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Impact of Economic Integration on Performance of Listed Companies in East Africa

By

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Abstract

Whereas several scholars have investigated the effects of the customs union and common market at a macro-level, few have studied its impact at the micro-level. In this study, using multilevel analysis, we investigate whether economic integration has had a significant impact on the performance of listed firms in the East African Community. We also assess whether the impact is the same across the countries. Our findings show that integration has had a positive and significant impact on company performance. The findings reveal no significant disparity in the impact of integration between the Kenyan and Tanzanian firms and between the Ugandan and their Tanzanian counterparts. We, however, found a significant disparity in the impact between the Kenyan and the Ugandan firms. The study also revealed a significant positive relationship between cross-listing and size and none between age, gearing, intra-East Africa trade, and integration.

Key Words: East Africa, Integration, multilevel analysis, Trade Creation, Diversion, Companies

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Introduction

Economic integration has grown exponentially across the world over the past two decades, as evidenced by the number of physical trade agreements in force at the end of 2016, which increased more than four times during the past two decades (WTO, 2017). This increase implies that many countries have or are in the process of forming economic trading blocks of different types, such as free trade areas, customs unions, common markets, and monetary unions. East Africa is one of the regions transforming into an integrated region known as the East African Community (EAC). The EAC is one of the blocks in Africa with a very long history of integration, starting in 1919, with a semblance of a customs union between Kenya and Uganda. Though the first integration efforts ended in 1977 with the collapse of the first East African Community, recent endeavors led to the formation of the new EAC in the year 2000 (East African Community, 2016). The membership to the new community has expanded from the original three in 1999 to the current six countries of Kenya, Tanzania, Uganda, Rwanda, Burundi, and South Sudan. This rapid expansion of regionalism in East Africa and the world-over is intriguing.

The rapid growth of regionalism is partially due to research findings that associate integration with increased trade and economic growth. Some scholars argue that by removing tariffs and non-tariff barriers, economic integration will lead to increased trade, and eventually, economic growth (Mann, 2015; Mika & Zymek, 2018). Other scholars, however, find no association between integration and trade or growth (Muluvi, 2014; Tumwebaze & Ijjo, 2015). Furthermore, some study findings are mixed, with some linking integration with growth and increased trade in one region or member country, while at the same time leading to no growth in another country in the same integrating region (Campos, Coricelli, & Moretti, 2014; Riedel & Slany, 2018).

Other results further complicate the mixed findings by indicating that countries in the EA region lag behind their peers in the Sub-Saharan area in some of the key macro-economic indicators. For example, researchers found the EAC member countries to be among the ten nations with the highest number of people living in abject poverty (Cilliers, Turner, & Hughes, 2015). Moreover, reports from the East African Community on trade and investment in the region reveal a worrying situation, whereby the intra-EAC trade as a percentage of the total trade has been declining for some time (Babatunde & Odularu, 2017). This intra-trade ranked among the lowest (less than 20 percent) when compared with other integrating regions by the end of the year 2015 (East African Community, 2015).

Besides revealing contradictory results, earlier studies have concentrated mainly on the macro-level analysis (Ehigiamusoe & Lean, 2019; Martin-Mayoral, Morán, & Cajas, 2016). These studies mostly explored the effect of integration on trade and economic growth. None of these studies have investigated the impact of integration at a micro-level. The incomplete coverage of the impact of integration leaves a gap in the literature, which this study attempts to fill.

This study is critical because it shows that integration has value and, therefore, it is beneficial to the investors and company executives in their pursuit of better returns for the shareholders. Governments and policymakers will find the results of this study useful in the promotion, implementation, monitoring, and evaluation of the integration process and the impacts thereof.

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We have organized the rest of this paper as follows: a statement of the problem, a brief theoretical and empirical literature review, and then the hypotheses. Next, we give the methodology, discuss the findings, and state the contributions. Finally, we state the implications, give the limitations of the study, propose the areas for future research, and then conclude.

