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Financing the growth of SMEs in Africa: What are the contraints to SME financing within ECOWAS?

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Abstract

This study attempts to provide some understanding about SMEs' access to finance within the West African sub-region with particular interest in establishing whether there are similarities and/or differences in the determinants of SMEs access to finance across countries in SSA. For robustness sake, we developed both subjective and objective measures of access to finance. Using data from World Bank's Enterprise Survey data set, we examine the determinants of access to finance both at the sub-regional level and at the country-level. We found that, generally, at the sub-regional level, access to finance is strongly determined by factors such as firm size, ownership, strength of legal rights, and depth of credit information, firm's export orientation and the experience of the top manager. However, we found important differences in the correlates of firms' access to finance at the country level. The findings of this study therefore have important implications for policy.

Keywords: Finance; SMEs; Growth; Constraints; ECOWAS; Africa

Contents

1. Introduction

A great deal of the development studies literature has focused attention on the difficulties small and medium-sized enterprises (SMEs) face in their daily operations. Generally, there is the view that SMEs decry their level of access to finance and the cost involved in obtaining such funds where available. Obstacles including those created by commercial or equity banks, institutional imperfections and SMEs themselves have been the main challenges. While a lot has been done to address this reoccurring phenomenon (see Abor and Quartey, 2010; Aryeetey, 1998), the problem is still pervasive, requiring further scrutiny given the

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sprawling fields of economic resources waiting to be discovered and tapped by SMEs.

The need to finance the development and growth of SMEs in Sub-Saharan Africa (SSA) economies has been of concern to many policy makers for two main reasons. First, for SSA to be able to compete effectively in the increasingly globalized environment, its micro and small enterprises should grow and transform into thresholds where they will be able to adapt efficient production techniques. Indeed, the SME sector within SSA has been referred to as the 'Missing Middle' in the context of financial inclusion or access to financial (including banking) services. SMEs are by their nature unable to provide the required collateral that large firms have in obtaining formal banking sector loans and at the same time too large to benefit from micro-finance loans and forms of financial support schemes (Abor and Quartey, 2010; Quartey, 2002; Aryeetey, 1998). Secondly, because the small scale end of the manufacturing sector is a cornerstone to employment creation, micro, and small enterprises within that sector should be seen to be growing into thresholds that assure employment generation (by the adoption of labour intensive production), increased incomes/earnings and, ultimately, poverty reduction and economic prosperity. This is achievable once the needed finance is available for investment to propel growth and employment.

Against this background, this paper seeks to examine SME access to financing within the West African sub-region. The motivation for this study is to add to the growing literature on what determines SMEs access to finance in SSA, in the following ways: first, in spite of Africa's specificities regarding SME financing, not many studies have been undertaken to ascertain why SMEs within SSA are considered riskier to lend to and therefore more financially constrained. Besides, to a large extent, most of the available studies, in Africa and elsewhere, have employed subjective measures of access to finance. This study departs sharply from existing studies by employing an objective measure of firms' access to finance to investigate the determinants of SMEs' access to finance in SSA. We believe this measure would yield more meaningful results than the subjective measures.

2. Overview of SME financing in SSA

The operations of small and medium-scale enterprises (SMEs) occupy an admirable position in the economic landscape of most economies in the world, especially for developing countries. It is estimated that more than 95% of enterprises across the world are SMEs and they account for approximately 60% of private sector employment (Ayyagari et al., 2011). SMEs account for a greater share of businesses in South Africa, Ghana, and Nigeria (Abor and Quartey, 2010; Gbandi and Amissah, 2014) and their contribution to GDP, in Ghana for example, stood at about 49% in 2012 (PWC, 2013).

The SME sector in West Africa has been exploding over the past three decades mainly as a result of the few formal avenues for pursuing interest-bearing investment options. Most countries within the sub-region have shallow stock markets, whilst at the same time interest rates have not been able to catch up with rising inflation. Under these circumstances entrepreneurship has been the attraction for investing excess money holdings. Unfortunately the SME sector in West Africa is a mixture of self-employment outlets and dynamic enterprises that are involved in an array of activities mainly concentrated in urban areas. In addition, they lack access to the financial resources needed to expand, grow and transform into higher size thresholds. Questions have been posed as to what might be the main reasons for this.

According to Collier (2009) the lack of access to finance by SMEs in Africa is unfortunately as a result of two high risk characteristics. First, the provision of finance for Africa is generally rated as riskier than for other regions. Second, the provision of finance for small firms is globally rated as riskier than for large firms. The ensuing sections discuss some stylized facts on SMEs within ECOWAS regarding access to finance and explore some of the alternatives that have been deployed within the sub-region by various countries to relieve SMEs of their financing constraints. The World Bank's distance to the frontier index[1] of 2014 shows that with the exception of Ghana and Nigeria, all other West African countries were at best 60 percentage points away from New Zealand (the best performing country in the world). While Ghana and Nigeria were about 35 and 40 percentage points away from the frontier respectively, Ghana's index was higher than the average for OECD high income and Europe and Central Asian countries (World Bank WDI, 2015).

