1 Trade facilitation and foreign direct investment flows in Kenya

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Abstract

This chapter examines the effects of trade facilitation on foreign direct investment (FDI) in Kenya. Using bilateral FDI data for the period 2001–2012, a fixed effects Poisson pseudo maximum likelihood estimation of the gravity model was used in the analysis. The results indicate that improvements of indicators related to the business environment, the quality of port infrastructure, the number of days required for enforcement of contracts and the activities that improve logistics performance, are essential drivers of FDI flows in Kenya. Kenya should therefore enhance efforts to implement trade facilitation measures with a view to deepening integration in global trade and production networks, in order to increase FDI.

* The contents of this chapter are the sole responsibility of the authors and are not meant to represent the position or opinions of the WTO or its members.

1.1 Introduction

Trade facilitation refers to the simplification, harmonization, standardization and modernization of trade procedures in terms of import and export processes (WTO, 2015a). It encompasses a wide range of activities involving the interface between business and government and which influence transaction costs. The definition is further extended to mean the improvement of transport infrastructure (i.e. transport facilitation), eradication of government corruption, reduction of customs tariffs and resolution of non-tariff trade barriers, and export marketing and promotion.

It is widely argued that countries that implement trade facilitation reforms and enhance trade efficiency and connectivity are generally expected to attract more foreign direct investment (FDI). This is an important source of financing development in host countries and positively contributes to generation of employment, tax revenues, exports and capital formation (UNCTAD, 2012). On the other hand, Zaki (2014) contends that trade facilitation includes five main elements: simplification of trade procedures and documentation; harmonization of trade practices and rules; more transparent information and procedures for international trade flows; recourse to new technologies to promote international trade; and more secured means of payment for international commerce.

According to the WTO (2013), trade facilitation involves trade procedures encompassing practices and formalities involved in collecting, presenting, communicating and processing data required for the movement of goods in international trade. In that regard, it is frequently referred to in supply chain security initiatives as Aid for Trade (AfT) and capacity-building initiatives (Grainger, 2008).

Trade across boundaries involves transaction costs. OECD (2001) classifies transaction costs into two forms: (i) direct costs or costs of compliance associated with collection and processing of information and charges for trade-related services, e.g. for freight, insurance and handling; and (ii) indirect costs or time-sensitive costs brought about by administrative processes and inventory charges. Other costs can be brought about by a lack of transparency or of uniformity in the interpretation of regulations and contracts, which increases the effective costs of producing the necessary trade and procedural information.

Kenya has been implementing a number of trade facilitation activities under various regional and international initiatives. This chapter attempts to quantify the potential impact of trade facilitation programmes on FDI flows into Kenya. Using a bilateral dataset on FDI flows, the gravity models of FDI featuring relevant trade costs and trade facilitation indicators are estimated.

Despite the increasing trend in FDI flows into Kenya in the recent past, the FDI stock remains very low. For instance, the FDI stock in 2014 was 7.2 per cent of GDP, whereas Tanzania's was 35.5 per cent and that of the East Africa Community (EAC) 24.7 per cent during the same year, despite the various incentives, including tax holidays, instituted by the Kenyan Government. In addition, the role of trade-related procedures, infrastructure and services needs to be investigated to gain a better understanding of the policy implications of trade facilitation measures being undertaken. This chapter attempts to fill this gap by running an empirical investigation on the effects of trade facilitation on FDI flows.

The main objective of the chapter is to investigate the effects of trade facilitation measures on FDI flows into Kenya by reviewing the implementation of trade facilitation measures and FDI flows into Kenya, evaluating the effects of trade costs and trade facilitation indicators on FDI flows into Kenya, and thereafter suggesting appropriate policy implications.

1.2 Perspectives on trade facilitation and FDI

Portugal-Perez and Wilson (2010) define trade facilitation as measures that can be undertaken along two dimensions: a "hard" dimension related to tangible infrastructure, such as roads, ports, highways and telecommunications, and a "soft" dimension related to transparency, customs management, the business environment, and other institutional aspects that are intangible. Persson (2013) argues that trade facilitation refers to making it easier for traders to move goods across borders by making cumbersome cross-border trade procedures more efficient.

According to the WTO (2015a), trade facilitation can be viewed in two other dimensions: the broad or narrow, and soft or hard infrastructure. With regard to the former, the narrow definition focuses on improving administrative procedures at the border while the broad definition focuses on behind-the-border measures such as technical barriers to trade. Some definitions of trade facilitation concentrate on improvements in trade procedures that do not require investment in physical infrastructure, although investment in better information technology for customs is included in this definition. However, other definitions of trade facilitation include investment in hard infrastructure, such as ports, railways and roads, as well as in information and communications technology (ICT).

