to require banking services. The nature of international trade activities is such that at least two banks are usually involved, at least one from each of the two countries, to facilitate both financing and payments. Banks may want to take advantage of this situation by having some of their activities in the foreign country so as to be able to handle both sides of the transaction. We measure foreign trade as the proportion of bilateral imports and exports between Kenya and the host countries to Kenya's GDP. A positive coefficient is expected.

3.1.3 Time-invariant host country factors

Regulatory framework of the destination country

Several countries are now aligning their financial sector regulatory practices with the several recommendations made by the Basel committee. However, in many countries, the Basel requirements are being implemented gradually due to capacity constraints. In Rwanda, the Banking Act 2008 gives power to the Central Bank to grant license to a foreign bank wishing to exercise banking activity through the intermediary of a branch office. However, the enabling environment is centered on prudential regulations issued by the bank of Rwanda between 2009 and 2011. Among them is Regulation No 10/2009, issued in 2009, on commercial banks' liquidity management, which amends and sets out the parameters for liquidity regulation and supervision. In particular, the regulation focuses on the maintenance of solvability ratios, which must be equal to a minimum of 10% (Johnson et al., 2009). Nonetheless, Sanya et al. (2012) find the regulations inadequate in addressing liquidity concerns in Rwanda's financial sector. The capital adequacy regulation was issued in 2010 and requires all commercial banks to maintain not less than 5 billion Rwandese Francs (RF), or approximately USD 7.9 million.

Uganda, following the Financial Institutions Act of 2004, introduced several regulatory measures in 2005 covering, among others, foreign exchange, insider lending limits, credit reference and credit classification, liquidity, ownership control and corporate governance. The statutory instruments supplement No. 31 of November 2010 amends the capital adequacy regulation of 2005 and imposes a minimum capital requirement for all financial institutions of, 25 billion Ugandan Shillings (USH), or approximately $9.4 million. The regulations give the Bank of Uganda (Central Bank) the mandate to license, supervise and discipline the financial institutions licensed under the Act (Bategeka and Okumu, 2010). The regulations are equally applied to foreign and domestic banks and non-bank financial institutions.[8]

8 For regional banks, the Bank of Uganda cooperates with the home and host country supervisors in the process of licensing; for foreign non-regional banks, there is no cooperation between the home and host country supervisors in the process of licensing and supervision (Bategeka and Okumu, 2010).

Since 2005, Bank of Uganda conducts full on-site examination of all commercial banks using a risk-based supervision methodology, which emphasizes prompt corrective actions on any discovered shortfalls on the implementation of regulatory requirements.[9]

For Tanzania, the Banking and Financial Institutions Act, enacted in 1991, was revised in 2006 to enable full compliance with Basel II (Bank of Tanzania, 2008). It gives the Bank of Tanzania (the Central Bank) oversight controls and provides the legal framework for many of the regulations issued to encourage prudent banking activities. Buoyed by the new legislation, the government, in 2008, reviewed a majority of the existing, and issued additional, prudential regulations to incorporate changes brought about by this legislation and market developments. The reviewed regulations touch on licensing, credit concentration and foreign exchange exposure limits, capital adequacy, management of risky assets, liquidity management, and the prompt corrective action guidelines, among others. The minimum capital requirement was raised from Tanzanian Shillings (TSH) 5 billion ($3.08 million) to TSH 15 billion ($9.2 million) in 2010. Licensing rules allow for the entry of foreign banks, which generally serve the wholesale loans market and are active in the treasury market, which they use to compensate for the higher cost of funding that they face (Christie and Campbell, 2009).

For each country, however, we use the regulatory quality indices from the World Governance Indices developed by the World Bank. A positive coefficient sign is expected.