The lack of access to credit by SMEs (who make up over 90% of the private sector) in the developing world is clearly confirmed from data on bank and domestic credit to the private sector in West African countries, and among income groups and sub-regions of the world (as shown in Table 1) between 2000 and 2014. With the exception of high income countries, banks contribute over 90% of domestic credit to the private sector over the period 2000–2014. The proportion of domestic credit to the private sector contributed by banks was even higher for West African countries than other countries. Noticeably in almost all the countries within the sub-region there has been an increase in both domestic and bank credit to the private sector (as % of GDP) over the period, with Cape Verde's ratio more than doubling and Guinea remaining stable at very low levels of less than 6% of GDP. These stylized facts on credit to SMEs in West Africa necessitated the need for a study of this sort to unpack the factors that explain why SMEs within West Africa have difficulty in accessing finance. To do this, we begin by providing anecdotal account of the various alternatives to SME financing within the ECOWAS sub-region.

Generally, within SSA, official schemes (where finance is provided to SMEs by government and/or other international bodies) and informal sources of finance remain the main alternatives

[1] This measure illustrates the distance of an economy to the "frontier". The frontier represents the best performing economy observed with regards to the ease of accessing credit across all economies and years included since 2005. An economy's distance to frontier is indicated on a scale from 0 to 100, where 0 represents the lowest performance and 100 the frontier. The measure on the ease of getting credit is based on the sum of the strength of legal rights index and the depth of credit information index.

Table 1
Bank and domestic credit to the private sector (ECOWAS, income and country groups).

Country/region/group	Bank credit to private sector (% of GDP)				Domestic credit to private sector (% of GDP)			
	2000	2005	2010	2014	2000	2005	2010	2014
Benin	11.6	16.3	23.3	25.1	11.6	16.3	23.3	25.1
Burkina Faso	11.6	16.4	17.3	28.0	11.6	16.5	17.3	28.0
Cape Verde	38.2	37.7	61.0	62.4	40.1	39.1	61.9	62.9
Cote d'Ivoire	14.9	13.0	16.5	20.3	15.1	13.2	16.6	20.3
Gambia, The	6.5	9.5	15.2	13.1	6.7	9.6	15.4	13.5
Ghana	13.8	15.4	14.6	15.8	14.0	15.5	15.3	16.8
Guinea	3.9	4.4	5.7	..	4.0	5.7	5.7	..
Guinea-Bissau	4.6	1.1	6.1	12.1	4.6	1.1	6.1	12.1
Liberia	3.1	6.3	14.4	19.5	3.3	6.7	14.8	19.6
Nigeria	12.3	13.2	15.4	14.5	12.4	13.2	15.4	14.6
Senegal	18.6	23.2	25.6	33.3	18.7	23.2	25.7	33.3
Sierra Leone	2.0	3.3	7.8	4.8	2.1	3.4	7.8	4.8
Togo	16.0	17.5	22.8	34.1	16.0	17.5	22.8	34.1
Niger	4.8	6.8	12.3	14.2	4.8	6.8	12.3	14.2
Mali	16.4	17.2	18.0	24.4	16.5	17.2	18.0	24.4
Europe & Central Asia	..	96.0	106.3	93.6	..	96.0	106.6	93.8
Latin America & Caribbean	24.7	24.0	36.7	46.7	25.7	25.5	40.0	52.0
Middle East & North Africa	38.6	42.3	50.7	45.1	38.8	42.8	51.0	45.2
Sub-Saharan Africa	33.0	33.8	32.4	29.1	57.3	62.1	55.4	29.2

Source: World Bank WDI (2015).

to banks and non-bank financial institutions financing of SMEs. The official schemes are often set up with the primary motive of increasing the flow of finance and credit to SMEs to enable them increase their operational capacities, productivity and competitiveness in the local and international markets. With regards to informal sources of finance, many SMEs in SSA (especially those in Nigeria and Ghana) have made use of sources such as owner's savings, money lenders, friends and relatives, credit and savings associations, susu, etc. to finance their growth and transformation. See Appendix Table A1 for the key players in the SME finance industry in Ghana.

For most economies in SSA, there are comprehensive SME finance programmes that have been in place since the 1960s.

3. Literature

As already noted, the development of SMEs is often undermined by a number of factors, including inadequate finance, lack of managerial skills, equipment and technology, poor access to capital markets, among others (Steel and Webster, 1991; Aryeetey et al., 1994; Gockel and Akoena, 2002). A cursory look at the literature on SME development reveals that inadequacy of funds significantly constrains SME development (see, Aryeetey, 1994; World Bank, 1994; Parker et al., 1995; Arthur, 2003; Mensah, 2004; Deakins et al., 2008; Okpara, 2011).

A survey of the extant literature in Africa particularly reveals the existence of a finance gap in the SME sector (see, for instance, Sowa et al., 1992, for Ghana, and Daniels and Ngwira, 1993, for Malawi). Aryeetey et al. (1994), for example, reported that 38% of the SMEs surveyed mention credit as a constraint. It is also established that most SME loan applications in Africa are not granted (see Osei et al., 1993; Dawson, 1993; and Bani, 2003). In this vein, Aryeetey (1998) observed that only half of SMEs' applications for formal finance such as bank loans have any chance of success, and about two-thirds of loan applications by microenterprises were likely to be unsuccessful while Bigsten et al. (2000) observed that about 90% of small firms are denied credit from the formal financial sector due to their inability to fulfill conditions such as collateral security. Consistent with this, Osei et al.'s (1993) showed that about 95% of the SMEs depend solely on personal resources and loans from friends and relatives. Using data on firms in six African countries, Bigsten et al. (2003) found that among those firms which applied for a loan, small firms had substantially worse chances of getting a loan from banks. Berg and Fuchs (2013) found that the share of SME lending in the overall loan portfolios of banks in five Sub-Saharan African countries varies between 5 and 20%.