As mentioned earlier, trade involves transaction costs. WTO members negotiated the WTO Agreement on Trade Facilitation (TFA), which is expected to ease trade costs globally, and the TFA was adopted in 2014. It includes a set of measures for

expeditiously moving goods across international borders using best practices from around the world. The TFA states that assistance and support should be provided to help countries achieve that capacity. It is expected to reduce total trade costs by more than 14 per cent for low-income countries, more than 15 per cent for lower-middle-income countries, and more than 13 per cent for upper-middle-income countries.

The Trade Facilitation Agreement Facility (TFAF) was created to help developing countries and least-developed countries (LDCs) implement the TFA (WTO, 2015a). The Facility acts as a focal point for implementation and aims to support developing countries and LDCs by:

- Helping them to assess their capacity to implement the TFA and their needs for assistance to implement particular provisions of the Agreement;
- Maintaining an information-sharing platform to assist with the identification of possible donors;
- Providing guidance on the implementation of the TFA through the development or collection of case studies and training materials;
- Undertaking donor and recipient match-making activities;
- Providing project preparation grants in cases where a member has identified a potential donor but has been unable to develop a project for their consideration, and is unable to find funding from other sources to support the preparation of a project proposal;
- Providing project implementation grants (limited to soft infrastructure projects, such as modernization of customs laws through consulting services, in-country workshops or training of officials) related to the implementation of TFA provisions in cases where efforts to attract funding from other sources have failed;
- Complementing efforts by regional and multilateral agencies, bilateral donors and other stakeholders to provide trade-facilitation-related technical assistance and capacity-building support.

Overall, trade facilitation seeks to remedy trade transaction costs. It recognizes that transaction costs are wasteful and undesirable for both business and government. Proponents of trade facilitation argue that its principles can increase business competitiveness, improve efficiency and control and promote investments, both foreign and domestic.

FDI is the process whereby residents of one country acquire ownership of assets for the purpose of controlling the production, distribution and other activities of a firm in another country (UNCTAD , 2013). Investments are made to acquire lasting interest in enterprises operating outside the economy of the investor. There are at

least three major types of FDI: horizontal, vertical and conglomerate. The mode of entry can be through greenfield investment or through mergers and acquisitions. Horizontal FDI occurs when a company investment is made for the purpose of conducting similar business operations in another country. It usually serves the local and regional market and involves the replication of production facilities in the host country in order to avoid trade costs associated with entering new markets. Horizontal FDI is also referred to as "tariff-jumping" or "export-substitution" FDI. The latter is mainly driven by market size and market growth of the host economy. Due to market and income considerations, FDI in small and poor countries is unlikely to be of the horizontal type (Lim, 2001).

Vertical FDI is the expansion of a firm into a stage of the production process other than that of the original business. It is usually undertaken by firms looking for cheaper factor prices in other countries and usually flows from rich to poor countries and sometimes between developed countries.

Conglomerate FDI is where an unrelated business is added abroad. This is the most unusual form of FDI as it involves attempting to overcome two barriers simultaneously – entering both a foreign country and a new industry.

Greenfield FDI entry implies assembling all the elements from scratch. They are the primary targets of a host nation's promotional efforts. On the other hand, mergers and acquisitions occur when the control of assets and operations is transferred from a local to a foreign company, with that local company becoming an affiliate of the foreign company.

According to Franco, Rentocchini and Marzetti (2008), there are four types of motivation attributed to FDI:

- Resource-seeking, where the main aim is to acquire certain types of resources that are not available at home (e.g. natural resources, such as oil and gas or raw materials) or are available at a lower cost (such as unskilled labour that is offered at a cheaper price than in the home country). This would lead a firm to relocate parts of the production chain to the host country and it is often export-oriented;
- Market-seeking, where an FDI investor invests in a foreign country to exploit the possibilities granted by markets of greater dimensions;
- Efficiency-seeking, where a firm wants to take advantage of differences in the availability and costs of traditional factor endowments in different countries, or to take advantage of economies of scale and scope and of differences in consumer tastes and supply capabilities. Investing firms gain from common governance of geographically dispersed activities in the presence of

economies of scale and scope. The idea here is to take advantage of special features such as labour costs, skills of the labour force and quality of infrastructure (Abala, 2014);
- Strategic asset-seeking, where the purpose of the investment is to acquire and complement a new technological base rather than exploit the existing assets.

Duval and Utoktham (2014) argue that countries that implement the TFA are expected to attract more FDI. Trade facilitation is one way of attracting more FDI, especially FDI related to international production networks and which requires low transaction costs between members of the network. Hence, trade facilitation is quite often promoted to reduce transaction costs and attract FDI, especially that connected with international and/or regional production networks.