3.1.4 Relationship Factors

Economic integration

Countries within the Eastern Africa region have made important strides towards an economic integration through the East African Community (EAC). In spite of these developments, IMF (2009) tests for the capital markets integration of these economies using the law of one price and finds results suggestive of the view that the markets are not properly integrated. Policy divergences and institutional and structural weaknesses are invoked to explain the findings. However, the results may also reflect the fact that the IMF study was conducted before the EAC customs union and common markets protocols took effect. The new EAC was formally established in November 1999 when the heads of state of three countries, Kenya, Tanzania and Uganda signed a treaty to that effect. The treaty came into force in July 2000 upon its ratification.[10] Subsequently, Rwanda, Burundi and Southern Sudan were admitted into the community. In order to realize benefits of a large market, the EAC established a customs union in March 2004 and a common market in November 2009. This study will seek to establish whether these recent developments

9 See additional information at the Bank of Uganda website: http://www.bou.or.ug/bou/supervision/overview.html

10 Parts of this information was accessed March 12, 2013 from the East African Community website: http://www.eac.int/index.php?option=com_content&view=article&id=44&Itemid=54

may explain the increased cross-border expansion of Kenyan banks. A dummy that takes the value of "0" before 2005 (the year after customs union year) and "1" from 2005 will capture the integration variable. Since increased integration eases cross-border capital flows, the variable should have a positive coefficient.

Interest rate differential

The role of interest rates in international banking activities has been investigated by several studies, which have defined the variable differently. For instance, Goldberg and Saunders (1981) define the interest rate variable as the difference between the quarterly average federal funds rate and the three-month Eurodollar rate whereas Buch (2000b) uses the deposit rate. For this study, the focus will be on the spread between lending rates and deposit rates. For each country, the deposit rate is defined as the average of the quarterly deposit rates; the lending rate is defined similarly. The interest rate spread differential is then defined as

$$IRD = \ln(l) - \ln(l^*) \quad (4)$$

where l is the average interest rate spread in an economy and an asterisk represents foreign. We argue that, everything constant, banks will increase their presence in countries in which the potential spread income is greater. Thus, the coefficient for this variable should be negative.

3.2 Data

The data for quantitative analysis are procured from different sources. Foreign direct investment is from the World Trade Organization; the market shares of Kenyan banks are from the Central Bank of Kenya; interest rates, GDP, GNI, domestic credit and inflation rates of different countries are procured from the World Bank's World Development Indicators. All variables are observed annually. The number of branches/subsidiaries of banks in foreign countries is obtained from the websites of various banks. Primary data are sourced from the banks themselves through a questionnaire. The proposed study takes the view that liberalization measures put in place by governments take time to be reflected in the decisions of firms. Therefore, although capital controls had been effectively abolished in most of the East African countries by early 2000s, businesses decisions informed by such measures can only be observed with a time lag, explained both by availability of capital and by continued perceptions of higher sovereign risk. A time lag of ten years is considered reasonable. Thus, this study covers the years 2000 through 2012. Summary statistics are presented in Table 1.

Several facts can be gleaned from the summary statistics. First, Kenya's outgoing foreign direct investment (KFDI) constitutes only approximately 0.6 percent of GDP; this initially gives the impression that the relative importance of foreign direct investments as an important investment signal to (bank) decision makers may be negligible. Second, the average bank concentration index (KCON) is very low with

positive skewness: this suggests intense competition in Kenya's banking sector.[11] Potentially, this result could imply that banks may be crossing the borders to be among the first to tap into foreign markets so as to build a niche in those markets ahead of their domestic rivals. The spread differential results seem to suggest that the prospects to improve the bottom line through interest spreads are better in Kenya than in both Rwanda and Tanzania (both RSDF and TSDF are positive) but better in Uganda than in Kenya (negative USDF). One expects that banks would find it attractive to cross into Uganda from Kenya to take advantage of this higher income potential. The skewness and kurtosis statistics show that a majority of the variables cannot be described by the normal distribution. If the correct econometric specification and/or estimation procedure is not identified, this might cause the error terms also not to be normally distributed.

11 The ratio equals unity in a monopolistic market and tends to zero as the number of banks increase and the relative market shares of each bank in the market declines.