Hansen et al. (2012) showed that about 39.6%, 18.3% and 8.5% of small firms in Ghana, Kenya and South Africa respectively cited access to finance as a barrier to SME growth. Kuntchev et al. (2012) used data from the World Bank's Enterprise Survey which covered 13,685 companies across 38 sub-Saharan countries to examine SMEs access to finance. The authors observed a strong correlation between the size of a business and their access to credit, where smaller businesses are more likely to be credit 'constrained' and thus depicting the difficulties faced by small business entrepreneurs in securing loans from commercial sources. On the main sources of external finance for SMEs, Kuntchev et al. (2012) found that of the small businesses in sub-Saharan Africa that obtained external financing, 6.3% took the form of equity, 48.5% was formal external debt, 17.4% semi-formal financing and 27.8% informal financing. Gbandi and Amissah (2014) maintained that finance contributes about 25% to the success of SMEs in Nigeria and that more than 70% of funds available to SMEs are from the informal finance sector. Haselip et al. (2014) investigated the financing of energy SMEs

in Ghana and Senegal. They observed that the lack of access to affordable finance is the predominant, persistent, barrier to establishing and scaling up a commercially viable energy SME sector. Beck and Cull's (2014) study concluded that compared to other regions, enterprises in SSA are less likely to have a loan than those in other developing regions of the world. However, Abor and Biekpe (2006) established that, most SME operators possess no knowledge of, and do not make use of the various financing initiatives available to the SME sector in Ghana. There is also the perception that most of the schemes are difficult to access and hence, alternative sources of financing available to the SME sector remain largely untapped — a result that can be partly attributed to the stringent eligibility criteria for accessing these funds (Abor and Biekpe, 2006).

With regards to the drivers of SMEs financial constraints, a number of studies have investigated the causes of SSA SMEs' inability to acquire adequate external finance (Buatsi, 2002; Sacerdoti, 2005; Ghandi and Amissah, 2014). For instance, Sacerdoti (2005) noted that the inability of SMEs in SSA to provide adequate financial statements and quality collateral reduce their chances of accessing finance from formal financial institutions. Also, the absence of credible credit reference bureaus in most countries in SSA and its attendant effect of interest rates undermine the chances of SMEs gaining access to finance (Bass and Schrooten, 2005). Using a sample data of over 10,000 firms from 80 countries, Beck et al. (2003) found that the size, age and ownership of firms are the factors that explain and predict the obstacles that SMEs face. However, at the country level, institutional development is the only country characteristic that explains the cross-country variations in the financial difficulties faced by firms (Beck et al., 2003). Silva and Carreira (2010) revealed that the size of a firm and its cash flow are highly significant in influencing the firm's financial constraints whereas the age of the firm had no significant impact. A cross-country study by Schiffer and Weder (2001) revealed that the size of a firm is negatively related to the risk it poses to the lender. Beck et al. (2006), illustrate that larger, older firms and foreign-owned firms enjoy increased access to finance. In addition, Beck et al. (2004) show that, in terms of access to external finance, small firms benefit disproportionally from higher levels of property rights protection (see also Demirgüç-Kunt and Maksimovic, 1998). Investigating creditor protection, Love and Mylenko (2003) find that the presence of private credit registries in a country is associated with lower financing constraints and a higher share of bank financing.

Important empirical insights are also provided by the literature studying finance as a barrier to firm entry. Bertrand et al. (2007) suggest that the banking reform in France during the 1980s influenced product market competitiveness by increasing entry and exit of firms and lowering industry concentration, especially in bank-dependent industries. Guiso et al. (2004) analyse variations in financial development across Italian provinces and find that financial development enhances entrepreneurship. Cetorelli and Strahan (2004) show that increased competition among banks in the United States helped the creation of new firms due to enhanced access to finance. Similarly, Black and Strahan (2002) employ US data and find that that entry of new firms increased following deregulation. Overall, these studies provide evidence that financial development – through banking competition – increases credit availability and enhances entry and efficiency in the corporate sector, thus confirming the importance of access to finance.

Thus, from the above discussions, access to credit remains a challenge in the respective African countries reviewed. However, unpacking the reasons why SMEs are unable to access credit over time and comparatively across selected African countries will provide enormous policy lessons for sustainable development and poverty reduction and this forms the focus of the next section.