Statement of the Problem

Whereas the East African nations have had a long history of integration and that the region has had continuous growth of total trade, which tripled between 2000 and 2015, the overall percentage of the EAC total intra-trade, remains low, at less than 18% (World Integrated Trade Solutions, 2016). Furthermore, empirical research conducted internationally on the effect of integration on trade yielded mixed results. While some of the studies found a positive link between integration and trade (Afesorgbor & Bergeijk, 2014; Egu, 2014; Kahouli, & Maktouf, 2015), others either yield a contrary opinion or confirm that there is no relationship between integration and trade (Muluvi, 2014; Tumwebaze & Ijjo, 2015).

Consequently, the long history of integration, especially in East Africa and the inconclusiveness of the empirical findings seem to compel researchers to look for answers from the stock markets. These scholars, however, tend to lean so much on events studies and ignore the fact that integration is a process, which calls for studies using longitudinal data or even some other prompt interventions (Soyoung, 2016).

Theoretical Review

Classical scholars like Viner (1950) base economic integration on the theories of trade creation and diversion that were first identified by (Viner & Oslington, 2014). Viner's theories came to be known as the static theories in contrast to the dynamic ones identified by later scholars. Balassa (2013) and Cooper and Massell (1965) were the first to identify the dynamic theories, stating that these effects show up in the medium- and long-term periods of integration in contrast with the static effects that show up in the short run. Since the time of Balassa, subsequent researchers have identified the dynamic effects of integration as economies of scale, technological change, market size, foreign direct investment, productivity, and economic growth. This study relies on the dynamic effects' theory, which has two views.

The first argues that integration leads to high productivity and economic growth (Mann, 2015; Mika & Zymek, 2018). The findings of these scholars show that the integrated regions benefit from expanded markets, increased productivity, and economies of scale. They further contend that integration is positively associated with foreign direct investment and technological transfer, which combine to lead to an increase in trade and growth.

The second group of scholars, however, reveals that integration does not necessarily lead to trade creation or growth (Balassa, 2013). The differing scholars did not only fail to find a link between trade, growth, and integration but also assert that integration is irrelevant to the developing countries. These contradicting arguments lead to our first hypothesis in the null form:

H₁: Economic integration has had no impact on the performance of the listed firms in East Africa.

Furthermore, other studies report mixed findings whereby integration is associated with economic growth and trade in one country and none in another country within the same region (Campos, Coricelli, & Moretti, 2014; Riedel & Slany, 2018). This scenario sometimes leads to, according to Elkan (1975), what is called 'backwash.' 'Backwash' is the concentration of benefits in one or a few countries within an integrating region. Hence, integration may leave the geographically isolated and economically deprived countries to share less from the benefits of

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coming together (Marinov, 2015). The mixed results lead to our second hypothesis, H_2 : *The impact of the EAC economic integration, if any, is the same across the countries.*

Data and Variable Measurement

The researchers used data from 59 firms listed in the three East African countries (Kenya, Tanzania, and Uganda), which have had active stock exchange markets for over 15 years. Firms from the other three countries (Rwanda, Burundi, and South Sudan) were left out. Rwanda was left out because its stock exchange started trading in 2011, while Burundi and South Sudan do not have active stock exchanges. Also, we left out firms listed after the year 2009 because of insufficient data.

We sourced the data as follows: sales, assets, age, equity and earnings before interest, tax, and extraordinary items from the firms' published accounts. We got the published accounts from the Capital Market Authority of Kenya Resource Centre, the Africa Markets and the African Financials websites. For the intra-EAC trade data, we sourced it from the World Bank.