1.3 Relationship between FDI and trade facilitation

Firms pursuing international business opportunities consider several factors regarding investment decisions, including but not limited to exchange rates, domestic taxes, quality of institutions and trade protectionism. It is notable that most previous studies do not include trade costs and trade facilitation indicators, particularly those on developing countries, due to measurement problems. However, recent empirical studies, e.g. Duval and Utoktham (2014) support the notion that trade facilitation is a core component of any FDI development strategy and provides further evidence of the benefits associated with enhancing trade efficiency. In fact, Carr, Markusen and Maskus (2001) clearly suggest the need to capture links between FDI and trade-related procedures, infrastructure and services.

For practical purposes, in this chapter, FDI is defined as when an investor from one country obtains a controlling interest in a (new or existing) firm in another country, and then operates that firm as a part of its multinational business. FDI may be financed through a parent company transfer of funds to the new affiliate, borrowing from home-country lenders, borrowing in the host country by the parent company, or any combination of these strategies. A foreign investor is considered to have control over a firm when they have 10 per cent of shares or voting power in the enterprise (or the equivalent in an unincorporated firm). FDI also pertains to investments in infrastructure, equipment and/or organizations that allow the foreign investor to influence the management of the firm.

The relationship between trade facilitation and FDI is complex (OECD, 2005). A country's FDI flows may change through its own trade facilitation reforms and also due to its multi-dimensionality. A growing number of studies have emphasized the

complementary relationship between trade and investment, suggesting that reductions in inefficient trade procedures may also be an effective policy for attracting FDI. Inefficient import and export procedures give rise to direct costs to trading firms because such firms will have to devote resources to complying with the procedures rather than to directly productive activities.

However, there are also large indirect costs involved because of the delays that are the result of unnecessarily complex procedures. These costs may arise in several ways. The most straightforward reason is that there may be depreciation costs, either because products quickly lose their market value (e.g. as a consequence of fashion or advances in technology) or in terms of physical depreciation. Delays also increase costs for international traders because companies have to keep goods in store instead of quickly shipping them out. Long delays are also associated with increased uncertainty about delivery times, which means that companies are unable to take advantage of business and export opportunities and unable to use modern just-in-time production techniques.

According to WTO (2015a), the effect of trade facilitation on FDI is ambiguous on a theoretical basis. This follows the motivations for FDI and the relationships between horizontal and vertical FDI and trade. Horizontal FDI is designed to serve foreign customers and can be viewed as a substitute for exports. This type of FDI is affected by factors such as market size and trade costs, whereby higher transport costs or trade barriers increase the incentives for the multinational firm to choose FDI over export as a mode to reach foreign markets. Thus, in such a case, inefficient trade procedures would increase the probability of the firm choosing FDI over exports, while trade facilitation would have the opposite effect.

On the other hand, vertical FDI stems from reasons of comparative advantage, where stages of production are located in different countries based on where they can be performed at lowest cost. This will probably be accompanied by trade in both intermediate and final goods between the parent company and its foreign affiliates. Thus, trade and FDI can, in this case, be seen as complementary activities. Similarly, export-platform FDIs are also expected to be positively associated with trade. In these cases, the existence of efficient and predictable procedures at the border should have a positive effect on FDI.

1.4 Literature review

The literature on trade and FDI is vast, ranging from studies about the relationship between FDI and trade as complements or substitutes (Swenson, 2004) to studies examining the factors affecting a firm's decision to engage in FDI rather than export

(Helpman, Melitz and Yeaple, 2004; Markusen and Venables, 2005). However, the empirical literature on FDI and trade facilitation is rather scarce, especially for developing countries such as Kenya.

The link between FDI and trade is firmly established in economic literature. Casson (1990), for example, has suggested that FDI is a "logical intersection" of the theory of international capital markets, the theory of the firm and trade theory. Singh and Jun (1995) and Tanaka (2006) suggest that firms might conduct FDI for the specific purpose of "tariff-hopping" and avoiding trade costs, suggesting that trade issues have significant sway when firms make investment decisions. From a policy-making perspective, however, the identification of factors attracting FDI is particularly relevant.

Nyamwange (2009) studied the key factors that influence FDI decisions in Kenya and explored the empirical relationship between FDI and economic growth in Kenya. This study reveals that the main determinants of FDI in Kenya are market size, taxation, stable macroeconomic policies and a level of human capital that is tolerable for investors. On the other hand, Kinaro (2006) found that FDI in Kenya is determined by economic openness, taxation, human capital, real exchange, inflation and FDI in previous periods. The author also found that variables such as government consumption, financial development, natural resources, wages and political rights were insignificant in explaining FDI.

Dollar, Hallward-Driemeier and Mengistae (2004) investigated the relationship between investment climate and international integration using a probit model.[1] Based on survey results from 7,302 companies in eight developing economies (Bangladesh, Brazil, China, Honduras, India, Nicaragua, Pakistan, and Peru), the authors conclude that efficiency of customs administration is a key determinant of foreign investment.