4. Methodology

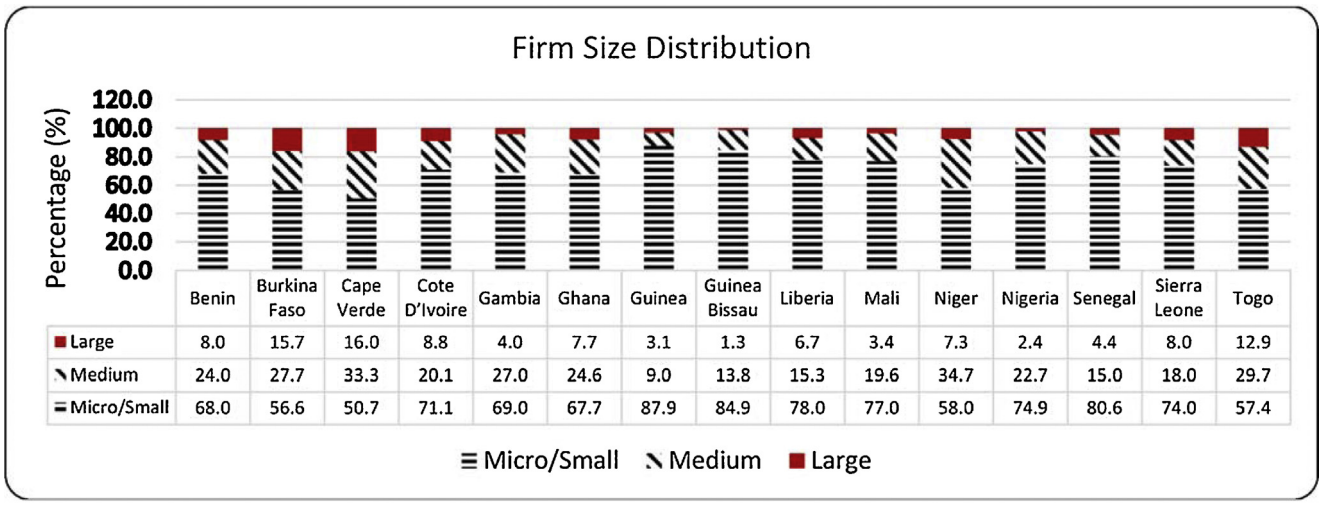
Within the financing constraints literature firm's access to finance has normally been modeled based on financial statements. For SMEs in developing countries this is impossible because financial data is limited. This is so because SMEs are not required to file detailed financial reports because most of these SMEs do not raise equity or debt from public markets. What has been readily available and has been mostly used are aggregate measures of financial development. The problem with such aggregate measures is that they do not provide the distribution of financing among such firms. SMEs will have differing access to finance and therefore the use of aggregate measures of financial depth masks the heterogeneity of firms' access to finance. As noted by Claessens and Tzioumis (2006) 'the only way to investigate firms' problems accessing finance is through tailored firm-level surveys directly addressing the issue of financing constraints' (pg. 6). This motivated our choice of the World Bank Enterprises survey data for our study.

In order to achieve our research objective, we estimate functionally the following:

$$Firm\ access\ to\ credit_{i,k} = \beta_0 + \beta_1\, firm\ characteristics_{i,k} + \beta_2 country\ characteristics_k + \varepsilon_{i,k} \quad (1)$$

Eq. (1) shows a functional relationship between firm's access to credit (on one hand) and, firm characteristics and country characteristics (on the other). In this equation, the firm characteristics is represented in a vector form comprising of firm's attributes like age of the firm, size of the firm, gender of top manager, and experience of top manager as reported by firm i in country k. The country characteristics variable also represents a set of dummies that controls for country-specific factors that are unobservable and may influence a firm's access to credit. The dependent variable (firm access to credit) represents both specific and general problems faced by firm i in country k.

In line with the objective to investigate the determinants of firm's access to finance, we have used four measures of access to finance from the enterprise survey data. For robustness checks, we have developed both subjective and objective measures of access to finance. Access to finance 1, 2 and 3 are subjective measures whilst access to finance 4 is an objective measure. Access to finance 1 is a binary variable, which equals one if a



	Benin	Burkina Faso	Cape Verde	Cote D'Ivoire	Gambia	Ghana	Guinea	Guinea Bissau	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	Togo
Large	8.0	15.7	16.0	8.8	4.0	7.7	3.1	1.3	6.7	3.4	7.3	2.4	4.4	8.0	12.9
Medium	24.0	27.7	33.3	20.1	27.0	24.6	9.0	13.8	15.3	19.6	34.7	22.7	15.0	18.0	29.7
Micro/Small	68.0	56.6	50.7	71.1	69.0	67.7	87.9	84.9	78.0	77.0	58.0	74.9	80.6	74.0	57.4

Chart 1. Firms size distribution.

Source: World Bank (2015).

firm indicates that access to finance is an obstacle and zero if it is not an obstacle. Access to finance 2 is derived from the top three obstacles that the firms face (ranked in order of severity). Our measure of access to finance 2 is a relative measure taking a value of 1 if the firm indicates access to finance as the third obstacle, 2 if it is the second and 3 if it is the number one obstacle faced by the firm. A firm that does not indicate access to finance as an obstacle has a zero value. Access to finance 3 is a relative measure of the severity of access to finance as an obstacle to the firm. The severity index takes a value zero if it is not an obstacle; 1 if minor, 2 if moderate, 3 if major and 4 if very severe. These three measures would be used for the robustness checks analysis.

With regards to access to finance 4, we attempt to obtain an objective measure of a firm's access to finance which we derived from the shares of internal and external financial resources of working capital. It takes a value of zero if the firm uses internal resources to finance at least 75% of its working capital, 1 if internal resources contribute between at least 50% but less than 75% of working capital, 2 if between at least 25% and below 50% and 4 if the internal resources are less than 25% of working capital. According to the pecking order theory, because the cost of financing increases with asymmetric information, when it comes to methods of raising financial resources for working capital, firms prefer financing that comes from internal funds, before resorting to external finance in the form of debt, and issuing new equity in that order[2].

