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Foreign Direct Investment in Sub-Saharan Africa: Determinants and Location Decisions



RESEARCH AND STATISTICS BRANCH
WORKING PAPER 08/2008

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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna, 2009

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Abstract

This paper examines the determinants of Foreign Direct Investment decisions in relation to location factors in Sub-Saharan Africa (SSA). Principal components factor analysis reveals that foreign firms are primarily concerned with political economy in SSA that ensures a sound investment climate and transparent legal framework. This finding remains unchanged when controlled for two clusters of host countries. Other important factors in the investment location decision are international trade agreements and production inputs.

KEY WORDS: Foreign Direct Investment Motivation, Determinants, Multinational Enterprises, Sub-Saharan Africa

1 Introduction

Sub-Saharan Africa's (SSA)¹ economic performance (Fosu, Krishnan and Ndikumana 2004), despite improvements regarding commodities and trade with China and India, has been relatively poor² in comparison with South-East and East Asia (Arrighi 2002; Ayittey 2005; Lall and Kraemer-Mbula 2005), where Foreign Direct Investment (FDI) has played a major role in economic development. Nevertheless, SSA performance since 2002 has improved with real GDP growth rates moving from 3% to 4% (2002) to 5% to 6% (2006) (IMF 2007).

Growth accounting empiricists have identified sources of total factor productivity that stimulate FDI (Khawar 2005; Roy and Van den Berg 2006), inter alia positive externalities derived from investment and trade openness (Bartels 2007), as well as reasons for weak growth in SSA (Easterly and Levine 1997; Durlauf and Quah 1998; Pattillo et al. 2005). The analysis indicates the general inability of policy makers in SSA to cohere the complex institutional and managerial linkages among the 'deep determinants' of income³ (Rodrik and Subramanian 2003). Despite relatively poor SSA economic conditions, FDI inflows have risen from US\$5 billion (1995) to US\$18 billion (2005) even though Africa's share in world FDI inflows have declined over the long-term (UNCTAD 2006, pp. 40-41; UNIDO 2007[a]).

The global trends within which FDI occurs are: the superior rate of world trade growth compared to world output growth since 1960s; the superior rate of FDI growth compared to world trade growth during 1980-2000; three-quarters of world trade occurring *internally* within the international operations of Multinational Enterprises (MNEs) as geo-spatially distributed intra- and inter-firm relations⁴; the superior rate of growth in vertically integrated

¹ Sub-Saharan Africa refers to the following 47 countries: Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo, Democratic Republic of the Congo, Côte d'Ivoire, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, Sudan, Swaziland, Tanzania, Togo, Uganda, , Zambia, Zimbabwe. South Africa is not included in the sample of SSA countries unless it is explicitly indicated.

² Sub-Saharan African (SSA) countries feature prominently in the Failed States Index 2007 compiled by Foreign Policy July/August 2007. The 1980-2002 period was one of dismal GDP per capita performance. Thirty out of forty-five SSA economies experienced either negative compound annual growth or between 0% and 1% in real GDP per capita. The rest performed at rates between 1% and 4% real GDP per capita growth [Multilateral Economic Development Efforts in Sub-Saharan Africa, Brett D. Shaefer, Heritage Lectures, No.858, 6 November 2004].

³ These are geography, institutions and integration with world economic activity.

⁴ Approximately 70% to 80% of world trade is either within or between, MNEs.

intra-industry trade ($\approx 30\%$ of world trade) compared to FDI growth; and the superior rate of growth of financial capitalism compared to world output growth⁵.

Global inflows of FDI, with twin peaks in 2000 (US\$1.4 trillion) and 2006 (US\$1.3 trillion), have been influenced by two major developments (Buckley 2003). The first is market liberalisation and deregulation associated with multilateral agreements and structural adjustment conditionalities. MNEs—the main actors intermediating the world economy—therefore benefit from a wider range of investment locations to suit their strategic and operational objectives. The second is the managerial capability and tentacular reach of MNEs that enable worldwide orchestration of integrated production—the spatial location of manufacturing operations and distribution of services—through horizontal and vertical FDI (Urata and Kawai 2000; Buckley and Hashai 2004). MNEs act as governors of asset and information networks of internalised transactions between multi-supply sources, transformational multi-production bases (Dunning 2003) and multi-sales subsidiaries for efficient distribution. Thus, MNEs reduce costs and increase market shares and competitiveness (Bartels and Pass 2000; Buckley and Ghauri 2004).

SSA suffers from the disparities of globalisation (Chang 2007). Its regional trade agreements are incoherent (Schiff and Winters 2003; Yang and Gupta 2005). Foreign capital is comparatively sparse (UNCTAD 2006). SSA's share of world FDI inward stocks is disappointingly about 1%. Asymmetries persist within the region with the bulk of FDI inflows to the primary resource sector. Empirical research on FDI in SSA tends to be limited, with relatively few academic journal articles (Bartels et al. 2002). Given the trade and financial linkages between industrialised, emerging and developing economies (Akın and Kose 2008), and threats to FDI⁶, FDI inflows to SSA warrant examination. Of special interest are FDI location decision determinants. We are primarily interested in determinants in the pre-investment phase.

This paper identifies, through factor analysis of location variables from 718 foreign investors and MNEs⁷ in 11 SSA countries, the determining factors of FDI. The paper is organised as follows: the next section addresses strands of literature concerning motives for FDI. The

⁵ See “Unfettered finance is fast reshaping the global economy”, Martin Wolf, *Financial Times*, 18 June 2007.

⁶ See “Left in the cold: Foreign bidders find themselves out of favour”, Alan Beattie, Stephanie Kirchgaessner and Raphael Minder, *Analysis*, *Financial Times*, 25 April 2008, p. 9.

⁷ Throughout this paper the terms foreign investors and MNEs are used interchangeably.

third section deals with FDI trends. Empirical analysis in the fourth section sheds light on the determinants of FDI. Section five discusses results. Section six concludes.

2 Literature review

A formal definition for FDI, as a phenomenon of international business, is investment “that reflects the objective of a resident entity in one economy obtaining a lasting interest in an enterprise resident in another economy” (IMF 1993, p. 86). The resident entity (foreign investor) owns an equity capital stake of at least 10% of the ordinary shares in an incorporated enterprise, or its equivalent for an unincorporated enterprise. This reflects a long-term relationship between the investor and the enterprise, and implies a significant degree of influence by the investor in enterprise management⁸. In contrast, foreign *portfolio* investors possess an equity stake of less than 10% (OECD 1996). A direct investment enterprise can be a subsidiary (a non-resident investor owns more than 50%), associates (an investors owns 50% or less) and branches (wholly or jointly owned unincorporated enterprises) either directly or indirectly owned by the foreign investor. The influence by the foreign investor on the enterprise arises from firm specific ownership, monopolistic or oligopolistic, advantages that allow MNEs to outperform indigenous firms in international business and local markets (Kindleberger 1969; Caves 1971; Hymer 1976; Jensen 2006).