Table 1: Summary statistics

	Mean	Std. Dev.	Kurtosis	Skewness	Minimum	Maximum
KFDI	0.603	0.684	7.867	2.619	0.041	2.677
KGDP	613.120	179.406	-1.939	0.002	398.410	862.228
KCON	0.077	0.011	-1.612	0.096	0.063	0.092
KDEP	29.131	4.467	0.018	1.104	24.600	38.150
RINF	7.928	6.942	1.063	0.188	-5.308	22.686
RGNI	357.973	158.259	-1.505	0.391	186.642	619.927
RFTR	0.412	0.072	-0.584	-0.080	0.294	0.531
RREG	-0.580	0.310	-1.104	0.249	-1.051	-0.125
RSDF	0.184	0.371	0.070	-0.437	-0.599	0.727
TINF	7.787	1.808	0.023	0.554	5.283	11.496
TGNI	418.354	103.501	-1.221	0.487	306.272	608.854
TFTR	1.552	0.191	-0.487	0.280	1.242	1.920
TREG	-0.437	0.074	2.962	1.135	-0.558	-0.250
TSDF	0.064	0.173	0.133	-0.569	-0.299	0.315
UINF	7.887	7.177	0.487	0.505	-3.170	23.178

Table 1: Summary statistics

	Mean	Std. Dev.	Kurtosis	Skewness	Minimum	Maximum
UGNI	365.570	115.405	-1.652	0.246	232.800	547.006
UFTR	2.561	0.420	-1.011	-0.321	1.774	3.094
UREG	-0.103	0.104	-1.348	0.442	-0.230	0.079
USDF	-0.104	0.175	1.375	1.162	-0.330	0.313

The table uses annual data for 2000-2012. K, R, T and U in-front of each variable denotes Kenya, Rwanda, Tanzania and Uganda respectively.FDI is outgoing foreign direct investment; GDP is gross domestic product per capita; CON is bank concentration; DEP is bank market depth measured as domestic credit to the private sector as a proportion of GDP; INF is inflation measured as GDP deflator; GNI is gross national income per capita; FTR is foreign trade measured as imports plus exports as a proportion of GDP; REG is regulations: SDF is spread differential.

Table 2 presents the correlation matrix for the study's explanatory variables. Correlation coefficients are very high in general. Thus, using these data in their current form may present serious problems of multicollinearity. Econometric theory suggests that multicollinearity can be reduced by eliminating from analysis one or more highly-correlated variables or by combining two or more variables into a single matrix or using ridge regression as a suitable modification to the OLS procedure. However, Greene (2000) shows that these approaches may create more econometric problems than they solve. For instance, elimination of variables or combining them causes omission of information which may result in biased coefficient estimates.

Table 2: Correlation matrix

	KFDI	KGDP	KCOM	KDEP	iINF	iGNI	iFTR	iREG	iSDF
KGDP	0.31	1.00							
KCON	-0.31	-0.96	1.00						
KDEP	0.16	0.79	-0.80	1.00					
RINF	0.13	0.12	-0.05	-0.11	1.00				
RGNI	0.22	0.97	-0.96	0.89	0.03	1.00			
RFTR	-0.30	-0.01	0.06	0.18	0.41	0.06	1.00		
RREG	0.12	0.87	-0.84	0.84	0.03	0.92	0.12	1.00	

Table 2: Correlation matrix

	KFDI	KGDP	KCOM	KDEP	iINF	iGNI	iFTR	iREG	iSDF
RSDF	-0.20	-0.70	0.68	-0.25	-0.32	-0.60	-0.02	-0.49	1.00
TINF	0.40	0.61	-0.47	0.63	1.00				
TGNI	0.18	0.96	-0.92	0.87	0.68	1.00			
TFTR	0.18	0.85	-0.81	0.79	0.58	0.87	1.00		
TREG	0.28	-0.17	-0.01	-0.08	-0.27	-0.25	-0.43	1.00	
TSDF	0.26	0.74	-0.63	0.67	0.72	0.77	0.54	-0.21	1.00
UINF	0.14	0.40	-0.41	0.43	1.00				
UGNI	0.22	0.98	-0.95	0.85	0.45	1.00			
UFTR	-0.30	-0.58	0.56	-0.18	-0.34	-0.51	1.00		
UREG	-0.19	-0.81	0.76	-0.39	-0.06	-0.74	0.58	1.00	
USDF	-0.04	-0.37	0.32	-0.12	0.14	-0.41	0.27	0.56	1.00

The table presents correlation coefficients for explanatory variables. i = Rwanda (R), Tanzania (T), Uganda (U) as the case may be. FDI is outgoing foreign direct investment as a proportion of GDP; GDP is gross domestic product per capita; CON is bank concentration; DEP is market depth measured as domestic credit to the private sector as a proportion of GDP; INF is inflation proxied by GDP deflator; GNI is gross national income per capita; FTR is foreign trade: imports plus exports as a proportion of GDP; REG is regulations: SDF is spread differential.