Accordingly, the model containing finance 1 as the dependent variable is estimated using the binary probit model while the models containing finance 2 and 3 are estimated using the multinomial probit model. The last model which captures finance 4 as the dependent is estimated using the ordered probit model. Also, the estimations are conducted both at the sub-regional level and at the country-level. Finally, we would discuss the results from the estimations that made use of access to finance 4 (which is an objective measure of access to finance) as the dependent variable. The other three subjective measures (access to finance 1, 2 and 3) will be used for robustness checks/sensitivity analysis.

4.1. Data and summary statistics

The Enterprise Surveys are conducted by the World Bank and its partners across all geographic regions and cover small, medium, and large companies. The data is obtained from several cross-country surveys across several years with an 'access to finance' component. It also contains some questions regarding sources of funds for investments and collateral requirements that reveal substantial variation of financing practices across firms and countries.

Chart 1 shows the size distribution of firms in each country that constitute our sample. Generally there is a preponderance of small firms in all the countries within the sub region and relatively fewer large firms. Cape Verde, Burkina Faso and Togo reported the highest percentage of medium and large firms of 49.3%, 43.4% and 42.6% respectively, while Guinea reported the least of 12.1%.

Our study is based at the sub-regional level all the 15 member countries of ECOWAS and at the country level on 6 member countries including Ghana, Mali, Senegal, Gambia, Guinea, and Cote D'Ivoire. The choice of these six countries is based on data suitability and the 2014 ranking of "getting credit" distance to the frontier index of the countries in West Africa in 2014.

Strikingly, unlike most countries within the sub-region Cape Verde has the least percentage of firms and were mostly micro/small-sized firms (50.7%), with Guinea Bissau accounting for the most of about 88%. Table 2 reports summary statistics on a number of indicators relating to access to credit by sam-

[2] Source: Boundless (2014). "Pecking Order Consideration." Boundless Finance. Boundless, 30 Dec. 2014. Retrieved 16 Apr. 2015 from https://www.boundless.com/finance/textbooks/192/capital-structure-13/capital-structure-considerations-102/pecking-order-consideration-440-7966/.

Table 2
Summary statistics on measures of access to credit within ECOWAS.

Country	Collateral as % of loan	Loans req. collateral (%)	% of firms that Bank	% that use Bank for WC	% access to finance a major obstacle
B- Fasso	173.9	90.0	98.0	34.7	72.0
Benin	293.4	89.3	96.7	39.4	60.8
Cape Verde	157.4	93.2	92.2	45.5	39.2
Cote D'Ivoire	59.1	74.5	70.8	8.2	70.3
Gambia	192.2	86.2	72.4	14.4	40.8
Ghana	178.3	71.6	90.3	20.7	63.8
Guinea	95.0	53.8	53.4	2.7	60.1
Guinea Bissau	63.8	80.0	60.7	1.3	73.6
Liberia	53.3	73.3	66.4	17.3	35.4
Mali	176.1	63.5	79.5	13.6	55.8
Niger	200.9	83.1	96.6	35.9	51.0
Nigeria	129.0	80.2	–	4.9	56.0
Senegal	122.0	88.2	83.6	9.1	48.2
Sierra Leone	51.2	89.7	68.7	28.7	37.3
Togo	265.9	80.0	96.1	21.1	52.3

pled firms operating within the various countries within the sub region.

5. Analysis and discussion of results

In this section, we discuss the determinants of firms' access to finance using our objective measure of access to finance at the sub-regional level as well as at the country level. For robustness sake, we juxtapose these findings with additional estimations that employ some subjective measures of access to finance.

5.1. Sub-regional analysis

The results shown in Table A2 column 3 relate to access to finance 4 after controlling for sector of activity and country specific effects. Generally, access to finance is significantly driven by factors such as firm age, firm size, ownership, experience of the top manager (at 10% level of significance), strength of legal rights, depth of credit information, firm performance (at 10% level of significance) and sector of activity. Table 3 shows estimates of the marginal effects after controlling for country characteristics. We find that firm's age significantly increases firm's access to finance from external sources and this buttresses the fact that older firms are less likely to have difficulties in accessing finance compared to newer firms.

Specifically, an increase in the age of a firm improves the likelihood that the firm would devote less than 75%[3] of its internal resources for working capital, indicating improved access to external sources of financing working capital. Similarly, it is evidenced that larger firms are significantly more likely to gain access to external finance relative to smaller firms in West Africa. For instance, relative to smaller firms, larger firms are about 24.0%, 17.0% and 16.0% significantly more likely to devote between 50–75%, 25–50%, and less than 25% respectively of their internal resources for working capital.

This shows that size matters for access to external finance by SMEs in West Africa. This is in line with the findings that larger firms are more likely to gain access to finance than smaller firms (see Beck et al., 2006; Buatsi, 2002; Bigsten et al., 2003; Kuntchev et al., 2012). Large firms do not face challenges in accessing external finance because, unlike small firms, large firms have adequate collateral, able to prove creditworthiness, adequate credit history and a developed bank-borrower relationship necessary for securing external funding. Further, relative to domestic ownership, foreign ownership significantly improves firm's ability to obtain external financing with foreign firms having about 4.0% more likelihood to use between 50 and 75% of their internal resources as working capital relative to 75% of their internal resources.