The ability to dominate transaction and transformation in international business is due to MNEs’ internalisation processes and product evolution (Vernon 1966, 1974). The MNE configures and reconfigures locational decisions as a function of the transaction costs of stages of production and outsources operational capacities to countries with competitive exchange rates and productivity-adjusted costs of labour (Razafimahefa and Hamori 2005).

The transaction cost approach to FDI argues that firms’ activity to serve markets is far from costless (Coase 1937, 1972). A transaction cost occurs, when a product or service “is transferred across a technologically separable interface” (Teece 1984, p. 99). In order to avoid market failure, non-fully contingent contracts, asymmetries in information and

⁸ To put the phenomenon of inward FDI and its associated stock in perspective, FDI inflows in 2005 at US\$916 billion represented about 10% of global gross fixed capital formation while inward FDI stock at US\$10,130 billion was about 23% of global GDP at 2005 current prices. Furthermore, according to UNCTAD (2006) the total sales of foreign affiliates at US\$22,171 billion represents about 50% of global GDP, while the ratio total assets of foreign affiliates to global GDP is US\$45,564 billion to US\$44,674 billion.

knowledge, firms internalise markets (Williamson 1979; Buckley and Casson 1985). The transaction cost theory is therefore an important antecedent of the internalisation theory which is founded on imperfect markets in general, and on imperfections in intermediate product markets in particular (Dunning 2003). An efficiency-seeking firm has incentives to bypass imperfect markets by incorporating such markets under common ownership, control and governance. MNEs are generated because of the internalisation of cross-border (intermediate) markets (Buckley and Casson 1976).

The eclectic paradigm avows that FDI is determined by the dynamics of three interdependent variables – firm specific ownership advantages (O), location specific advantages (L) and cross border intermediate product and/or market internalisation advantages (I) (Dunning 2000). The first condition for international production is possession of ownership-specific advantages superior to indigenous firms (Dunning 1977; Dunning (ed.) 1985). There are two main types of ownership advantages: property rights and/or intangible assets that form the knowledge resource structure of the investing firm; and management assets enabling the firm to organise efficiently—to co-ordinate value-added, or transformational, activities in geographically different locations for transaction cost minimisation—and to use accumulated experience for risk diversification. Consequently, MNEs predominate in high R&D expenditure industries that manufacture innovative, technically complex and differentiated products (Markusen 1995; Cantwell and Mudambi 2000).

To complement transportable firm specific advantages, MNEs seek different types of immobile locational advantages according to combinations of different motives for foreign production (Dunning 1993). These fall into efficiency-, market- and strategic asset-seeking categories within the rubric of: cost-based factors; vertical integration; investment climate; host and regional market factors; ‘push’ (parent country encouragements); and ‘pull’ (host government inducements) (Dunning 2000). Strategic asset- or resource-seeking MNEs focus on supply-oriented variables (Castro 2007), and assets for the economic growth of the home country (Jenkins and Edwards 2006; Ndikumana and Verick 2008)⁹. Market-seeking MNEs focus on demand-oriented variables. Efficiency-seeking MNEs wish to reduce transaction costs and enhance productivity through economies of scale.

⁹ This is cogent in the light of recent evidence of increasing outward FDI from China and India particularly and Asia in general into SSA (see *The New Colonialists: A Special Report on China’s Thirst for Resources*, *The Economist*, Vol. 386, No. 8571, 15 March 2008).

Given the differentiated attractions of alternative locations, MNEs take different paths to leverage core competencies in the most efficient way. FDI is likely if the net benefits of own foreign production, integrated along global value (and supply) chains, exceed those of inter-firm agreements (UNIDO 2003[c]).

Once the MNE sees its “wish-list”¹⁰ (UNIDO 2003[a], p. 301) well met in a location, and its OLI advantages are competitive, it may favour FDI as a function of location factors: policy (Bende-Nabende 2002), infrastructure (Ayanwale 2007) and investment governance (Naudé and Krugell 2007; Bartels and Alladina 2008/09), in relation to entry mode options within autonomous and dependent intermediation (Bartels and Pass 2000; Raff, Ryan and Stähler 2007, 2008). The FDI performance and future prospects determine divestment or re-investment (Marcin 2008). Spatial agglomeration effects (Giroud and Delane 2008) can lead to rival investors who are forced—in the case of ‘follow the leader’—to invest in the same location (Knickerbocker 1973; Birkinshaw and Hood 2000).

FDI impinges not only host location factors by crowding-in domestic investment (Ndikumana and Verick 2008) and real exchange rate appreciation (Lartey 2007), but also changes the strategic objectives and characteristics of the firm per se through learning, acquiring competitors or forming joint ventures (Bartels et al. 2002; Mahnke et al. 2005) and executing a real options strategy (Trigeorgis 1996). Furthermore, relations between investors and non-market actors are marked by co-operation and conflict between firms and political actors (incumbent government and insurgents) (Boddewyn and Brewer 1994). Clearly, the characteristics of locations are crucial to FDI¹¹.