To deal with the multicollinearity problem, we employ an orthogonalization procedure proposed in Jorion (1991): we run ordinary least squares regressions on all the data (one foreign country at a time with Kenya) and use the residuals from the regression in parameter estimation. That is, for each country, i, we first run a regression of iSDF on all the variables to it's left (in the correlation matrix) – residuals from that regression represent the component of iSDF that is not explained by the variables to its left. Next we run a regression of iREG on the variables to its left, and so on. The variable KFDI is not subjected to the orthogonalization procedure because all variables to its right post-regressions are residuals. The resulting values have zero correlations with each other and possess the time series properties of the original variables. Thus, the decomposed variables (residuals) are consistent with the underlying operations of the economy and statistical inferences drawn on the basis of their estimates are as valid as inferences drawn from estimates from the original variables.

04 FOUR

Empirical Results

4.1 Results of baseline tests

Results from empirical estimations are presented in Table 3.[12] The results are presented separately for each of the three foreign countries. The table provides results for the possible factors that may drive Kenyan banks to invest in foreign countries in the East African region. The specification includes economic variables that speak to the domestic country's (Kenya) market conditions, those relating to the foreign country, variables to capture the relationships between Kenya and each of the three foreign countries, and a dummy variable to capture economic integration. Standard errors are robust to heteroskedasticity. As a robustness check, we also run the regressions with standard errors clustered around the integration dummy. Results are similar except that for Tanzania, the coefficient for GNI per capita (currently not different from zero statistically) becomes significant at the 1% level (z-statistic: – 3.00).

We begin our analysis with the controversial debate as to whether or not banks follow their customers abroad. We contribute to this debate through two explanatory variables. First is the domestic country (Kenya) outgoing FDI. For each of the foreign countries, this variable is positive and significant at 1%. These results lend themselves to the inference that follow-the-client abroad is a potential motive for the aggressive regional expansion witnessed recently among Kenyan banks. However, the FDI variable as defined for this analysis has some shortcomings. First, it is the total foreign direct investment outflows to all countries of the world – not just the three east African countries. Second, a more appropriate measure would have been the FDI outflows of non-financial institutions; however, since the Kenya National Bureau of Statistics does not prepare a sectoral breakdown of FDI flows, we are unable to conduct a more precise analysis based on this variable. Interpreting the FDI output on the context of "follow-the-customer" motive is therefore a little difficult. We may surmise however, that an increment in foreign investments in general includes an increment in foreign investments by banks!

12 As a test of the robustness of the Jorion (1991) orthogonalization procedure (additional to other robustness checks presented in Section 4.2), we also run the Poisson regression with the explanatory variables in their unadjusted form. Results are essentially similar to those in Table 4. However, diagnostic tests for residual collinearity show very high Variance Inflation Factors, an indication of substantial multicollinearity. And, for two countries, Rwanda and Tanzania, residuals fail the normality test. Results are not presented here but are available from the authors upon request.

Table 3: Poisson regression results

Dependent variable – number of Kenyan banks entering foreign markets each year

Country	Rwanda	Tanzania	Uganda
Constant	2.68 *** (2.39)	5.00 ** (2.47)	11.00 *** (4.61)
Domestic FDI outflows	17.83 *** (14.36)	3.97 *** (4.81)	8.84 *** (10.02)
Domestic GDP per capita	118.38 *** (14.73)	28.88 *** (4.09)	88.66 *** (8.85)
Domestic bank concentration	-2226 *** (-10.70)	-474.87 *** (5.43)	-801.42 *** (18.62)
Domestic market depth	-159.65 *** (-15.45)	-37.02 *** (-4.17)	-128.87 *** (-9.43)
Foreign inflation	2.20 *** (20.42)	0.38 ** (2.24)	0.89 *** (7.60)
Foreign GNI per capita	-199.19 *** (-20.75)	-0.93 (-0.24)	-67.58 *** (-17.04)
Foreign trade	50.46 *** (23.86)	8.82 *** (3.37)	14.39 *** (8.64)
Foreign Regulation	60.46 *** (10.17)	47.94 *** (5.68)	83.83 *** (10.39)
Spread differential	-9.74 *** (-10.27)	-18.82 *** (-2.78)	16.53 *** (2.40)
Economic integration	-41.84 *** (-11.01)	-13.94 *** (-3.28)	-37.50 *** (-7.03)
ARCH(1) test (LM)	1.23 [0.27]	0.33 [0.57]	0.35 [0.56]
Residual normality test (χ^2)	1.09 [0.52]	1.77 [0.45]	3.66 [0.16]