Analysis Technique

This study used annual sales for sixteen years from 2000-15. The data used was from individual firms in the different countries within the region. This classification implies that the data were nested, and therefore, called for the use of multilevel analysis modeling. Consequently, the model specification was from the classical multilevel linear intercept-only equation, see equation 3.1, below (Hox, 1998):

$$Y_{ijk} = Y_{00} + \varepsilon_{ijk} \quad (\text{Equation } 3.1)$$

Where ijk are the different levels, i.e., i is level one, j is level two, and k is the observation (sale). Y_{00} is the constant or the grand mean sale, and ε_{ijk} is the deviation from the grand mean. Y_{00} is referred to as the fixed part of the model, while ε_{ijk} is the random part (StataCorp, 2013). We modified Equation 3.1 in order to take care of the explanatory variables at different levels. We also broke down the error term (ε_{ijk}) into three parts to represent the firm- and country-level variances, plus the residuals, to arrive at the expanded Equation 3.2 below:

$$Y_{ijk} = Y_{00} + Y_{10}X_{ij} + \mu_i + \mu_{ij} + \varepsilon_{ijk} \quad (\text{Equation } 3.2)$$

Where $Y_{10}X_{ij}$ represents the explanatory variables, μ_i represents the deviation of the country means from the grand mean, μ_{ij} is the deviation of the firm mean from the country mean sales, and ε_{ijk} is the residuals. We transformed the sales and assets data in order to reduce the skewness in the distribution. Whereas the model assumes that the error terms are normally distributed with a zero mean and variance, the lack of normality in the residuals does not, however, invalidate the results in the multilevel models (Gelman & Hill, 2006).

We restate Equation 3.2 and add the explanatory variables to arrive at Equation 3.3 below:

$$S_{ijk} = \beta_0 + \beta_1 X_{ij} + \lambda_{ij} + \mu_{0j} + \mu_{ij} + \mu_{1ij} (\text{year}) + \varepsilon_{ijk} \quad (\text{Equation } 3.3)$$

Where S_{ijk} represents sales (firm performance), X_{ij} represents the independent variables, and λ_{ij} represents the cross-level interaction variables. Then μ_{0j} and μ_{ij} represent the variances at the country and firm-level, while $\mu_{1ij} (\text{year})$ and ε_{ijk} , the slope and the residuals, respectively.

Dependent Variables

We set firm performance as the dependent variable and measured it as the annual sales. This study employed sales or turnover to measure performance because this variable corresponds to market size and trade volume, which are some of the critical objectives of economic integration in the East African Community (East African Community, 2016). We further subject the results to a robustness test by using the return on assets as an alternative measure of performance.

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Independent Variables

The economic integration was the variable of interest, which we operationalized as the customs union and common market. Besides economic integration, we also used the following control variables. To start with, at the firm level, we included the age, gearing, size, cross-listing, year, and industry; then at the regional level, we used intra-EAC trade, and at the country level, we used three dummy variables to capture the three countries (Kenya, Uganda, and Tanzania). We describe these variables below in detail:

Economic Integration

Economic integration is broken down into the customs union and common market and then operationalized by the use of dummy variables. Similar to the earlier studies, we employed the dummies technique to capture economic integration (Muradoğlu, Onay, & Phylaktis, 2014). We set the dummy variables in such a way that they would capture the different phases, i.e., the pre-integration period (2000-04), the implementation of the customs union (2005-09), and the implementation of the common market (2010-15). The authors coded the Pre-integration years as one (1), and years after (2005–15) as zero (0).

Similarly, we coded the years during the customs union (2005-09) as one (1) and zero (0) otherwise. We did the same for the common market; years 2010-15 were coded as one (1), and years 2000–10 were coded as zero (0). The authors divided the period into phases in order to capture the impact of integration on firm performance. A non-significant coefficient on this variable would support the first hypothesis: (H₁): that economic integration has had no impact on the performance of the listed firms in East Africa.

Trade

Trade is an essential aspect of economic integration, and it is one of the prime reasons that entice countries to come together and form regional blocs. From the economic integration theory, we expected that when nations come together, trade between them increases for their mutual benefit because of the reduction of tariff and non-tariff barriers. Thus, we measured trade as a percentage of intra-EAC exports over total exports. We expected this variable to relate positively to sales.