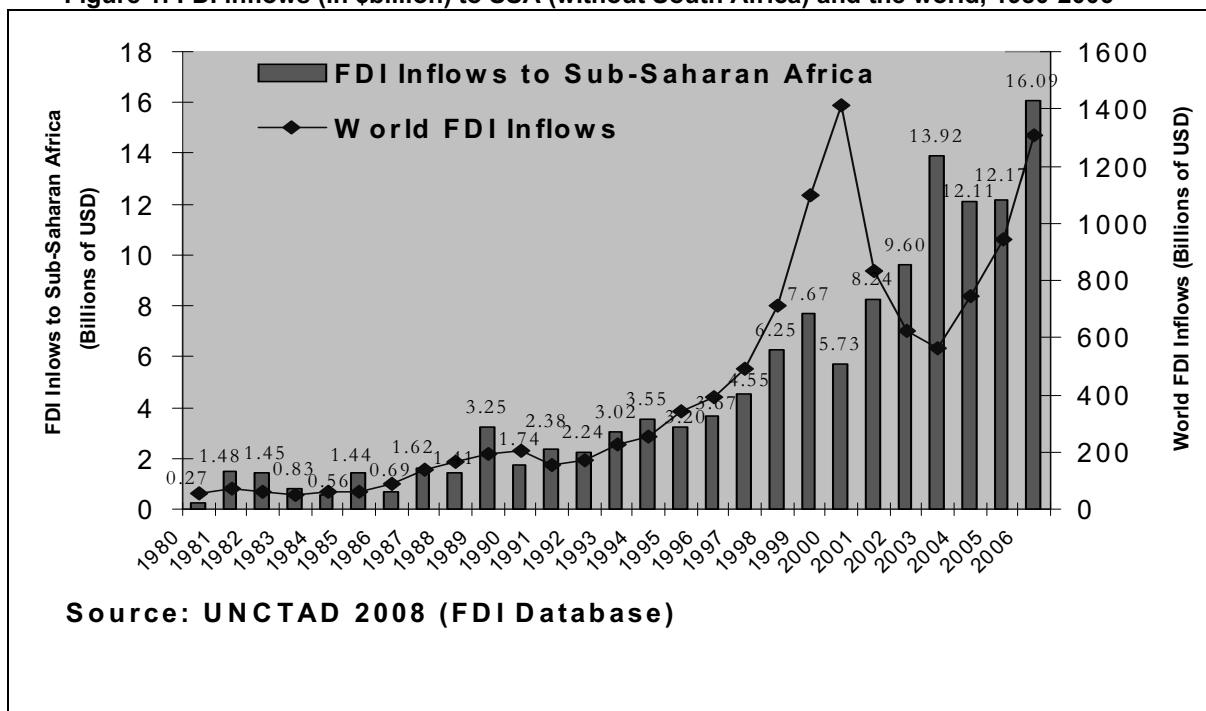
¹⁰ Political stability (because capital investments are time framed longer than the incumbency of elected governments or electoral cycle), Economic stability (economic strength through a ‘fabric’ of transactions, intermediation, sub-contracting that is robust), International outlook (global in thinking/behaviour with respect to best practice and policy framework), Government regulations (clarity and consistent interpretation of rules; purpose of regulations), Infrastructure (distribution logistics efficiencies and operabilities; data communications/infrastructure), Labour (profile of skills), Banking/Finance (strong intermediation capabilities and capacities), Government attitude (service orientation), Local business infrastructure (backward and forward linkages) and Quality of life (personal safety/health/education lifestyle).

¹¹ See “Foreign Direct investment and the Locational Competitiveness of Countries”, John Dunning and Feng Zhang, Paper at UNCTAD 2007 Conference in Honour of Sanjaya Lall, for the correlation between competitiveness and share of global FDI, Geneva, 8-9/March/2007.

3 FDI trends in Sub-Saharan Africa

Persistently low FDI inflows to Africa and SSA have increased to reach US\$35.5 billion in 2006 for Africa (UNCTAD 2007). The gap between worldwide and SSA FDI inflows has continued to increase excepting in 2001 to 2004 when global FDI inflows decreased.

Figure 1: FDI inflows (in \$billion) to SSA (without South Africa) and the world, 1980-2006



Africa’s share of global FDI inflows decreased from 3.3% in 2003 to 2.7% in 2006 (UNCTAD 2007). Between 1995 and 1999, the average FDI inflow per capita was US\$11.9—the lowest ratio worldwide—and the annual share of SSA in global FDI inflows remains very low at an average 1.2% since 1992 (Table 1).

Table 1: Regional FDI inflows, 1992-2006, % of world total

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Developed Countries	67.8%	63.9%	58.3%	64.8%	61.0%	58.6%	71.8%	78.3%	81.2%	73.2%	71.1%	64.0%	56.4%	62.4%	65.7%
South East Europe & CIS	1.0%	1.5%	1.0%	1.4%	1.6%	2.5%	1.5%	0.9%	0.6%	1.4%	2.2%	4.3%	5.4%	4.4%	5.3%
Asia & the Pacific	19.4%	25.1%	26.9%	23.6%	24.1%	21.7%	13.5%	10.2%	10.5%	13.6%	15.8%	20.4%	23.0%	22.1%	19.9%
Latin America & the Caribbean	9.5%	7.1%	11.4%	8.6%	11.8%	15.0%	11.9%	9.5%	6.9%	9.4%	8.7%	7.9%	12.7%	8.0%	6.4%
Developing Countries															
Northern & South Africa	0.9%	1.1%	1.0%	0.7%	0.6%	1.3%	0.5%	0.4%	0.3%	1.4%	0.6%	0.8%	0.8%	1.8%	1.5%
Sub-Saharan Africa	1.3%	1.3%	1.4%	0.9%	0.9%	0.9%	0.9%	0.7%	0.4%	1.0%	1.5%	2.5%	1.6%	1.3%	1.2%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: UNCTAD 2008 (FDI Database)

FDI flows to SSA are highly asymmetric, asset specific and volatile. The most recipient countries are Angola, Chad, Ghana, Nigeria, Sudan, Equatorial Guinea, Congo (Democratic Republic) (UNCTAD 2007). SSA's share of worldwide FDI stocks, falling from 2.3% in 1980 to 1.1% in 2006, provides further evidence of economic marginalisation. Despite relatively low growth and productivity as well as poor institutional quality¹² (Dollar and Levin 2005; World Bank 2007) the fact is FDI does flow to SSA. Hence the locational determinants warrant scrutiny for policy insights.

4 Analyses of FDI location determinants in Sub Saharan Africa

4.1 The data

The data comes from UNIDO's 2003 survey of MNEs in SSA (UNIDO 2003[b])¹³. MNEs¹⁴ in 11 SSA countries¹⁵ completed a questionnaire with variables from the FDI literature. The data possesses high face and construct validity. More than 90% of respondents are senior managers¹⁶. The 37%¹⁷ response rate reflects other MNE surveys (Bartels and Mirza 1999;

¹² The World Bank Doing Business map (www.doingbusiness.org/map) shows that most SSA countries have difficult business environments, protect investors the least, and have the longest export delays.

¹³ The survey was validated in 2001 through pilot testing with 432 respondents in Ethiopia, Nigeria, Tanzania and Uganda.

¹⁴ Mining and oil exploration companies were not included.

¹⁵ Burkina Faso, Cameroon, Ethiopia, Kenya, Madagascar, Mozambique, Nigeria, Senegal, Tanzania, Uganda and Malawi.

¹⁶ Managing Director, Marketing Manager or Financial Controller.

¹⁷ 2160 questionnaires were dispatched.

Kwak and Radler 2002; Harzing 2006). 799 questionnaires were returned of which 718 (33%) were analyzed. The analysis is based on the question asking foreign investors to give reasons for their investment in the respective host country from a list of 22 location variables on a Likert scale of “not important”, “important” and “crucial”.