***, **, and * represent statistical significance at 1% and 5% levels respectively. The table provides coefficients of the Poisson regression with the number of subsidiaries being established abroad as the dependent variable. The numbers in brackets are the z-values. Standard errors are robust to heteroskedasticity and autocorrelation. P-values of diagnostic statistics are in square braces.

In light of these FDI setbacks, we use a second variable to test the follow-the-client hypothesis – the foreign trade variable. We obtain imports and exports data from the World Trade Organization website. Kenya is one of the largest exporters to each of the three countries and one of the largest importers from Uganda and Tanzania, but not from Rwanda. For that reason, we were unable to obtain the relevant imports data for Kenya-Rwanda. Thus, our trade variable is constructed as the sum of bilateral imports and exports as a percentage of GDP for Uganda and Tanzania and bilateral exports to GDP for Rwanda. For 2012, we only have data for January through June (from the websites of the statistics bureaus of the respective countries): we estimate the annual data by doubling the sum of the six-month data. Our results speak directly to follow-the-customer hypothesis. The coefficients are all positive and significant; suggesting that Kenyan banks are motivated in their expansion activities by the need to follow their customers abroad. In this regard, our results contrast those of Hryckiewicz and Kowalewski (2010) who report that this motive is not very important in developing economies.

The next question that arises is whether the profit motive is an important driver of bank expansion. The variable that measures the profit motive directly is the spread differential. The coefficients are all significant suggesting that the spread differential informs foreign branching of commercial banks in Kenya. For Uganda, whose differential with Kenya was largely positive (see Table 1), the regression coefficient is positive (Table 3) implying that the pursuit for current profits appear to motivate Kenyan banks to open branches/subsidiaries in Uganda. For Rwanda and Tanzania (whose spread differential with Kenya was negative), the regression coefficient is predictably negative.

Perhaps profit opportunities abroad rather than the desire to earn current profits would better explain foreign bank expansion. To test this conjecture, we use foreign GNI per capita: higher income may be associated with higher demand for banking and financial services. All the coefficients are surprisingly negative; significant for Rwanda and Uganda but insignificant for Tanzania: the negative result is inconsistent with expectations. However, as Demirguc-Kunt and Huizinga (1999) argue, high inflation is consistent with better profitability prospects in developing countries. Consistent with this explanation, our inflation variable shows a significant and positive coefficient for all countries, suggesting that future profit opportunities play a key role in informing banks' foreign entry. The GDP deflator, which we use in our analysis, is a better measure of inflation than other measures such as the consumer price index (CPI) because the GDP deflator is based on a basket of goods that is allowed to change over time in response to people's consumption and investment preferences as prices change in the economy. As such, it is we argue that the GDP deflator is a better indicator of expected profit opportunities than the GNI, which also includes government spending.

As expected, the coefficients for bank concentration are negative and significant. The reason for this is that a low concentration of banks (several banks operating in an economy) in the domestic market implies more intense competition for banks. The reduced profit and growth potential arising from intense domestic competition drives banks to foreign markets in search of higher growth and profits. The domestic bank depth coefficients are also negative and significant, indicating that increased market depth does not necessarily cause value addition to banks. That is, the deepening of Kenya's financial sector may be the result of more banks entering the arena, triggering existing banks to seek value addition in external markets.

The foreign regulation variable "captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development" (Kaufman et al., 2010). The coefficients are all positive and significant: thus, better perceptions of regulatory quality encourage banks to enter foreign countries.