Country-level Control Variables

Whereas integration brings nations together, each state retains its uniqueness derived from history, location, natural resources, political, education, and cultural experiences, which either hinder or enhance performance. We represented this uniqueness as a dummy variable and coded the countries as 1 = Kenya, 2 = Tanzania, and 3 = Uganda.

Firm Size

The authors measured firm size, one of the control variables, as total assets. The study included the size because of its association with economies of scale. Our inclusion of this variable is consistent with prior research (Maina & Mwasa, 2014). Large firms have the resources and expertise to take advantage of the emerging opportunities accruing from integration than the smaller firms. We expected this firm size to relate positively and significantly with the annual sales.

Leverage

The firm leverage was another control variable known to have a relationship with the firm's performance (Le & Phan, 2017). We measured leverage as total debt to total assets. Since the seminal paper of Modigliani and Miller (1958), the relationship of debt to assets has attracted

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considerable interest among academicians, investors, managers, and policymakers. We expected this variable to relate negatively to sales.

Cross-Listing

Since the renewal of the EAC, several firms have pursued cross-listing within the region, mainly due to the favorable conditions of the integration process (East African Community, 2016). Cross-listing may have altered the capital structure of the respective firms and probably their performance. A firm was assigned a value of one (1) if cross-listed and zero (0) otherwise. We expected Cross-listing to have a positive relationship with the firms' performance.

Firm Age

We measured age as the number of years since the incorporation of the respective firm. Older firms have lived through thick and thin and have been able to withstand numerous challenges, often turning the lessons learned into competitive advantages. Consistent with previous studies, the authors used age as a control variable in their model (Zoogah & Mburu, 2015). Whereas older firms can benefit from their long experience, sometimes, young ones can leverage technology to their advantage, and hence compete favorably with the mature firms. The leveraging of technology is especially true in communication and other high-tech industries. Notwithstanding the ability of some young firms to leverage technology, we expected this variable to relate positively with performance.

Year Fixed Effects

Similar to prior studies, we used the year fixed effects in the model (Zoogah & Mburu, 2015). We represented this variable as a dummy and coded it in such a way that when a current year took on the value of one (1), the rest took on a zero value.

Industry fixed effects

Each industry places certain constraints and also offers specific opportunities to the firms belonging to the same. To control for each industry's uniqueness, we used a dummy representing each industry in the model as follows: 1 = Agricultural, 2 = Automobile & Accessories, 3 = Banking, 4 = Commercial & Services, 5 = Construction and Allied, 6 = Energy & Petroleum, 7 = Insurance & Investment, and 8 = Manufacturing & Allied.

Descriptive and Correlation Analysis

Table 1 below gives the descriptive and correlation results. The pre-integration period variable correlates negatively and significantly with the sales, while the customs union and the common market (post-integration phases) correlate positively and significantly with sales. This relationship is an early indicator of support for the first hypothesis. The correlations of some of the variables ranged from a low to a mild high level of correlation, implying a low level of multicollinearity.

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Table 1: Descriptive Statistics and Correlations of the variables in the Study

	M	SD	1	2	3	4	5	6	7	8	9
1. Log (Sales)	19.9	0.38	1								
2. Log (Assets)	20.1	0.64	0.78***	1							
3. Age	56.3	26.5	0.14***	0.04	1						
4. Gearing	0.57	0.27	0.25***	0.49***	0.06	1					
5. Trade (per cent)	19	4	-0.05	-0.05	-0.03	0.004	1				
6. Cross-Listed Firms			0.23***	0.26***	-0.08**	0.10**	-0.002	1			
7. Customs Union			0.004*	-0.003	-0.03	0.02	0.01***	0.004	1		
8. Common Market			0.25***	0.23***	0.15***	0.024	-0.23***	0.004	-0.53***	1	
9. Pre-Integration			-0.27***	-0.24***	-0.13***	-0.05	0.23***	0.01	-0.45***	-0.52***	1

***, **, and * indicate one, five, and ten per cent levels of significance, respectively.

Source: Authors' calculation

Notes:

Sales are the annual turnover transformed into log; assets are the total assets transformed into logs; age is the number of years since the initial incorporation; gearing is the liabilities divided by assets, and trade is the intra-EAC exports as a percentage of the total exports. Cross-listing is a categorical variable of the firm coded as one for cross-listed firms and zero otherwise. Pre-integration, customs union, the common market are categorical variables representing the different integration phases. We coded pre-integration years (2000-04) as one and post-integration (2005-15) as zero.