Additionally, improvement in the strength of legal rights increases firm's access to external financing, while improvement in the depth of credit information leads to about 0.4% reduction in the likelihood of firms to use 50–75% of their internal resources for working capital relative to using at least 75 of their internal resources for working capital (see, Table 3). This implies that, improvement in the depth of credit information constrains firm's ability to access external sources of financing and so firms are forced to rely heavily on their internal resources to finance working capital.

5.2. Country level analysis

In order to unmask important differences in the influential factors across countries, country specific analysis is conducted. Using access to finance 4 as a dependent variable, we find that access to finance is significantly influenced by factors such as firm age, firm size, gender of top manager, ownership, experience of top manager, formality, and firm performance at least in one of the estimations as shown in Table A2. Specifically, the determinants of access to finance varies across countries: whereas in Ghana, access to finance is significantly influenced

[3] This statement should be interpreted with reference to the base group. The base group is 0, representing the case when a firm uses at least 75% of its internal resources for working capital.

Table 3
Pooled ordered logit results (marginal effects): access to finance 4 — ECOWAS.

Variables	Dependent variable: access to finance 4		
	Outcome (1)	Outcome (2)	Outcome (3)
Firm age	0.003**	0.002**	0.002**
	(0.000)	(0.000)	(0.000)
Firm size	0.024***	0.017***	0.016***
	(0.005)	(0.004)	(0.003)
Gender of top mgr. (fe)	0.016	0.012	0.012
	(0.017)	(0.014)	(0.014)
Foreign ownership	0.040***	0.033***	0.034***
	(0.009)	(0.009)	(0.010)
Experience of top manager	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)
Formality status	0.023	0.014	0.013
	(0.083)	(0.047)	(0.041)
Exporter	0.002	0.002	0.002
	(0.010)	(0.007)	(0.007)
Strength of legal rights index	0.013***	0.009***	0.008***
	(0.002)	(0.001)	(0.001)
Depth of credit information index	−0.004*	−0.002*	−0.002*
	(0.002)	(0.001)	(0.001)
Firm performance	−0.000	−0.000	−0.000
	(0.000)	(0.000)	(0.000)
Sector (service)	−0.006	−0.004	−0.004
	(0.006)	(0.004)	(0.004)
Control for country effect	Yes	Yes	Yes
Observations	5065	5065	5065

Dependent variable: access to finance 4 = 0 if firm uses at least 75% internal resources for working capital; = 1 if between 50–75%; = 2 if between 25–50%; = 3 if below 25%. Robust standard errors in parentheses.

by factors such as firm size and formality, access to finance is significantly driven by; firm size, gender of top manager, and formality in Mali; ownership, experience of top manager, formality and firm performance in Senegal; and firm age, ownership, and experience of manager in Gambia. These variations in the importance of the various covariates in explaining firms' access to finance across the countries reflects, in particular, country specific constraints in firms' access to finance.

Also, consistent with the work of Beck et al., 2006; Buatsi, 2002; Bigsten et al., 2003; Kuntchev et al., 2012, we observe that the older firms are significantly more likely to gain access to finance compared to newer firms in Gambia. For instance, an increase in the age of a firm improves the likelihood of the firm to use less than 25% of its internal resources for working capital by about 0.5% relative to using at least 75% of its internal resources. This may mean that older firms have wider networks including financial institutions such as banks and suppliers, making it easy for them to access credit for their operations. Also, firm size is significantly positively associated with the probability of having access to finance in Ghana and Mali. In Mali, for example, an increase in the size of a firm raises the probability of that firm using less than 25% of its internal resources for working capital by a little over 3% relative to using at least 75% of its internal resources for working capital (see Table 4). The importance of the age and size variables in our model of access to finance is consistent with the results obtained by Beck et al. (2003).

Strikingly, gender of top manager significantly determines firm's access to finance but only in Mali. This result is striking as it contradicts the conventional notion that women disproportionately face barriers to financial access compared to their male counterparts, thus requiring us to dig into what peculiar characteristics of the Malian economy might help explain this phenomenon. We explain this conundrum as follows: first, this could be due to government policy measures to tailor its support for SMEs more in favor of women-owned businesses in order to meet the Millennium Development Goals (MDGs); second, compared to men, Malian women are largely engaged in small businesses that do not require huge investments, thus providing very little incentive for them to solicit for external finance such as borrowing from banks and other financial institution. Given these, it would be realized that female top managers are less likely to face difficulties in accessing finance compared to their male counterparts.

In addition, relative to domestic-owned firms, foreign-owned firms are more likely to use less than 75% of their internal resources for working capital compared to using at least 75% of their internal resources for working capital in Senegal. Further, an increase in the experience of a top manager increases a firm's probability of using less than 75% of its internal resources for working capital relative to using at least 75% of its internal resources for working capital in Senegal. In particular, we find that, an increase in the experience of top manager raises the likelihood of a firm to use less than 25% of its internal resources for working capital relative to using at least 75% of its internal resources for working capital in Senegal by about 0.2% (Table 4).

Table 4
Ordered logit country level regressions (marginal effects).