Eifert and Ramachandran (2004) estimated that if the number of days required to clear customs were halved in Ethiopia, average firm-level productivity would increase by 18 per cent. Moreover, the authors argue that the returns to effective customs reform in more inefficient countries are substantial and have significant potential to raise investment attractiveness.

Engman (2005) examined the economic impact of trade facilitation on trade flows, government revenue and FDI and reviewed recent quantitative work on border-related trade transaction costs over a 15-year period. The study established that inefficient border procedures negatively affect a country's ability to attract FDI because of the resulting costs and risks of doing business.

Chimilila, Sabuni and Benjamin (2014) looked into the impacts of trade facilitation in the EAC. Using descriptive research methods, the study found that implementation of trade facilitation initiatives has improved trade performance, FDI inflows and trade taxes collection in all EAC countries. However, Tanzania performed better than other EAC countries in terms of FDI inflows and contribution of exports to GDP. Besides, whereas the study found a significant positive relationship between countries' trade facilitation and export performance, trade facilitation was found to have no significant relationship with FDI flows.

The internationalization of production through global value chains (GVCs), which allows firms to join international production networks rather than having to build their own from scratch, highlights the need for countries to have an open, predictable and transparent trade and investment regime, in terms of tariffs, non-tariff barriers and other restrictive measures that affect not only foreign suppliers but also domestic producers. Many of the costs that affect the smooth connection of various parts of the chain most often transcend national borders. Trade facilitation is an important determinant of GVC participation. With goods crossing borders multiple times as a result of enhanced GVC activity, trade facilitation has become central to the smooth functioning of GVCs (OECD, 2015).

Time is a critical factor in the operation of GVCs. In 2013, the Fourth Global Review of Aid for Trade pointed to customs procedures, transportation costs and delays as the biggest factors blocking developing countries from integrating value chains (OECD and WTO, 2013). In sub-Saharan Africa, too, remoteness is a critical factor that impedes further GVC participation (OECD, 2015). Furthermore, the cost of trading across borders in Africa is substantially higher than in other regions: according to the World Bank's Doing Business indicators, in sub-Saharan Africa it takes an average of 159.6 hours to import and 108.3 hours to export goods across borders compared to 15.2 and 59.3 hours, respectively in OECD high income countries (World Bank, 2016).

In Kenya, several studies on the determinants of FDI have been carried out. Njoroge and Okech (2011) assessed the factors that affect FDI inflow in Kenya's horticultural industry. The study attributed low foreign investments in the horticultural sub-sector to poor infrastructure, especially the road network and telecommunications. In addition, a cumbersome regulatory framework, subject to a bureaucratic screening and approval system, erratic weather conditions, unfair investment policy requirements for foreign investors, unfavourable labour laws and trade union activities, an inadequate policy framework for fair competition, and stringent import requirements in the EU market, constrained increased FDI flows into Kenya.

Using the Johansen co-integration technique, Kinaro (2006) established that economic openness and human capital affect FDI positively in the short run. Likewise, inflation and real exchange rates have a negative influence on FDI inflows in the short and long run, respectively. Looking at the drivers of economic growth and FDI in Kenya, Abala (2014) indicates that FDI in Kenya is mainly market-seeking and that investments require a growing GDP, political stability, good infrastructure and a sizeable market, as well as a reduction in corruption levels.

1.5 Overview of trade facilitation and FDI in Kenya

Kenya has been undertaking an integrated and comprehensive approach aimed at improving its trade facilitation systems. The priority programmes of trade facilitation focus on addressing transport logistics and improving regional transit procedures; improving information technology in customs, Kenya Ports Authority (KPA), Kenya Bureau of Standards (KEBS), Kenya Plant Health Inspectorate Service (KEPHIS) and among exporters and importers; improving the institutional and human capacity of all relevant public and private agencies; and the introduction of a data interchange information system linking all parties involved in trade facilitation.

The implementation of trade facilitation is carried out within national programmes under the Vision 2030 framework, as well as regional integration frameworks, i.e. under the EAC and Common Market for Eastern and Southern Africa (COMESA) integration initiatives. Kenya ratified the TFA in 2015 as evidence of its commitment to reducing trade costs both internally and in regional and external markets. The TFA contains provisions that aim to expedite the movement, release and clearance of goods, including goods in transit. It also sets out measures for effective cooperation between customs and other appropriate authorities on trade facilitation and customs compliance issues. Further, it contains provisions for technical assistance and capacity-building in this area.

According to the OECD (2013), Kenya performs better than most sub-Saharan African and low-income countries in the areas of harmonization and simplification of documents, automation, streamlining of procedures and external border agency co-operation. However, Kenya's performance in involvement of the trade community, fees and charges, and internal border agency cooperation is below that of sub-Saharan African and lower-income countries. In World Bank (2015), Kenya is ranked 136th of 189 economies in the aggregate ease of doing business, and third in the EAC region (after Rwanda, ranked 46 and Tanzania, ranked 131). However, it is the best regional performer in terms of the number of procedures involved in dealing with construction permits, getting electricity connected and protection of minority investors.