Appendix 1 shows the question. We parametise “not important” as “1”, “important” as “2” and “crucial” as “3” (Labovitz 1970, 1971). Table 2 depicts the survey response rates. There is a bias towards (South-) Eastern African countries as they account for 70% of the sample.¹⁸ At the country level, respondents from Tanzania, Uganda and Mozambique have a comparably high share (>12%).

Table 2: Survey response rates

	Questionnaires returned	Questionnaires returned and with question No. 17 valid	Questionnaire with No. 17 valid (%)
Burkina Faso	54	48	6.69
Cameroon	60	54	7.52
Ethiopia	55	48	6.69
Kenya	92	86	11.98
Madagascar	82	77	10.72
Malawi	41	16	2.23
Mozambique	97	89	12.40
Nigeria	85	81	11.28
Senegal	38	32	4.46
Tanzania	100	97	13.51
Uganda	95	90	12.53
Total	799	718	100

4.2 Methodology

The statistical techniques applied are factor analysis and cluster analysis. Factor analysis is “a procedure that postulates that the correlations or covariance between a set of observed variables, $x'=[x_1, x_2, \dots, x_q]$ arise from the relationship of these variables to a small number of underlying, unobservable, *latent variables*, usually known as the *common factors*” (Everitt 2002, p. 140). There are less factors $f'=[f_1, f_2, \dots, f_k]$ than variables ($k < q$). Our factor analysis is *exploratory* as we set no *a priori* constraints on the data structure. We search for factors that influence the 22 location variables (Kratzsch 2005). Factor analysis enables parsimonious reduction of the number of variables without losing the underlying pattern in the variation of variables (Hair et al. 1998). We use Kaiser’s criterion (Kaiser 1960) to determine the number of factors to be extracted. Accordingly, a factor is disregarded unless

¹⁸ Ethiopia, Kenya, Madagascar, Malawi, Mozambique, Tanzania and Uganda.

it can explain the variance of at least a single variable (“Eigenvalue” >1). To achieve explanatory power, we require our factors to explain at least 50% of the total cumulative variance in the data. As we do not stipulate factors to be uncorrelated, we apply *oblique* rotation (Bryman and Cramer 2001)¹⁹ which, in this case, represents the pattern of variables more accurately than orthogonal rotation (Hair et al. 1998).

Variables with less than 0.55 co-efficient loading (<30.25% of the variance accounted for by the factor) are suppressed. The criteria for factor loadings cut off remain contentious (Cudeck and O’Dell 1994; Hair et al. 1998). Heuristics suggest that loadings ≥ 0.30 are salient. Selection between 0.30 and 0.60 are common in factor analysis (Schwartz 1971). In factor analysis, the most challenging issue is labelling factors concisely to indicate underlying constructs meaningfully. Generally, variables with higher loadings are more important for the factor label. To increase analytical rigour in labelling factors, each set of variables influenced by each factor is subjected to second order factor analysis. Furthermore, we examine whether results are replicable for smaller sample sizes as congruent results enhance analytical confidence and substantiate the generalisability of results. We split the sample into two subsets by hierarchical cluster analysis and extract factors for each subset (Hair et al. 1998).²⁰

4.3 Factor analysis results

We compute a 22x22 matrix of the inter-correlations between the 22 location variables. The highest correlations, with correlations >0.500 (Table 3) and significant at the 0.01 level, are between variables that determine political climate, trade and input factors.

¹⁹ In SPSS 11.0 – the program used for our statistical analyses – the oblique rotation method “Direct Oblimin” is selected.

²⁰ Due to space limitations sub sample results are not reported but are discussed.

Table 3: Variables with high intercorrelations

Variable 1	Variable 2	Correlation Coefficient (All significant at the 0.01-level)
Country legal framework	Transparency of investment climate	+0.551
Local suppliers	Raw materials	+0.551
Country legal framework	Government agency support services	+0.516
Take advantage of EBA	Take advantage of AGOA	+0.515
Political stability	Economic stability	+0.506
Government agency support services	Quality of infrastructure	+0.486
Transparency of investment climate	Government agency support services	+0.476

We employ: the Bartlett’s test of sphericity (BTS); and the Kaiser-Meyer-Olkin Measure of sampling adequacy (KMO) to measure the appropriateness of the factor analysis. The BTS tests that correlations between variables are significantly greater than would be expected by chance (Dziuban and Shirkey 1974). The KMO (Kaiser and Rice 1974) compares the magnitudes of observed correlation coefficients to the partial correlation coefficients. A large KMO (i.e. approaching 1) means that patterns of correlations are compact, and yield distinct and reliable factors. The BTS is significant and KMO at 0.8686 (Table 4) is “meritorious” (Kim and Mueller 1978).

Table 4: KMO and Bartlett’s Test

KMO and Bartlett’s Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy:		0.8686
Bartlett’s Test of Sphericity:	Approx. Chi-Square	4039.34
	Degrees of freedom	231
	Significance	.000

Communalities, indicating how much of the variance in the variables is accounted for by extracted factors, necessitate a choice between Principal Axis Factoring (PAF) and Principal Components Analysis (PCA). These two techniques are different: PCA works with total variance i.e. common, unique and error variance; PAF eliminates the unique and error variance (Garson 2008). We select PCA as our objective is to identify factors accounting for the maximum variance in the variables. The communalities (Table 5) show that five variables—“Raw materials”, “Local suppliers”, “Take advantage of AGOA”, “Country legal framework” and “Specific investment proposal”—with communalities higher than 0.6 are likely to be highly influenced by extracted factors. Communalities suggests that variables

“Take advantage of other trade agreements”, “Low labour costs”, “Incentive packages” and “Quality of life” with values below 0.383 are likely to be weakly influenced by factors (if at all).²¹ With respect to incentives, our statistical results confirm the long record of empirical research in FDI that fiscal and monetary incentives are not, per se, influential in investment location decision-making (Loree and Guisinger 1995; Wells et al. 2003).

Table 5. Communalities

	Initial	Extraction
Political Stability	1	0.435
Economic Stability	1	0.527
Quality of infrastructure	1	0.549
Gov. agency support services	1	0.560
Country legal framework	1	0.632
Transparency of investment climate	1	0.588
Quality of Life	1	0.383
Local market (country)	1	0.577
Regional market	1	0.529
Continental market	1	0.402
Presence of key client(s)	1	0.487
Take advantage of AGOA	1	0.660
Take advantage of EBA	1	0.550
Take adv. of other trade agreements	1	0.326
Low labour costs	1	0.368
Availability of skilled labour	1	0.470
Raw materials	1	0.700
Local suppliers	1	0.665
Incentive packages	1	0.375
Acquisition of existing assets	1	0.440
Presence of Joint Venture partner	1	0.398
Specific inv. project proposal	1	0.614

Extraction Method: Principal Component Analysis.