Regressors		Dependent variable: access to finance 4			
		Ghana	Mali	Senegal	Gambia
Outcome (1)	Firm age	0.000	0.001	−0.001	−0.002
		(0.001)	(0.002)	(0.001)	(0.001)
	Firm size	0.044***	0.115***	0.008	−0.016
		(0.014)	(0.030)	(0.023)	(0.019)
	Gender of top mgr. (fe)	−0.022	0.172**		
		(0.035)	(0.068)		
	Foreign ownership	−0.017	0.030	0.082***	−0.057
		(0.034)	(0.067)	(0.016)	(0.041)
	Experience of top manager	0.000	−0.001	0.003*	0.002
		(0.001)	(0.002)	(0.001)	(0.002)
	Formality status	−0.067***	0.196***	−0.038	
		(0.009)	(0.020)	(0.098)	
	Firm performance	0.000	0.001	0.002*	−0.001
		(0.000)	(0.001)	(0.001)	(0.001)
Outcome (2)	Age	0.000	0.000	−0.000	0.005*
		(0.001)	(0.000)	(0.001)	(0.003)
	Firm size	0.028***	0.015**	0.005	0.043
		(0.009)	(0.006)	(0.013)	(0.044)
	Gender of top mgr. (fe)	−0.013	0.035		
		(0.019)	(0.026)		
	Foreign ownership	−0.010	0.004	0.077**	0.087**
		(0.019)	(0.010)	(0.033)	(0.042)
	Experience of top manager	0.000	−0.000	0.001*	−0.005
		(0.001)	(0.000)	(0.001)	(0.003)
	Formality status	−0.101***	0.021***	−0.109***	
		(0.018)	(0.006)	(0.023)	
	Firm performance	0.000	0.000	0.001*	0.002
		(0.000)	(0.000)	(0.001)	(0.001)
Outcome (3)	Age	0.000	0.000	−0.001	0.005*
		(0.001)	(0.001)	(0.001)	(0.003)
	Firm size	0.021***	0.033***	0.006	0.045
		(0.007)	(0.010)	(0.017)	(0.045)
	Gender of top mgr. (fe)	−0.010	0.086		0.124*
		(0.014)	(0.067)		(0.070)
	Foreign ownership	−0.008	0.009	0.139*	
		(0.014)	(0.022)	(0.082)	
	Experience of top manager	0.000	−0.000	0.002*	−0.005*
		(0.001)	(0.001)	(0.001)	(0.003)
	Formality status	−0.102***	0.041***	−0.334	
		(0.022)	(0.009)	(0.288)	
	Firm performance	0.000	0.000	0.002*	0.002
		(0.000)	(0.000)	(0.001)	(0.001)
Controlled for export status and sector of activity		Yes	Yes	Yes	Yes
Observations		894	509	407	177

Dependent variable: access to finance 4 = 0 if firm uses at least 75% internal resources for WC; = 1 if between 50–75%; = 2 if between 25–50%; = 3 if below 25%.
Robust standard errors in parentheses.
*** $p < 0.01$.
** $p < 0.05$.
* $p < 0.1$.

Relative to non-formal firms, formal firms are significantly less likely to use less than 75% of their internal resources for working capital as against using at least 75% of their internal resources for working capital in Ghana, indicating a relative scarcity of external financing options available to formal firms. In contrast, however, it is realized that, in Mali, formal firms are significantly more likely to devote less than 75% of their internal resources as working capital compared to informal firms. This finding lends credence to the fact that formality is often seen as an important criterion to accessing external finance since formal firms are to a large extent able to meet loan requirements than non-formal firms. Firm performance is significantly positively related to access to external finance but only in Senegal. For example, an improvement in the performance of a firm raises

(about 0.2%) the likelihood of the firm to devote less than 25% of its internal resources for working capital compared to using 75% and above of its internal resources for working capital as shown in Table 4.

5.3. Robustness checks

As a robustness check we estimated three different models of the logistic regressions to predict the likelihood of the regressors explaining a firm's access to finance. The three subjective measures used are access to finance 1, 2 and 3. We did this both for the sub-regional level and the country level. The results obtained[4], largely confirm what we found in our core model. At the sub-regional level, therefore, access to finance is driven by factors such as larger firms, firms owned by foreigners and strength of legal rights while variables such as age, firm size, ownership, experience of the top manager, depth of credit information, firm performance and sector of activity attained statistical significance, at least in one of the equations, at the country level. Thus, whereas the sub-regional level analysis obscures some important differences in terms of the influence of the various explanatory variables on access to finance, the county level analysis delineates these differential effects. For instance, it is only in Ghana that the depth of credit information is an important factor linked to firm's access to finance. This suggests that as lenders become more aware of the credit history of potential borrowers, firms with bad credit history find it difficult to obtain external finance, in particular, bank loans.

6. Conclusions and policy implications

The overall objective of this study is to examine SMEs access to finance within the West African sub-region with particular interest in establishing whether there are similarities and/or differences in the determinants of SMEs' access to finance across countries in SSA. Specifically, the study pursued the following research goals: (1) explore alternatives to SME financing within the ECOWAS sub-region; (2) predict SME access to credit using firm specific characteristics and other controls for selected countries in the ECOWAS sub-region.

In order to achieve the first research objective, we conducted an extensive review of financing options available to SMEs in West Africa. In most West African countries, long-term financing in terms of equity capital is virtually non-existent for the SME sector. This makes debt financing the dominant channel through which SMEs can access funds. Unfortunately, however, the SME sector in most countries within the ECOWAS sub-region faces serious constraints in accessing formal finance and this problem is connected to factors such as SMEs' lack of collateral, difficulties in providing creditworthiness, small cash flows, inadequate credit history, high risk premiums, underdeveloped bank-borrower relationships and high transaction costs. To fill the finance gap of the SME sector, most economies, especially those in Africa have developed comprehensive SME finance programmes, many of which can be traced back to the 1960s. Governments, over the years, have used interest rate subsidies, directed lending, guarantee funds and a variety of other approaches to fuel the financing needs of the SME sector but all to no avail.