A key trade project with a regional dimension is the Improvement of the Port of Mombasa under the regional framework of the Northern Corridor Transit and Transport Coordination Authority (NCTTCA). The Northern Corridor is the transport corridor linking the landlocked countries of Burundi, Rwanda and Uganda with Kenya's maritime port of Mombasa. Similarly, the Northern Corridor serves the eastern part of the Democratic Republic of Congo, southern Sudan and northern Tanzania. In addition, the establishment of the Single Customs Territory (SCT), which encompasses three pillars (free circulation of goods, a revenue management system and legal and institutional framework), has significantly reduced the duration and cost of clearance of cargo. For instance, the time for clearance of cargo destined for Kigali has dropped from 21 to six days since the launch of the SCT in 2014, according to the Rwanda Revenue Authority. In addition, the average dwell time for cargo inside the port has been substantially reduced over the past five years. For instance, transit time between the port gate and Malaba stands at 3.4 days, compared with 12 days in 2008 for most transit traffic (CPCS Transcom International Limited, 2015). Transportation logistics costs have also been reduced, as shown in Table 1.1.

Whereas investments in trade facilitation are largely driven by the need to enhance trade flows, its impacts on FDI flows are equally being recognized, given the complementarity between trade and investments. Indeed, since independence, Kenya has undertaken important reforms to promote domestic and foreign investments through various policies, strategies and regulations. These include liberalization measures such as the removal of controls on prices and foreign exchange rates in the 1980s, the elimination of unnecessary licences and simplification of existing ones, and the provision of incentive schemes, including manufacturing under bond, export processing zones, the duty remission scheme, zero-rating of capital goods and raw materials and repatriation of profits, etc. The

Table 1.1 Trends in transport costs of TEU* along the Northern Corridor from Mombasa

	Destination					
	Bujumbura (US$ million)	Goma (US$ million)	Juba (US$ million)	Kampala (US$ million)	Kigali (US$ million)	Nairobi (US$ million)
2011	8,000	9,500	9,800	3,400	6,500	1,300
2014	6,500	7,000	4,700	2,900	4,800	1,045
% change	-19	-26	-23	-9	-26	-20

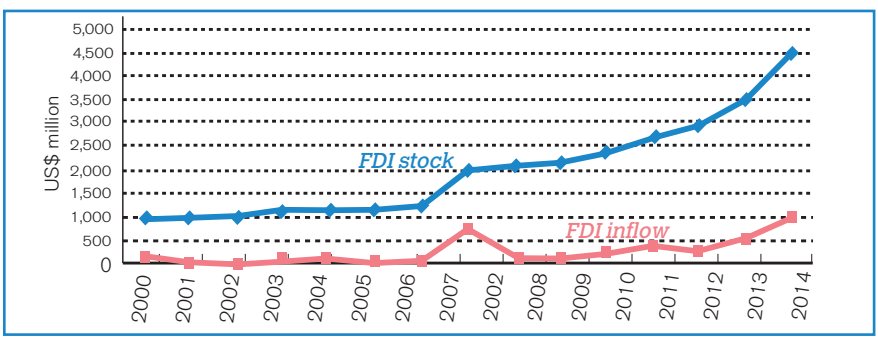
Note: *TEU (twenty-foot-equivalent unit) refers to a unit of cargo capacity.
Source: CPCS Transcom International Limited (2015).

pinnacle of the government's efforts was the establishment of the Kenya Investment Authority (KIA) as the statutory body charged with the responsibility of promoting and facilitating investment. The Authority provides a "one-stop-shop" to help investors acquire the requisite licenses, permits, incentives and other available services.

Despite these efforts, FDI flows into Kenya have remained stagnant for a long time. The trend of FDI stock and flows in Kenya is presented in Figure 1.1. The data show that, historically, FDI flows into Kenya have been stagnant and only began rising in the recent past. FDI remained stagnant between 2000 and 2006 and increased in 2007, partly due to improvements in governance following changes in political regimes.

However, growth was short-lived until a gradual increase after 2012. Previous studies attribute the inability of Kenya to attract FDI to macroeconomic instability, corruption, inconsistencies in economic policies and regulations, deteriorating public service and infrastructure (Abala, 2014). Other studies, including Kinaro (2006) and Opolot, Mutenyo and Kalio (2008), indicate that the relatively small market size, low economic growth, lack of policy transparency and rising costs of electricity and labour are the root causes of low investments. In summary, some of the reasons why Kenya's FDI has been lower than that in other EAC members in the past could be due to perceived political instability, high levels of insecurity, the high cost of doing business and bureaucratic red tape, the high cost of electricity and other utilities, high corruption levels, and so on.