The next step of factor analysis is factor extraction. Table 6 shows the initial solution. Five factors with an Eigenvalue >1 explain 51% of the variation in the data.²² The first factor (Eigenvalue 5.763) explains 26% of the variation. The subsequent four factors together explain 25%. The first factor is therefore a latent construct, of a set of variables, which is pivotal in the investment decision of foreign investors in SSA. Other criteria for factor

²¹ This is noteworthy in that having set a relatively modest factor loading cut off variables associated with labour (skills, costs), other trade agreements (SSA’s overlapping regional trade agreements) and incentives are not influenced significantly by extracted factors.

²² The proportion of variance accounted for by one factor is its Eigenvalue divided by the sum of Eigenvalues, which is equal to the number of variables.

extraction [Cattel's (1966) Scree Test], could retain more than these five factors. However, even if we added two or three more factors, the total variation explained would only increase by another 9% to 13% while risking factor over-extraction (Fava and Velicer 1992). For parsimony, we retain five factors and proceed with factor rotation using oblique rotation.

Table 6: Total variance explained after factor extraction

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.763	26.194	26.194	5.763	26.194	26.194
2	1.594	7.245	33.439	1.594	7.245	33.439
3	1.407	6.397	39.836	1.407	6.397	39.836
4	1.301	5.915	45.751	1.301	5.915	45.751
5	1.172	5.325	51.076	1.172	5.325	51.076
6	0.989	4.498	55.573			
7	0.967	4.398	59.971			
8	0.914	4.157	64.128			
9	0.881	4.004	68.131			
10	0.839	3.813	71.945			
11	0.731	3.321	75.266			
12	0.675	3.066	78.332			
13	0.596	2.711	81.043			
14	0.565	2.568	83.611			
15	0.536	2.435	86.046			
16	0.514	2.338	88.385			
17	0.497	2.258	90.643			
18	0.474	2.157	92.799			
19	0.441	2.006	94.806			
20	0.391	1.776	96.582			
21	0.386	1.756	98.338			
22	0.366	1.662	100			

Extraction Method: Principal Component Analysis.

The oblique rotation generates the Pattern Matrix (Table 7), which we use to label factors in preference to the structure matrix which is the factor loading matrix from orthogonal rotation. We set the cut-off point at 0.55 co-efficient factor loading, as we wish one single factor to explain at least 30.25% (i.e. $0.55^2 \times 100$) of the variance in the respective variable. In the Pattern Matrix each row represents one of the 22 observed variables and the five columns represent extracted factors. The Pattern Matrix presents the unique relationship between the factor and the variable (Tabachnik and Fidell 1996) and differentiates between high and low loadings more precisely (Rummel 1970).

Table 7: Pattern Matrix (Oblique rotation “Direct Oblimin” Method)

Variables	Component (Factors)				
	1	2	3	4	5
Country legal framework	0.798				
Transparency of investment climate	0.696				
Quality of infrastructure	0.652				
Gov. agency support services	0.639				
Political Stability	0.602				
Economic Stability	0.598				
Quality of Life	0.579				
Availability of skilled labour					
Take advantage of AGOA		0.810			
Take advantage of EBA		0.699			
Take adv. of other trade agreements					
Continental market					
Raw materials			0.883		
Local suppliers			0.780		
Low labour costs					
Local market (country)				0.691	
Regional market				0.675	
Presence of key client(s)				0.582	
Specific investment project proposal					-0.804
Presence of Joint Venture partner					-0.613
Acquisition of existing assets					-0.558

Incentive packages
Extraction Method: Principal Component Analysis.
Rotation Method: Direct Oblimin with Kaiser Normalization.
Rotation converged in 9 iterations.

Factor loadings are rank sorted above our cut-off point of 0.55. A high factor loading is representative of the variable in labelling the factor. Second-order factoring of subgroups of variables assists in naming factors meaningfully. The first factor loads highly on political variables “Country legal framework” and “Transparency of investment climate”; and second-order factor analysis of its seven variables supports this. Factor “1”, in first-order analysis, explains 63.7% of the variance of “Country legal framework” and 48.4% of the variance of “Transparency of investment climate”. The two variables “Political Stability” and “Economic Stability”, most frequently mentioned as being “important” or “crucial” for the investment decision, reveal second-order loadings of 0.622 and 0.679.

Factor “1” clearly influences the overall political investment climate variables and we label the factor “*Political Economy of Investment Climate*” emphasising the high loading variables. Studies on SSA emphasise sound and transparent institutions, anti-corruption initiatives, unhampered business operation, low transaction costs and a good regulatory framework for attracting FDI (Morisset 2000; Naudé and Krugell 2007). Factor 1 indicates

that foreign investors are concerned about business fundamentals and the commitment of governments to implement adequate reforms. The policy environment in SSA may have improved but investors realise that reforms have progressed faster elsewhere. Thus SSA has lost FDI to other countries (Asiedu 2003; UNCTAD 2006). Foreign investors, with different risk appetites, emphasise above all that the *“Political Economy of Investment Climate”* is much more important than other factors as this factor alone explains 26%, while all others together explain less than 25% of the variance, in the data.

Factor “2” loads on two variables “Take advantage of AGOA” and “Take advantage of EBA”. The loading on “Take advantage of AGOA” is higher and explains 65.6% and 75.7% of the variance in first- and second-order factoring respectively. We label the factor *“Trade Agreement Dependency”*, because the variables point unanimously to SSA as an export platform from which foreign investors seek preferentially to penetrate US and EU markets. The factor reflects the literature-defined efficiency-seeking investment, but does not influence other efficiency variables “Availability of skilled labour”, “Low labour costs” and “Take advantage of other trade agreements”. Labour variables apparently play no role in the investment decision of efficiency-seeking investors. Investors realise that non-productive low labour costs are not conducive to FDI. It is instructive to associate the decline in Africa’s share of world inward FDI flows since 1970 – dropping from 9.55% to 2.7% in 2006 - with SSA total factor productivity (TFP) level relative to that of the US²³ Thirty out of 40 SSA countries on the UNIDO world productivity database show declining TFP. In our 11 SSA countries only Kenya and Malawi show a small increase in their TFP level relative to that of the US over the 1960-2000 period (Isaksson 2007).