Ordinarily, economic integration should enhance the ease of doing business and is therefore expected to be positively related to cross-border trade and investment flows. In the East African region, our results surprisingly suggest a strong and negative association between bank expansion abroad and economic integration! We interpret the negative association to mean that the desire to create a market niche ahead of competition and hence the chance to improve shareholder value through greater profitability requires only a good regulatory environment and economic integration is not a critical imperative. Indeed, anecdotal evidence we gathered shows that Kenyan banks started expanding into the rest of East Africa before the East African community treaty was signed. Similarly, banks from the developed economies have penetrated the less developed markets even in the absence of full integration between the source country and destination country economies.

Diagnostic statistics show that the model performs well. For each of the three equations estimated, the LM statistic fails to reject the hypothesis that there is no ARCH (autoregressive conditional heteroskedasticity) in the error term. Similarly, we cannot reject the hypothesis that the error terms are normally distributed.

4.2 Additional tests

a) Assets of foreign subsidiaries

In this section, we test the applicability of the hypothesized factors in explaining the stock (accumulation) of assets of Kenyan banks in the three east African foreign countries. Since the data on foreign direct investments in Kenya is not available on a disaggregated basis, we surrogate this variable by subtracting total assets in unconsolidated balance sheet from total assets in the consolidated balance sheet. We obtain these data from Bank scope. The consolidated financial statements include assets from

other domestic subsidiaries of these banks. However, the Appendix reveals that, except for two banks which own both domestic and foreign subsidiaries, the rest of the banks only own, partially or fully, foreign subsidiaries. Assets obtained through this procedure therefore reasonably represent foreign asset interests of Kenyan banks. Using these assets as the dependent variable (y), we run the following regression, estimated through the ordinary least squares procedure:

$$y_{it} = \beta_0 + \beta_1 H_t + \beta_2 K_{it} + \beta_3 D_{it} + \beta_4 Z_i + \varepsilon_{it} \qquad (7)$$

As before, the explanatory variables are orthogonalized using the Jorion (1991) procedure. Estimation results are shown in Table 4. The results indicate that domestic FDI outflows are positively and significantly related to domestic bank investment abroad. Clearly, foreign asset acquisition decisions of financial and non-financial institutions in a country are informed by the same macro-factors and other things constant, one would expect that foreign asset holdings of banks respond in the same way to these factors as FDI in general. In this respect, our results are consistent with expectations. Further to this finding, the foreign trade variable remains positive and significant in all the three equations, implying that the "follow-the-client-hypothesis" finding is strongly upheld. Clearly, banks in Kenya appear to go multinational within the east African region to serve their domestic clients with interests in foreign countries.

Consistent with the results in Table 3, coefficient estimates of the foreign gross national income are still consistently negative (surprisingly again!) and significant for Tanzania. The foreign inflation coefficient is positive and significant for Tanzania, confirming the earlier results that the profit motive strongly informs the decisions of Kenyan banks entering the Tanzanian market. Although negative in sign, coefficient estimates of foreign inflation are very small in magnitude for Rwanda and Uganda, and because they are statistically insignificant, are not amenable to meaningful interpretation. Further, the integration variable is still surprisingly negatively related to foreign asset holdings of Kenyan banks.

Table 4: OLS regression
Dependent variable – Investment in foreign subsidiaries

Country	Rwanda	Tanzania	Uganda
Constant	0.41 ** (4.38)	0.86 *** (9.85)	1.21 *** (10.06)
Domestic FDI outflows	0.09 * (3.13)	0.26 ** (8.20)	0.39 ** (9.88)
Domestic GDP per capita	1.74 ** (6.25)	3.13 ** (11.19)	4.19 *** (12.17)
Domestic bank concentration	-61.53 *** (-10.60)	-78.63 ** (-18.93)	-91.75 *** (-15.13)
Domestic market depth	4.12 (9.96)	2.54 ** (6.09)	1.34 * (3.65)
Foreign inflation	-0.004 (-1.36)	0.11 ** (5.71)	-0.01 (-1.84)
Foreign GNI per capita	-0.12 (-0.18)	-0.28 ** (-6.81)	-0.33 (-1.24)
Foreign trade	0.57 (1.79)	0.18 (0.60)	0.30 *** (10.52)
Foreign Regulation	0.77 ** (5.13)	2.80 ** (5.41)	6.16 *** (12.23)
Spread differential	-1.86 ** (-24.86)	-0.76 (-2.72)	-0.97 ** (5.15)
Economic integration	0.08 (0.47)	-0.83 ** (-5.11)	-1.52 ** (-6.77)
Adjusted R sqd.	0.97	0.91	0.97
P-value of F-statistic	0.00	0.00	0.00
Breush-Pagan (LM)	7.38 [0.69]	14.21 [0.16]	7.47 [0.68]
ARCH(1) test (LM)	0.12 [0.73]	0.52 [0.47]	0.19 [0.66]
Residual normality test (χ^2)	1.54 [0.46]	2.55 [0.34]	0.05 [0.98]