Figure 1.1 Kenya's FDI inflow and stock, 2000–2014

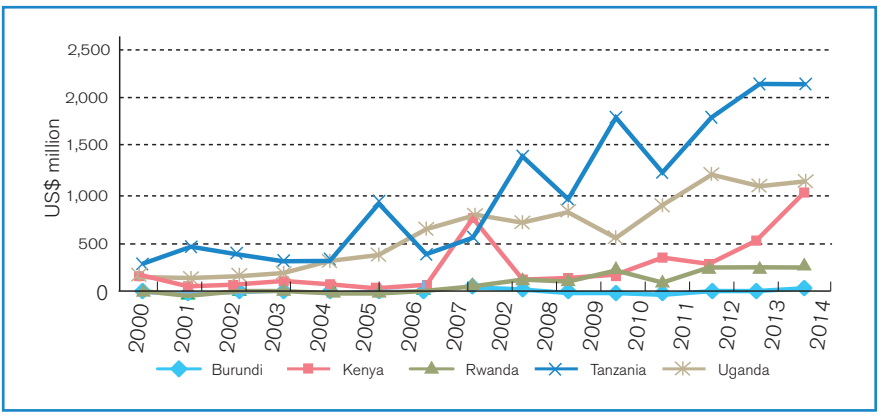


Source: UNCTAD FDI/TNC database (http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=96740), accessed on 20 February 2016.

The latest rise in investments is largely attributed to large infrastructure projects being undertaken by the government within the aspirations of the Vision 2030 framework. The trend is expected to continue, especially following the recent discovery of oil, gas, rare earth minerals and coal in various parts of the country.

A comparison of FDI flows in the EAC (Figure 1.2) indicates that Kenya's FDI remains behind that of neighbouring Tanzania and Uganda, although investment levels have increased in recent years, from US$ 339 million in 2009 to an estimated US$ 989 million in 2014 (UNCTAD, 2015a). FDI in the rest of the EAC countries has also boosted FDI flows from Kenya, yet the reverse does not occur. According to the UNCTAD FDI/TNC (i.e. transnational corporations) database, FDI outflows from Kenya in 2011 to Uganda, Tanzania and Rwanda were US$ 173 million, US$ 98 million and US$ 67 million, respectively. In Tanzania, the top FDI sources were the United Kingdom (23 per cent), India and Kenya (15 per cent each), the Netherlands, China and the United States (10 per cent each), South Africa (7 per cent), Canada (5 per cent) and Germany (3 per cent). Uganda's FDI inflows are largely driven by investor interests in mining exploration and manufacturing. In Rwanda, the financial services, mining and telecom sectors attracted the highest amount of FDI in the recent past. Besides, Kenya topped the list of the countries of origin of Rwanda's foreign capital inflows, at US$ 66.7 million in 2012, followed by Switzerland (US$ 47.1 million) and South Africa (US$ 46.4 million).

Figure 1.2 FDI inflows in the EAC region, 2000–2014



Source: UNCTAD FDI/TNC database (http://unctadstat.unctad.org/wds/TableViewer/tableViewaspx?ReportId=96740), accessed on 20 February 2016.

Table 1.2 Types of investment flows into Kenya

	2005–2007 (US$ million)	2012 (US$ million)	2013 (US$ million)	2014 (US$ million)
Cross-border mergers and acquisitions	146	86	103	1
Greenfield investments	250	1,017	3,635	2,305

Source: UNCTAD (2015a).

The types of investment inflows into Kenya are presented in Table 1.2. It is notable that greenfield investments constitute the bulk of FDI flows into Kenya, rather than cross-border mergers and acquisitions. Key investments in Kenya are mainly in oil and gas exploration, industrial production and transport. Greater focus is also being given to expansion of power generation, to serve as a platform of economic growth and firmly set up the country as a favoured regional hub for energy, services and manufacturing over the next decade.

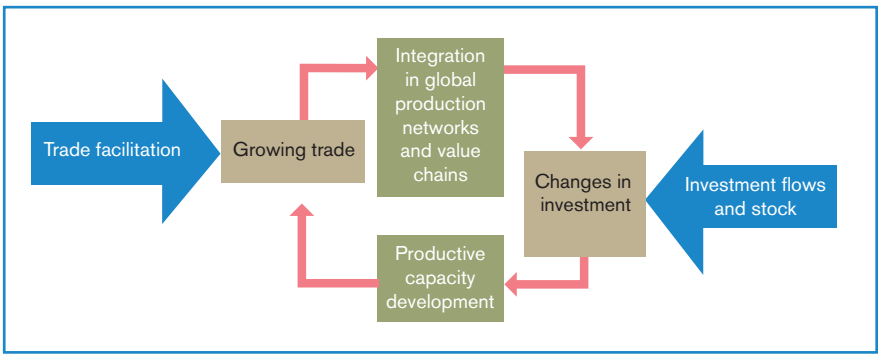
1.6 Conceptual framework and methodology

Conceptual framework

The link between trade and investment is illustrated by the complementarities and interdependence between them. According to UNCTAD (2015b), trade facilitation measures positively affect export-oriented investment and investments that benefit from facilitated imports. Equally, investment facilitation measures such as creating a conducive business environment will have positive effects on exports by attracting export-oriented investment that results in the build-up of critical productive capacities. This circle is presented in Figure 1.3, which shows how targeted interventions in trade and investment can help build productive capacities.