Similarly, we coded the years during the customs union (2005-09) as one, and the other years as zero. We did the same for the common market by coding the years 2010-15 as one, and zero otherwise. M is the mean, and SD is the standard deviation.

Impact of Economic Integration on Firm Performance

We used the xtmixed command of Stata, Version 15, in a multilevel analysis to investigate the impact of economic integration on firm performance under the hypothesis that H₁ *Economic integration has had no impact on listed firm performance in East Africa*. The results are given in Table 2 below:

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Table 2: Impact of Economic Integration on Firm Performance

Independent Variable	<u>Log (Sales)</u>		<u>Return on Equity</u>	
	Coefficient	Z	Coefficient	Z
Intercept	11.637 ***	31.37	-2.174*	-2.36
^a CU_Firm	0.0001***	4.57	0.0004**	2.25
^b CM_Firm	0.0002***	6.36	0.0006**	2.37
Asset	0.382 ***	21.95	0.131 **	2.35
Age	0.059	1.52	-0.005	0.92
Gearing	-0.0355	-1.14	-0.401 ***	-3.55
Trade	0.234	1.14	0.71	0.476
Cross-Listing	0.067**	1.96	0.089	
Year Dummy	Yes		Yes	
Country Dummy	Yes		Yes	
Industry Dummy	Yes		Yes	
N		869		866
Wald Chi ² (17)		1424.49		80.69
Log-likelihood (Significance)		524.48,		-739.60
LR test statistic vs linear model		p-value Chi ² , (0.000) Chi ² (2) = 852.43, (0.000)		p-value Chi ² (0.000) Chi ² (2) = 8.31, (.016)

Source: Authors' calculation

***, **, and * indicate one, five, and ten percent level of significance, respectively.

^aCU_Firm represents the impact of the customs unions on firm performance, measured as an interaction between the customs union and firm, while ^bCM_Firm represents the impact of the common market on firm performance, measured as an interaction between the common market and firm performance.

Impact of the Customs Union on the Performance of the Firms

The coefficient of the interaction between the customs union and the firm is positive and significant at a one-percent level ($\beta = 0.0001$, $p = 0.000$). Thus, the findings of this study do not support the first hypothesis that Economic integration has had no impact on listed firm performance in East Africa at the customs union phase. The result, similar to the initial correlation analysis, suggests that the EAC customs union has had a significant positive impact on the firms' sales (performance) in East Africa.

Impact of the Common Market on Firm Performance

The results of the impact of the common market on firm performance in Table 2 also show that the coefficient of economic integration represented as an interaction between the common market and the firm is positive and significant at a one-percent level ($\beta = 0.0002$, $p = 0.000$). These results further affirm the rejection of the first hypothesis. Hence, the common market phase of economic integration, as expected, has had a significant positive impact on the performance (sales) of the listed firms in the EAC.

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The significant results mean that the two phases of economic integration in the EAC (the customs union and common market) have had a significant positive impact on the firms' performance in the region. The above results agree with the researchers who consider economic integration to have a positive link with performance (Soyoung, 2016; Kahouli & Maktouf, 2015). The findings, too, are in agreement with the expectation of the theory of integration.

Besides the removal of tariffs and non-tariff barriers on goods and services conferred by the customs union, the common market accords the citizens of East Africa many freedoms and rights. Whereas the implementation of the freedoms and rights are not fully actualized, the EAC has made some degree of progress. It is this partial realization of these rights and freedoms that is already positively impacting the performance of the firms.