***, **, and * represent statistical significance at 1% and 5% levels respectively. The table provides coefficients of the OLS regression with the number of subsidiaries being established abroad as the dependent variable. The numbers in brackets are the t-statistics. Standard errors are robust to heteroskedasticity and autocorrelation. P-values of diagnostic statistics are in square braces.

It is important to note the compelling evidence of the role of domestic competition on banks' foreign investment behavior. Coefficient estimates are all negative and significant strongly confirming the underlying inverse relationship between domestic competition and the decision to establish a regional presence among Kenyan banks. Similarly, our regulatory quality variable reports positive and significant relationship with foreign investment consistent with the earlier finding that banks like to operate in a regulatory environment with well-defined rules. Overall, the signs of coefficients from the OLS regression are, broadly speaking, similar to those of the Poisson regression, a clear signal that our results are robust to different proxies of foreign bank presence as well as to different estimation techniques.

b) Predictive regressions

In this section, we try to understand whether the explanatory variables in one year may help explain bank entry into foreign markets in the year following. For instance, foreign income levels this year might influence domestic bank decision makers to undertake an (foreign) expansion strategy in the following year, hoping that such a growth in income might precipitate greater need for banking services and perhaps bring on board some population segments hitherto unreached by those services. Results are presented on Table 5.

From the results, it is clear that the single most important variable informing banks' foreign investment decisions in the following period is bank domestic concentration. The coefficient is negative and significant suggesting that higher competition in the sector probably signifies a threat of possible future loss of market and elicits in bank managers' the desire to try to capture new external markets. This way, perhaps they can forestall possible poor performance in the future. Other important factors include domestic market depth and economic growth, both with positive coefficients. We infer from the economic growth variable that better economic performance in one year enables banks to accumulate capital most likely through higher retained earnings to enable them finance foreign acquisitions of assets in the subsequent periods. In general, domestic factors appear more important in informing banks' future foreign investment decisions than foreign factors. Results for Tanzania must however be interpreted with caution because of non-normality of residuals. Similarly, the ARCH(1) test also rejects the hypothesis of the absence of autoregressive conditional heteroskedasticity. However, in all cases, we have used standard errors robust to heteroskedasticity and autocorrelation to reduce their possible adverse effects on the efficiency of estimates.

Table 5: OLS regression
Dependent variable – "Lead" investment in foreign subsidiaries

Country	Rwanda	Tanzania	Uganda
Constant	0.98** (15.66)	0.67 * (7.00)	1.06 (4.33)
Domestic FDI outflows	0.42** (21.55)	0.30* (10.69)	0.43 (5.06)
Domestic GDP per capita	3.05** (16.86)	2.45* (6.32)	3.68 (4.36)
Domestic bank concentration	-1.20** (-24.97)	-0.89** (-25.79)	-0.97 (-31.83)
Domestic market depth	3.24*** (13.30)	3.65* (6.45)	2.34 (1.01)
Foreign inflation	-0.004 (-2.64)	-0.06 (-3.50)	-0.02 (-1.98)
Foreign GNI per capita	-0.14 (-0.31)	-0.03 (-0.85)	-0.74 (-5.45)
Foreign trade	-0.10 (0.59)	0.71 (2.27)	0.21 (2.18)
Foreign Regulation	-0.71* (-7.10)	0.25 (0.48)	0.42 (0.46)
Spread differential	-0.85** (-15.79)	0.69 (2.18)	-0.09 (-0.38)
Economic integration	-0.85* (-7.47)	-0.31 (1.55)	-1.08 (-2.14)
Adjusted R sqd.	0.98	0.77	0.19
P-value of F-statistic	0.01	0.00	0.01
Breush-Pagan (LM)	0.02 [0.89]	3.21 [0.07]	0.77 [0.38]
ARCH(1) test (LM)	4.46 [0.11]	6.13 [0.05]	0.66 [0.71]
Residual normality test (χ^2)	9.82 [0.46]	16.01 [0.10]	9.07 [0.52]