Factor “3” loads on two variables – “Raw materials” (0.883) and “Local suppliers” (0.780). Both are location-bound specific assets—Dunning’s (2000) L advantages—that provide input factors for production activities. We label the factor *“Availability of Production Inputs”*. Instead of obtaining one single factor oriented to natural resources, the results suggest that MNEs consider resources or assets in a broader context. However, the factor explains only 6.4% of the overall variance and thus ranks far behind *“Political Economy of Investment Climate”*.

²³ Based on growth accounting Hicks Neutral Cobb-Douglas function with labour force and capital perpetual inventory method at 6% depreciation rate.

Factor “4” loads on three variables “Local market”, “Regional market” and “Presence of key client(s)” and explains between 34% - 48% and 72% - 73% of variances in first- and second-order factoring respectively. These variables are clearly related to “*Local Market Demand*”, which is an appropriate label.

Factor “5” explains 5.3% of the total variance and influences the variables “Specific investment project proposal”, “Acquisition of existing assets” and “Presence of joint venture partners”. The second-order factoring indicates that the factor explains most of the variance of “Presence of joint venture partners” (83.1%) followed by “Specific investment project proposal” (80.3%). We name this factor “*Propensity for Independent Market Entry*”. The factor shows a negative loading on the three variables, which means that it develops conversely to its variables. It suggests that FDI decisions are also based on the degree of autarky expected in host countries. Even though MNEs possess superior firm specific advantages, the presence of potential joint venture partners might act as a deterrent to those MNEs that do not wish to contest markets. A potential joint venture partner is seen as a competitor who might threaten the investor’s monopolistic market position. Foreign investors seem to forego the opportunity to use a joint venture for knowledge about customers’ preferences, the market environment and marketing strategies. This is somewhat counter to the literature which points to increasing incidence of joint ventures (Luo 2007). In other words, MNEs are more likely to service foreign markets via wholly-owned subsidiaries (local laws permitting) in the presence of low incidence of specific FDI proposals, low numbers of joint venture potential partners and low levels of strategic assets.

We check whether the scale of the 22 variables is reproducible and reliable i.e. if they “are free from error and yield consistent results” (Peter 1979, p. 6). Cronbach’s alpha for the entire scale at 0.8587 is very acceptable (Nunnally 1967; Peterson 1994). We conclude that the scale measures reliably the locational determinants of FDI to SSA. Since the factor analysis splits up the entire scale of 22 items into five distinct scales we run separate reliability analyses for each subset. The results are shown in Table 8.

Table 8: Reliability analyses for each factor

	No. of items	Sum of item variances	Scale variance	Cronbach's Alpha
Political Economy of Investment Climate (F1)	7	3.0814	10.5387	0.8256
Trade Agreement Dependency (F2)	2	0.433	0.6529	0.6739
Availability of Production Inputs (F3)	2	1.1088	1.7117	0.7106
Local Market Demand (F4)	3	1.5708	2.5575	0.5787
Propensity for Independent Market Entry (F5)	3	1.0842	1.6611	0.5232

The first three factors show sufficiently high values of Cronbach's alpha whereas the factor "Propensity for Independent Market Entry" (F5) is relatively low regarding the acceptable lower limit of a Cronbach's alpha of 0.5 (Nunnally 1967). We compute a factor correlation matrix indicating how the variance is shared between the correlated factors. This matrix is given in Table 9. The low inter-correlations between the factors confirm that we have highly distinct factors.

Table 9: Matrix of Inter-factor correlations

	Political Economy of Investment Climate (F1)	Trade Agreement Dependency (F2)	Availability of Production Inputs (F3)	Local Market Demand (F4)	Propensity for Independent Market Entry (F5)
Political Economy of Investment Climate (F1)	1				
Trade Agreement Dependency (F2)	0.222	1			
Availability of Production Inputs (F3)	0.364	0.184	1		
Local Market Demand (F4)	0.264	0.106	0.206	1	
Propensity for Independent Market Entry (F5)	-0.247	-0.209	-0.267	-0.165	1

5 Discussion of results

The analyses identify the locational determinants of FDI to SSA, from a sample of 718 foreign investors in 11 SSA countries. Two further separate analyses (not tabulated herein) for sub-samples of 408 foreign investors (seven SSA countries in cluster 1) and 310 foreign investors (four SSA countries in cluster 2) were performed.

The single most important factors are "*Political Economy of Investment Climate*" for the entire sample and cluster 1 and "*Legal Environment of Governance*" for cluster 2. Gliberman and Shapiro (2002) conceptualise this latter factor. According to Bhattacharya et al. (1997, p. 5) "experience in other regions has shown that investors choose countries with stable political and economic environments." Both factors point to political variables as the

main determinant for FDI to SSA with the slight difference that investors in cluster 2 {Cameroon, Mozambique, Uganda, Madagascar} indicate these political economy variables as – “Country legal framework”, “Government agency support services”, “Transparency of investment climate” and “Quality of infrastructure”. The first factor, be it “*Political Economy of Investment Climate*” or “*Legal Environment of Governance*” explains about one quarter of overall variance in the data and is about three times more powerful than the factor “*Trade Agreement Dependency*” which, as the second most important determinant of FDI into SSA, explains between 7%-8% of the variance. The EBA - Agreement of the EU²⁴ has a comparatively high impact on the foreign investment decision as in cluster 1, the factor “*Trade Agreements Dependency*” loads even higher on “Take advantage of EBA” than on “Take advantage of AGOA”.²⁵ One would expect these two variables to be part of a broader set of critical success factors for efficiency-seeking and export-oriented MNEs. However, the factor indicates that “Low labour costs”, “Continental market” or “Take advantage of other trade agreements” are not important for MNEs’ FDI location decision in SSA, except the relatively weak loading of the factor “*Trade Agreements Dependency*” on the variable “Take advantage of other trade agreements” in cluster 1 (0.567). The factor “*Trade Agreement Dependency*” appears to be the single most important trade determinant of FDI location decision.²⁶ The factor is crucial in explaining recent inflows of export-oriented investors since 2000 (UNIDO 2003[b]).

The analyses further reveal that the economic factor “*Availability of Production Inputs*” (third factor for the entire sample and cluster 1, and fourth factor for cluster 2) is important in the FDI location decision-making process. The factor reflects immobile location specific advantages and the motivations of resource-seeking investors who require either raw materials or semi-finished goods from local suppliers.²⁷ It could be that, due to sluggish privatisation (Nwankwo and Richards 2001), resource-based MNEs rely on local supply chains instead of internalizing some upstream activities. This suggests that while spatially

²⁴ The EBA (Everything But Arms) EU Council regulation amended the GSP to extend duty and quota free access to the 48 least developed countries. The EBA agreement became effective 5th March 2001; European Commission, “EBA” - *Everything But Arms initiative*, http://ec.europa.eu/trade/issues/global/gsp/eba/index_en.htm

²⁵ AGOA (African Growth and Opportunity Act) signed into US law 18th May 2000 has been renewed on 6th August 2002, 12th July 2004 and 20th December 2006 extending the textile and apparel provisions until 2015; African Growth and Opportunity Act, <http://www.agoa.gov/>

²⁶ Thirty-three countries in the list of least developed countries are in SSA. It is not surprising therefore that the two externally engineered trade agreements AGOA and EBA load on the factor *Trade Agreements Dependency*.