Trade was the other variable we included in the analysis, and as expected, the coefficient of this variable turns out to be positive but not significant at the conventional level. The positive association of trade and performance at a micro-level lends credence to the proponents of integration in pursuit of economic growth and development of the region (macro-level). The results, however, are not significant. The results on trade are not surprising because in the period from 2000-15, total intra-EAC trade in absolute terms increased substantially; however, it declined as a percentage of total trade. The insignificant results may be due to the remaining non-tariff barriers and the EAC countries producing more or less similar products.

The study further included the size of the firm in the analysis, and as expected, the coefficient of this variable was positive and significant at a one percent level ($\beta = 0.381$, $p = 0.000$). The significant results confirm that large firms exploit more the opportunities emanating from integration. It seems that large firms took advantage of the emerging opportunities including utilisation of excess capacity to benefit from integration. Also, such large firms might have already been operating in different countries with regional offices or even manufacturing subsidiaries.

We also included the age of the different firms in the analysis. The coefficient of this variable is positive, but not significant, which means that older firms did not have a unique advantage over the young ones as a result of the advent of integration. The insignificance of age may have been due to the young firms' ability to leverage the rapidly changing technology to their advantage and thus counter the advantages of age enjoyed by the older firms. Leveraging technology is especially prevalent in the telecommunication and financial institutions.

Gearing was another variable, which we included in the analysis at the firm level. The coefficient of this variable was negative, but not significant. These results conform to the capital structure irrelevancy theory of Modigliani and Miller (1958). These findings, however, may change with time due to the convergence of the interest rates in the region. Also, with the increased free movement of capital, its cost may come down; thus, attracting the firms to alter their capital structure and take advantage of the less expensive funding opportunities.

Additionally, we used cross-listing as a control variable in this study, and the findings show that it had a positive and significant relationship with a performance at a five percent level ($\beta = 0.067$, $p = 0.050$) under the integration period. The findings are in agreement with those who consider cross-listing to be positively related to performance (Li, Brockman, & Zurbruegg, 2015). The results, too, confirm the theoretical expectation that integration may lead to a reduction in the cost of capital and, in turn, may lead to improved performance.

The significant positive results mean that cross-listing has helped the relevant firms to tap into the less expensive option of using equity to finance their operations. The results, however, contradict other researchers' findings that there is no relationship between cross-listing and performance (Onyuma, Mugo, & Karuiya, 2012). The contradiction may be due to the different research methods used and the timing of the research. Whereas Onyuma et al. (2012), used the ordinary least squares method, this study used multilevel analysis.

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Robustness of the Results

The study tested the results of the primary model by using the return on equity (ROE) as an alternative measure of performance. We measured return on equity as the earnings before interest, tax, and extraordinary items divided into equity. The results of this analysis in Table 2 above indicate that the impact of the customs union and the common market on firm performance are positive and significant. The results of the impact of the customs union are significant at a one percent level ($\beta = 0.0005$, $p = 0.001$), while that of the common market is too significant at five percent level ($\beta = 0.0004$, $p = 0.028$). The similarity between the results that we arrived at using ROE and sales, as a measure of performance, implies that it is unlikely that we achieved the first results by chance. Consequently, the results of the main objective of the impact of integration on the firm performance are robust, irrespective of the measure used.

The Explanatory Power of the Model

The results in Table 2 give the explanatory power of the model as Log-likelihood = 524.48, Wald Chi-square (17) = 1424.49, and a $p = 0.000$. The significant p -value means that the model as a whole properly fits the data. The results also indicate the comparison between the ordinary least squares (OLS) technique and multilevel linear regression analysis. The outcomes of the comparison are chi-square (2) = 852.43, $p = 0.000$. The significant Chi-square results above imply that the multilevel linear regression model is a superior method when compared to OLS in analyzing the data (Torres-Reyna, 2007).