***, **, and * represent statistical significance at 1% and 5% levels respectively. The table provides coefficients of the OLS regression with the number of subsidiaries being established abroad as the dependent variable. The numbers in brackets are the t-statistics. Standard errors are robust to heteroskedasticity and autocorrelation. P-values of diagnostic statistics are in square braces.

05 FIVE

Conclusions

The fast-changing business environment has seen many commercial banks in East Africa getting aggressive with some moving across geographical borders to grow their revenues. Prior to this study, it has not been clear what was motivating these banks to engage in foreign expansion. Our empirical strategy uses Poisson regression with Kenya as the source country and three East African countries of Rwanda, Tanzania and Uganda as host countries. The eclectic theory of internationalization of firms provides the analytical framework. We find that follow-the-customer motive is strong drive for bank expansion across East Africa. Similarly, the desire for superior returns and the need to escape intense competition in Kenya has lured banks into foreign markets. Further, favorable regulatory environment abroad is an important factor influencing the expansion of banks into foreign markets. Surprisingly, our results suggest that economic integration is negatively related with bank expansion. Results are robust to alternative measures of foreign bank expansion and estimation procedures. We also run predictive regressions, which show that the single most important factors informing banks' future decisions to move abroad is domestic bank concentration.

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Appendix

SUBSIDIARIES OF KENYAN BANKS

Commercial Bank of Africa

CBA Capital Limited Kenya

Commercial Bank of Africa (Tanzania) - Dar es Salaam, Tanzania

Commercial Bank of Africa (Uganda) - Kampala, Uganda

Diamond Trust Bank

Diamond Trust Bank (Burundi)

Diamond Trust Bank (Rwanda)

Diamond Trust Bank (Tanzania)

Diamond Trust Bank (Uganda)

Equity Bank

Equity Bank (Rwanda) – Kigali, Rwanda

Equity Bank (South Sudan) – Juba, South Sudan

Equity Bank (Tanzania) – Dar es Salaam, Tanzania

Equity Bank (Uganda) – Kampala, Uganda

Equity Consulting Group Limited – Nairobi, Kenya

Equity Insurance Agency Limited – Nairobi, Kenya

Equity Nominees Limited – Nairobi, Kenya

Equity Investment Services Limited – Nairobi, Kenya

Finserve Africa Limited – Nairobi, Kenya

Equity Group Foundation – Nairobi, Kenya

Guaranty Trust Bank

Guaranty Trust Bank (Kenya)

Guaranty Trust Bank (Uganda)

Guaranty Trust Bank (Rwanda)

I&M Bank

GA Insurance Limited – Nairobi, Kenya Kenya

Bank One Mauritius – Port Louis, Mauritius Mauritius

I&M Bank (Tanzania) – Dar-es-Salaam, Tanzania

I&M Bank (Rwanda) – Kigali, Rwanda Rwanda

I&M Bank (Uganda) - Kampala, Uganda Uganda

Imperial

Imperial bank Uganda

KCB

KCB Burundi – Bujumbura, Burundi

KCB Rwanda – Kigali, Rwanda

KCB Sudan – Juba, South Sudan

KCB Tanzania – Dar es Salaam, Tanzania

KCB Uganda – Kampala, Uganda

KCB Foundation Limited – Nairobi, Kenya

KCB Sports Sponsorship Limited – Nairobi, Kenya

Savings & Loan Kenya Limited – Nairobi, Kenya

NIC Bank subsidiaries

NIC Capital - Nairobi, Kenya

NIC Capital Securities - Nairobi, Kenya

NIC Bank Tanzania - Dar es Salaam, Tanzania

NC Bank Uganda - Kampala, Uganda

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