In line with the second objective of the study, we have used four measures of access to finance from the World Bank's Enterprise Survey data set. For robustness sake, we developed both subjective and objective measures of access to finance. Also, the examination of the determinants of access to finance is estimated at the sub-regional level as well as at the country-level. Generally, at the sub-regional level, it is clear that access to finance is strongly determined by factors such as firm size, ownership, strength of legal rights, depth of credit information, firm's export orientation and the experience of the top manager. Further, it is observed that the use of different measures of access to finance, in particular, the use of subjective vis a vis objective measures of access to finance did not matter much for the importance of the correlates of access to finance in SSA. The results obtained at the country level, however, bring to bear some important differences in what explains firms' access to finance at the country level.

The findings of this study therefore have important implications for policy: First, since formality strongly influences SMEs' access to credit, the study suggests that SMEs in SSA must take giant steps towards formalisation in order to increase their potential for accessing formal credits. Second, given that firm size and depth of credit information are key to accessing credit, the study recommends that SMEs should join Business Associations and seek group credit schemes. Related to the above, these associations should also promote credit information among potential borrowers as a way of reducing information asymmetry in the credit market. This would go a long way to boost creditor confidence as bad borrowers will be clearly identified and refused credit. Third, the findings that ownership matters for the probability of accessing credit imply that African SMEs can learn from their foreign counterparts in order to position themselves for institutional borrowing. Finally, past accounts of government supported credit schemes to the SMEs sector indicates a serious lack of efficiency and transparency in the operation of such schemes. As a remedy, we maintain that future governments as well as international donor interventions must be administered efficiently and transparently.

Appendix A

[4] Due to space limitations, we do not report these estimations. However, they can be made available upon request.

Table A1
Pooled ordered logit results: ECOWAS sub-region.

Regressors	Dependent variable:	
	Access to finance 3 (severity index)	Access to finance 4 (pecking order)
Firm age	−0.00685**	0.000604*
	(0.00324)	(0.000327)
Firm size	−0.418***	0.187***
	(0.0505)	(0.0535)
Gender of top manager (female = 1)	−0.0190	0.0569
	(0.130)	(0.190)
Ownership (foreign = 1)	−0.514***	0.487***
	(0.0979)	(0.120)
Experience of top manager	0.00438	0.00642*
	(0.00369)	(0.00351)
Formality status	−0.743	0.0172
	(0.493)	(0.745)
Exporter	0.0320	0.0467
	(0.0999)	(0.103)
Strength of legal rights index	0.0130	−0.286***
	(0.0559)	(0.0840)
Depth of credit information index	−0.0121	0.0130
	(0.0198)	(0.0222)
Firm performance	−6.16e-05	0.00227*
	(0.00107)	(0.00138)
Sector of activity (services)	−0.228***	−0.121**
	(0.0656)	(0.0589)
Controlled for country effects	Yes	Yes
Observations	3428	5065

Dependent variable: access to finance 3 (severity of access to finance as an obstacle (1–4; 0 = no obstacle); access to finance 4 = 0 if firm uses at least 75% internal resources for working capital; = 1 if between 50–75%; = 2 if between 25–50%; = 3 if below 25%. Robust standard errors in parentheses.
*** p < 0.01.
** p < 0.05.
* p < 0.1.

Table A2
Pooled ordered logit results: (access to finance 4) — country specific.

Regressors	Dependent variable: access to finance 4			
	Ghana	Mali	Senegal	Gambia
Firm age	0.000116	0.0114	−0.00724	0.0407**
	(0.00917)	(0.0157)	(0.0142)	(0.0207)
Firm size	0.380***	0.887***	0.0881	0.360
	(0.113)	(0.223)	(0.241)	(0.359)
Gender of top mgr. (F = 1)	−0.188	1.290**		
	(0.288)	(0.632)		
Ownership (foreign = 1)	−0.147	0.224	1.244**	0.862**
	(0.278)	(0.487)	(0.497)	(0.432)
Experience of top mgr.	0.00191	−0.0110	0.0281*	−0.0387*
	(0.00950)	(0.0172)	(0.0151)	(0.0220)
Formality status	−1.123***	−12.69***	−2.141*	
	(0.174)	(0.612)	(1.207)	
Exporter	0.0235	0.0628	0.447	−0.448
	(0.184)	(0.316)	(0.308)	(0.477)
Firm performance	0.000819	0.00394	0.0261**	0.0143
	(0.00276)	(0.00441)	(0.0132)	(0.0109)
Sector of activity (services)	−0.142	−0.0190	0.153	0.167
	(0.146)	(0.214)	(0.218)	(0.430)
Observations	894	506	407	118

Dependent variable: access to finance 4 = 0 if firm uses at least 75% internal resources for working capital; = 1 if between 50–75%; = 2 if between 25–50%; = 3 if below 25% Robust standard errors in parentheses.
*** p < 0.01.
** p < 0.05.
* p < 0.1.

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