Impact of Economic Integration on the Different Countries

We also set out to investigate whether the impact of economic integration is the same across countries, an objective that was contingent upon the rejection of the first hypothesis. Once, the research findings revealed that economic integration had a significant positive impact on the performance of the listed firms, and then it became requisite to investigate the second objective. We measured the impact as an interaction between the economic integration (customs union and common market) and firm performance using one of the Countries as a reference point. Table 3 shows the results of the analysis.

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Table 3: Impact of Integration on Firm Performance in the Different Countries

Variable	Kenya as Reference		Tanzania as Reference	
	Coefficient	Z	Coefficient	Z
Intercept	11.648***	27.13	11.547***	26.38
CU_Firm	0.0001***	3.57	0.0001***	3.43
CM_Firm	0.0002***	3.82	0.0002***	3.35
Trade	0.610**	1.87	1.124**	2.32
Assets	0.399***	18.92	0.396***	18.61
Age	0.012	0.55	0.012	0.50
Gearing	-0.018	-0.95	-0.070	-0.89
Cross-listing	0.066*	1.68	0.066*	1.69
^a CM_TZ	-0.027	-0.63		
^b CU_TZ	-0.030	-1.19		
^c CM_Ug	-0.084**	-1.98		
^d CU_Ug	-0.043*	-1.72		
^e CM_K			0.054	1.52
^f CU_K			0.036	1.47
^g CM_Ug			-0.036	-0.70
^h CU_Ug			-0.009	-0.26
Year Dummy			Yes	
Country Dummy			Yes	
Industry Dummy			Yes	
Firm Dummy			Yes	
N			928	
Log-likelihood (Sig)	1038.01, p-Value Chi ² (33) = 605, (0.000)		1038.3, p-value Chi ² (33) = 606, (0.000)	
LR test Statistic Vs Linear Model	Chi ² (4) = 1904.3, (0.000)		Chi ² (4) = 1905.0, (0.000)	

Source: Authors data

Note: ***, **, and * indicate one, five, and ten per cent levels of significance, respectively.

^aCM_TZ is the interaction variable between the common market and the Tanzanian firms' performance while ^bCU_TZ is the interaction variable between the customs union and the Tanzanian firms' performance, and ^cCM_Ug is the interaction variable between the common market and the Ugandan firms' performance. Lastly, ^dCU_Ug is the interaction variable between the customs union and the Ugandan firms' performance, while ^eCM_K is the interaction variable between the common market and the Kenyan firms' performance. ^fCU_K is the interaction variable between the customs union and the Kenyan firms' performance, ^gCM_Ug is the interaction variable between the common market and the Ugandan firms' performance, and ^hCU_Ug is the interaction between the customs union and the Ugandan firms' performance.

The second and third columns in Table 3 show the results where we used Kenya as the reference country for the comparison. The results indicate that the coefficient of the variable of the interaction of the customs union and the Tanzanian firms is negative, but not significant ($\beta = -0.030$, $p = 0.235$). These results imply that there was no significant difference in the impact of the customs union on the sales of the Tanzanian firms and the Kenyan ones. The results of the second phase of integration (the common market) are also negative and not significant ($\beta = -0.027$, $p =$

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0.529). The results again mean that there is no significant difference between the impact of the common market on the sales of the Kenyan and the Tanzanian firms.

The results for the impact of the customs union on Ugandan firms, however, indicate a negative and significant coefficient at a ten percent level ($\beta = -0.043$, $p = 0.086$). This result means that the impact of the customs union has been significantly less on the Ugandan firms than on their Kenyan counterparts.

The result for the impact of the common market on the performance of the Ugandan firms in comparison with the Kenyan ones is negative and significant at five percent level ($\beta = -0.084$, $p = 0.048$). This finding suggests that the impact of the common market on the Ugandan firms has been significantly lower than on the Kenyan ones.

Hence, from the results of Table 3, it is clear that the impact of economic integration is not the same for all countries. Consequently, the second null hypothesis, which states that the impact of economic integration, if any, is the same across countries, was not supported at ten percent and five percent levels of significance for the customs union and common market, respectively. The evidence from this study suggests that economic integration has significantly impacted the countries' firms differently.