²⁷ The correlation between “Raw materials” and “Local suppliers” was highly significant and among the highest correlation observed in the entire sample (+0.551), in the cluster 1 (+0.586) and in cluster 2 (+0.493).

distributed production networks serving global, and regional, markets are predominant in Southeast Asia (Felker 2003; Giroud 2004), and Central and Eastern Europe and US/Mexico border respectively, there are indications that SSA is not devoid of such networks albeit at simple levels of sophistication.

Cluster 2 generated another factor, *“Responsiveness to Created Assets”*. Further research is needed to elucidate the emphasis of investors in Cameroon, Madagascar, Mozambique and Uganda on acquisition opportunities, specific investment proposals and the presence of joint venture partners. Having said this, it is remarkable that analysis for the entire sample generated a factor *“Propensity for Independent Market Entry”* loading negatively on variables that are related to the country’s created assets and by implication the promotional efforts to make them available for foreign investors.

“Local Market Demand” forms a distinct factor albeit a less influential one than initially expected. With the exception of Madagascar, Malawi and Burkina Faso, UNIDO’s survey (UNIDO 2003[b]) targeted foreign investors in countries with relatively large and fast-growing local markets. Nonetheless, the factor only explains 5.9% of the variance in the whole sample and 6.3% in cluster 1. In cluster 2 a factor *“Local Market Demand”* does not emerge.

Other variables filtered out by our factor loading coefficient cut-off point deserve attention. “Incentive packages”, for example, are of minor importance in the interplay with other location factors (Loree and Guisinger 1995). In none of our three factor analyses did the variable “Incentive packages” load on any factor. This confirms the consistent empirical literature regarding the relative unimportance of incentives and hence the generalisability of this finding for developing countries. Hubert and Pain (2002) note that it is the levels of fixed investment expenditure relative to that in competing locations which has the significant positive impact on FDI in comparison to fiscal and financial incentives. Similarly, Zee et al. (2002) find evidence that the efficacy of fiscal incentives in stimulating FDI is highly inconclusive. Furthermore, Obazuaye (2000), in a study of FDI in SSA from 1980 to 1995 finds that incentives do not appear among the variables that catalyse FDI. It should be noted that developing countries in general and SSA in particular lack credibility in their financial and fiscal incentives (Oman 2000). Furthermore, Bjorvatn and Eckel (2006, p. 1906) conclude that “with sufficiently large asymmetries between countries, policy competition is

less fierce and has less impact on the foreign firm's location decision." It is only after the location decision is concluded that MNEs begin to exploit fiscal and financial incentives available (Oman 2000).

A similar observation is made for the variables "Availability of skilled labour" and "Low labour costs" which did not load on any factor. This represents structural deficiencies in human capital formation and retention. According to Kaba (2004-05), about 10 million Africans reside externally, mostly in EU and North America, including an estimated 5 million African entrepreneurs, professionals and 40% of African managers. More African engineers, scientists and technicians work in the US than in SSA. According to the International Organization for Migration, Africa lost approximately 60,000 professionals between 1985 and 1990. The OECD indicates "the per cent of persons with tertiary education born in certain African and Caribbean countries who are living in OECD countries exceeds 50%" (OECD 2006, p. 39). As a result of macro-economic instability and poor infrastructure, SSA suffers from high waste and production costs (Bhattacharya et al. 1997; UNCTAD 2006). Apparently, the typical foreign investor in SSA is more concerned with location factors other than the skill level of the country's workforce.

More than 80% of the respondents in our sample run resource-based or low-technology-based operations (UNIDO 2003[b]). Countries with a relatively higher share of FDI in industrial chemicals, pharmaceuticals, machinery or standard electronics are Burkina Faso, Ethiopia, Nigeria and Senegal. As these countries belong to cluster 1, we expected a stronger impact of "Availability of skilled labour" in this cluster rather than in cluster 2 where resource-based and low-technology manufacturers dominate. However, in cluster 1 we do not observe any loading on "Availability of skilled labour". The relative unimportance of "Availability of skilled labour" reflects the general absence of skill-intensive FDI activities in SSA.

One might therefore expect "Low labour costs" to be comparably more important. Foreign investors in the resource-based or low technology sectors should reap the benefits of labour-abundance. However, the variable "Low labour costs" was not captured by any factor. Obviously, foreign investors perceive the cost of labour to be disproportionate to its productivity. Consequently major FDI flows are diverted away from SSA towards "real" competitively skilled low-wage countries such as China, India or even Bangladesh, in the sectors in which Africa competes. This is especially worrying as FDI is considered a key

channel to improve productivity performance through the circular causality between FDI and output, and productivity growth with host and industry characteristics moderating the strength of effects.

Regarding the first factor, SSA governance characteristics and institutional propensities²⁸ lag behind those of other developing regions (World Bank 2006; Kaufman, Kraay and Mastruzzi 2007)²⁹. According to Marshall and Gurr (2005, p. 4) “instability in African states has remained a fairly constant and serious problem since the decolonization period began”. Clearly, from an institutional perspective Africa is a troubled continent and lacks robust mechanisms for successfully moderating civil strife (Kaplan 1994; Gerhart 1995; Chabal and Daloz 1999). In our 11 SSA countries, seven³⁰ are in the top 40 of the Failed States Index 2006 and are considered “crisis” states³¹. This is the reason for the high explanatory power of the first factor “*Political Economy of Investment Climate*”.

The “deep” fundamentals of development appear to be institutions (Rodrik et al. 2002), integration (Frankel and Romer 1999) and geography (Sachs 2001). It is not surprising that the first factor, accounting for 26% of variance in the data, influences institutional variables. This factor “*Political Economy of Investment Climate*” explains 63.7% ($0.798^2 \times 100\%$) of the variance in the variable “Country legal framework”, 48.4% ($0.696^2 \times 100\%$) of “Transparency of investment climate” and 42.5% ($0.652^2 \times 100\%$) of “Quality of infrastructure”. The second factor influences trade variables and accounts for 7% of variance. The third factor reflects geographic variables and accounts for 6% of variance.