Trade facilitation enhances domestic and external trade flows, leading to greater integration into wider productive networks and value chains. Value chains trigger development in productive capacities, depending on the nature and availability of markets. The changes in investment flows in turn increase or otherwise affect production capacities. Productive capacities for trade constitute three pillars: (i) productive resources (infrastructure and productive assets); (ii) linkages with markets; and (iii) capabilities, i.e. skills, entrepreneurship and technology. Changes in productive capacities for trade influence the nature and intensity of trade and the cycle of trade facilitation and investment.

Figure 1.3 Linking trade facilitation and investment



Source: Adapted from UNCTAD (2015b).

Empirical model

A macroeconomic approach to FDI is used as the empirical framework for this study. Specifically, the gravity model is used to evaluate the significance of trade facilitation factors on FDI and to examine the importance of these factors. The core idea behind the gravity model of trade is the notion that trade is determined by the economic size of the countries involved as well as the physical distance between them. Pioneered by Tinbergen (1962), the gravity equation for trade states that the trade flow from country *i* to country *j*, denoted by T_{ij}, is proportional to the product of the two countries' GDP, denoted by Y_i and Y_j and inversely proportional to their distance, D_{ij}, and *Fij,* broadly construed to include all factors that might create trade resistance, as indicated in equation (1). In its simplest form, the model is specified as:

$$T_{ij}=\alpha_0 Y_i^{\alpha_1} Y_j^{\alpha_2} D_{ij}^{\alpha_3} F_{ij}^{\alpha_4} \qquad (1)$$

where α_0, α_1, α_2, α_3 and α_4 are unknown parameters.

We follow the previous studies and employ the gravity framework. The baseline model to be estimated is as presented in equation (2):

$$FDI_{ijt}=\beta_1(GDPC_{it})+\beta_2 \ln(GDPC_{jt})+\beta_3 \ln(Dist_{ij})+\beta_4 \ln(Comlang_{ij})+\beta_5(Border_{ij})+\varepsilon_{ijt} \qquad (2)$$

where:

FDI_{ijt} is the flow of FDI from the investing country *i* to the hosting country *j* in year *t*;

$GDPC_{it}$ is the GDP per capita of country *i* at time *t*;

$GDPC_{jt}$ is the GDP per capita of country $_j$ at time $_t$;

$Dist_{ij}$ is the distance in kilometres between the two countries;

$Comlang_{ij}$ represents the presence of a common language between the source and host country. It takes a value of 1 if they share a common language and 0 if they do not;

$Border_{ij}$ takes the value of 1 if the two countries share a common border and 0 if they do not;

ε_{ijt} is the error term.

FDI depends on the extent to which cheaper factors of production can be accessed overseas and also the relative ease with which intermediate goods can be moved in and out of the countries where they are being processed before being assembled into final goods. Thus, transaction costs across borders can be expected to be crucial determinants of FDI in this context. The empirical model specified in equation (2) is modified by incorporating various trade cost components, including tariff and trade facilitation related indicators:

$$FDI_{ijt} = \beta_1 (GDPC_{it}) + \beta_2 \ln(GDPC_{jt}) + \beta_3 \ln(Dist_{ij}) + \beta_4 \ln(Comlang_{ij}) + \beta_5 \ln(Border_{ij}) + \beta_6 \ln(Tcost_{ijt}) + \beta_7 \ln(Dtax_{jt}) + \beta_8 \ln(Contract_{jt}) + \beta_9 \ln(ICT_{jt}) + \beta_{10} \ln(Port_{jt}) + \varepsilon_{ijt} \quad (3)$$

where:

$Tcost_{ij}$ measures the maritime transport cost per container from the investing country's major port (*i*) to the host country's major entry port (*j*);

$Dtax_{jt}$ refers to domestic taxes on profits or capital gains;

$Contract_{jt}$ refers to the number of days required to enforce a contract;
ICT_{jt} measures the cost of internet use per 100 population in the host country.

The additional variables should, to a large degree, capture the costs inflicted on traders, which is the main interest of this study.

$Port_{jt}$ refers to the quality of port infrastructure, ranging from 1 (extremely underdeveloped) to 7 (well developed and efficient by international standards).