The significant disparity in the impact of integration on the Kenyan and Ugandan firms may be due to the substantial trading volumes between the two countries. For long, Uganda has been Kenya's major trading partner, yet the trade balance is often in Kenya's favor rather than Uganda's (World Bank, 2019). Uganda's turbulent political history since independence, which led to the destruction of the critical infrastructure, may be partly responsible for this imbalance. Furthermore, Uganda is landlocked and tends to use the Kenyan Port of Mombasa more than that of Dar es Salaam. Easy access to the sea may have encouraged more investors to settle in Kenya and then export their products to Uganda because the integration process is transforming the region into one market. This finding is in agreement with previous study results that being land-locked relates negatively to sales (Zoogah & Mburu, 2015).

Columns 4 and 5 of Table 3 give the results arrived at using Tanzania as the reference country. These results give positive but not significant coefficients at the conventional level for the impact of the customs union and common market on the performance of the Kenyan firms in comparison with their Tanzania counterparts. The results further indicate that there was no significant difference because of the impact of economic integration (the customs union and the common market) on the performance of the Ugandan and Tanzanian firms.

Theoretical contribution

This study makes three main contributions to the body of literature on economic integration in East Africa. First, unlike most of the earlier studies, which looked at the effect of economic integration on performance at a macro-level, this research explored the impact of integration at a micro-level. This area seems to be a neglected field. The results confirm what earlier studies found: that economic integration has a significant positive effect on performance at a macro-level. The second contribution is the revelation of potential risk for the 'backwash' effect, reflected in the significant disparity in the distribution of the benefits of economic integration. The third contribution is that, to the best of the researchers' knowledge, this seems to be the first study to apply the multilevel methodology in analyzing the effects of integration in East Africa.

Implications

This study has implications for policymakers, managers, and investors. For policymakers, to start with, the study findings revealed a potential risk of the 'backwash' effect between the Kenyan and Ugandan firms. The existence of the 'backwash' effect calls for continuous monitoring to ensure

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that policymakers minimize this effect. Otherwise, if the disparity increases, it might lead to discontent and a possible collapse of the new community like what happened to the old EAC (Muinde, 2015).

The second implication is that integration has created value, and therefore, managers and investors should take advantage of the opportunities resulting from the integration process. Some of the ensuing opportunities are cross-listing and foreign direct investments, which may take the form of greenfield, brownfield, mergers, and takeovers.

Limitations and Future Research

The findings of this study are limited to the EA region and specifically to the three countries (Kenya, Tanzania, and Uganda). Therefore, future research should investigate the impact of integration on the firms in the whole EAC region and other integrating regions in Africa.

This study, too, is limited to the listed firms, which tend to be prominent by the EA's standards. Consequently, the study left out the small and medium enterprises (SMEs). The large and better-capitalized firms may be crowding out the SMEs in benefiting from integration. Future research, therefore, should explore the impact of integration on the performance of SMEs in the region.

Our study is further limited to firms, leaving out the direct impact on people's welfare. The impact on people can be actual or perceived. Perceptions, though subtle, can be a powerful weapon, which may lead either to discontent or support of the integration effort. Thus, future research should explore the perceived impact on integration regarding the people's welfare in EA.

Although integration is a process that evolves depending on the political, social, and economic milieu of the time, our study is limited to the period covered, 2000-15. Hence, future research should explore the impact of integration on the performance of the firms in EA beyond the year 2015.

Conclusion

We have explored the impact of economic integration on the listed firms' performance in EA. We further investigated whether the impact, if any, was the same across all the countries. Our findings indicate that EA integration has had a positive and significant impact on the performance of the listed firms in the region and that the impact is not the same across the countries. The study is significant in that it brings out the impact on integration at the micro-level and also reveals the potential risk of the 'backwash' effect, whereby the benefits of integration are concentrated more in one country than in others. Hence, future research can build on these findings to further the understanding of the impact on economic integration in the region.

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