The significance of the first factor is given by the taxonomy of institutional strength, vis-à-vis the state namely ‘strong’, ‘weak’, ‘failed’ and ‘collapsed’ (Gros 1996; Rotberg 2004, pp. 4-9). The 11 SSA countries cannot be considered ‘strong’. Cliffe and Luckham (1999)

²⁸ In the sense of the rules by which society makes decisions and with (and within) which the structure of incentives, underlying the modalities for contesting economic and political power, are designed and evolve over time.

²⁹ The World Bank worldwide governance indicators 1996-2006 across the factors: voice and accountability; political stability; government effectiveness; regulatory quality; rule of law; and control of corruption shows regional average rankings as: SSA just above 25th percentile; Latin America approximately 40th percentile with recent gains in voice and accountability and regulatory quality, rule of law, and control of corruption, but near SSA’s 25th percentile for voice and accountability, and political stability. The only region performing worse than SSA is the former Soviet Union.

³⁰ Burkina Faso (33rd); Cameroon (35th); Ethiopia (18th); Kenya (31st); Malawi (29th); Nigeria (17th); Uganda (15th) (The Failed States Index 2007, The Fund for Peace, www.fundforpeace.org)

³¹ Foreign Policy July/August 2005, May/June 2006, July/August 2007, The Fund for Peace, Failed States Index 2007 with respect to the variables “criminalization and/or delegitimization of the state”, “progressive deterioration of public services.”

distinguish institutional dimensions: development policy failures; failures in conflict management; defects in the democratic process; and systemic failures in state capacity. SSA countries are particularly prone to these challenges (Ellis 2005). From the perspective of competitiveness and structural change in the economy, in the 2007 global competitiveness index, the highest ranked SSA country is Mauritius at 58. Kenya ranks 97 and all other SSA countries in our sample are below the rank of 100 out of 128 economies (WEF 2007, table 3, p. 8). According to the Industrial Development Scoreboard (UNIDO 2007[b]), out of 124 countries the highest ranking of our 11 SSA countries is Senegal at 53 all others rank below Nigeria's 80.

6 Concluding remarks and policy implications

The analytical results have revealed factors that determine the investment decision of foreign investors in SSA. The literature review indicated that location-specific advantages are in constant interplay with FDI motivations related to the knowledge and asset structure of MNEs as well as transaction cost minimisation in market creation or internalisation. In the pre-investment phase, the foreign investor identifies location specific advantages that best accommodate the firm's objectives, strategy and its specific ownership advantages. This generates a set of critical success factors called the investor's "wish-list". We have identified the marginal position of SSA regarding FDI inflows and stocks and the relative inability of SSA countries to craft policies to meet the critical success factors in the foreign investor's "wish-list".

The majority of FDI studies emphasise the role of host economic factors in terms of location specific advantages in the motivations of investors, and the political or regulatory climate. In our study, the variables influenced by the factors extracted describe the political economy and regulatory climate (e.g. "Country legal framework", "Transparency of investment climate" or "Political stability"), and location-specific advantages (e.g. "Local market", "Local suppliers" or "Raw materials") or hybrid forms (e.g. "Quality of infrastructure" or "Quality of life").

According to the International Country Risk Guide (ICRG)-Index, SSA is considered the most risky investment environment. At the macro-level, great uncertainty emanates from unstable political systems, in which capital and investment are threatened by war,

expropriation and, civil unrest (Collier and Hoeffler 2002) and industrial ‘hold-up’³². At the micro-level, institutions suffer from red tape, administrative burdens, juridical inefficiencies and corruption that amplify transaction costs in FDI operations. The analytical results herein suggest that creating a benign political and investment climate should be a top priority for policy makers in SSA. Furthermore, a non-transparent and unstable regulatory framework cannot be outweighed by any amount of fiscal and financial incentives.

Concerning the most important trade determinants of FDI to SSA, we observe that recent amendments and extensions of the General System of (Tariff) Preferences (GSPs) of the US government and the European Union have triggered new investment. MNEs, particularly from the Asian textile and apparel sector, give high importance to trade agreements and duty-free access to the US and EU markets. AGOA and the EBA-Agreement formed the second most important factor in all the three analyses, ahead of more traditional factors such as “Local Market Demand” or “Availability of Production Inputs”. However important AGOA and EBA are in attracting FDI to SSA, there is an issue about reliance on policies that are the domain of policy makers outside the country hosting the FDI.

Nevertheless, the factors “Local Market Demand”, “Availability of Production Inputs” play an important role in the investment decision of MNEs. The factor “Local Market Demand” can be interpreted in terms of African countries achieving limited success in harmonizing the many overlapping and contradictory regional trade agreements. Foreign investors will continue to focus their activities in the primary sector especially since many agricultural products fall under commodities not dutiable under AGOA or the EBA-Agreement. Furthermore, the MNEs dependency on raw materials goes hand in hand with the dependency on local suppliers, which might unleash positive technological spillover effects.

Our results support the empirical evidence in the literature on determinants of FDI. However, the risk perception of SSA appears to shift the emphasis in FDI motivations towards considerations of political economy and externally, rather than internally, generated location advantages related to trade. The commodity structure of SSA economies is confirmed by the availability of production input factors, and the low explanatory power of local market demand attests to the fragmented nature of SSA markets. The outstanding policy implication

³² See “Shell shuts oilfield after gun attack”, Financial Times, 20 June 2008, p. 5 for an example of industrial ‘hold-up’ in SSA wherein militants target MNEs.

for SSA policy makers is the attention to the business environment and macro-economic stability. This implication is set within a general view that is not as optimistic as wishful thinking would allow. Freeman and Lindauer (1999, p. 21) indicate “there is no simple nor single recipe for achieving economic growth, but there is one way to prevent growth: through instability and absence of property rights.” Our first factor points strongly to this as a policy area of critical importance even though it is an age old mantra repeated by many.

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7 Appendix 1:

The question analyzed

Why did you choose to invest in 'country'? (Please tick the appropriate boxes indicating the importance of each factor in your location decision)	Importance of each factor in your location decision		
	Not important (1)	Important (2)	Crucial (3)
Political stability			
Economic stability			
Quality of infrastructure			
Government agency support services			
Country legal framework			
Transparency of investment climate			
Quality of life			
Local market (country)			
Regional market			
Continental market			
Presence of key clients			
Take advantage of AGOA			
Take advantage of EBA			
Take advantage of other trade agreements.			
Low labour costs			
Availability of skilled labour			
Raw materials			
Local suppliers			
Incentive package			
Acquisition of existing assets			
Presence of Joint Venture partner			
Specific investment project proposal			



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