Following Santos Silva and Terenyo (2006), a fixed effects Poisson pseudo maximum likelihood (Poisson PML)[2] estimation of the equation in its original multiplicative form is used. The estimator has three advantages over the traditional approach of making the model linear by taking logarithms and then estimating the equation by an ordinary least squares (OLS) estimator.[3] The first is that the Poisson PML estimator can be used on the model in its original multiplicative form, implying that the observations with zero FDI flows do not have to be dropped. Given that the value of FDI is zero for a lot of the observations in the dataset of the study presented here, this is particularly relevant. Second, the Poisson PML estimator is consistent, even in the presence of heteroskedasticity. This is not true for the OLS estimator. Third, interpretation of the coefficients from the Poisson model is straightforward, and follows exactly the same pattern as under OLS.

Data sources

The bilateral FDI data from 19 source countries for the period 2001–2012 is obtained from UNCTAD. The study treats missing values as missing and zero and negative FDI data as zero. Indeed, while there is a possibility that missing value is either unreported FDI (non-zero values) or zero value, assuming that unreported FDI is zero might lead to biases in the estimation of the model.

The GDP data and Internet users per 100 population are obtained from the World Bank's World Development Indicators. Geographical distance between most populated cities (in kilometres), contiguity and bilateral common language dummy variables are obtained from the Centre d'Études Prospectives et d'Informations Internationales (CEPII). The trade facilitation indicators, including transport costs and number of days for clearance, are obtained from NTCCA (CPCS Transcom International Limited, 2015) and the World Bank's World Development Indicators.

1.7 Findings

The results for the regression analysis are presented in Table 1.3. They show that GDP per capita of the source country and commonality of language have significant positive effects on FDI in Kenya both with and without inclusion of trade costs. In the classical gravity model (1), all the variables have expected signs, i.e. GDP per capita for the source and host countries and language have positive effects on FDI flows, while distance has negative effects. It is notable that the statistical significance of distance and common language increases when the model is expanded to include trade costs.

Table 1.3 Regression results

	Classical gravity model (1)	Adjusted gravity model (2)	Adjusted gravity model (3)
Dependent variable: FDI			
Constant	10.561 (3.30)	1.246 (0.07)	10.741 (0.32)
GDP per capita (source country)	0.819 (3.13***)	1.632 (3.24***)	1.460 (3.50***)
GDP per capita (host country)	0.695 (1.52**)	-2.621 (-1.20*)	-3.630 (-0.88*)
Distance	-0.908 (-1.82**)	-2.416 (-2.01**)	-2.838 (-3.68***)
Common language	1.359 (2.09***)	3.148 (5.96***)	3.118 (6.05***)
Domestic taxes on profits		19.076 (1.48**)	19.976 (1.56**)
Port quality		0.661 (1.24**)	0.742 (1.17**)
Enforcement of contracts		-16.499 (-2.82***)	-2.899 (-0.18*)
Business costs		-5.160 (-1.21**)	-6.291 (-0.56*)
Maritime transport cost			-0.599 (-1.15**)
ICT			-4.288 (-1.53**)
Average import tariffs			-24.593 (-1.21**)
No. of observations	144	144	144
R-squared	0.03857	0.17869	0.1886

Notes: t-values in parenthesis.*** significant at 1 per cent level; ** significant at 5 per cent level; * significant at 10 per cent level.

In the adjusted model (2), the variables related to underlying trade costs in the domestic economy exhibit expected signs, except the coefficients of GDP per capita and taxes on capital gains, which are positive but insignificant. The coefficient of GDP per capita is negative, implying that a 1 per cent increase in

GDP per capita reduces FDI inflow by 2.6 per cent. Ideally, an increase in GDP per capita raises the cost of labour within the host country and therefore exporting sectors become uncompetitive in external markets. In regional markets such as the EAC, investors would shift to less costly markets. Such a scenario reflects the effects of resource- or asset-seeking FDI driven by low-cost labour and oriented towards exports. This perhaps explains the flow of FDI from the Kenyan economy to the other EAC countries, as evident in available statistics. The negative relationship between FDI and GDP is consistent with the findings of other studies such as Boyd and Smith (1992), Brecher (1983) and Brecher and Diaz Alejandro (1977).

In addition, the coefficient of domestic taxes on profits is positive. This could be attributed to improvements in the investment climate, in which firms are able to make profits and are therefore willing to comply as long as they remain profitable.

As expected, the quality of port infrastructure is positive and significant. This is due to the fact that global sourcing, which is affected by the quality and efficiency of the port infrastructure, represents a significant share of investment flows (Engman, 2005). The results indicate that a 1 per cent improvement in port facilities increases FDI flows by 0.7 per cent. This implies that improvements in the entry port positively affect FDI flows through increased efficiency in clearance and improved quality of logistics performance. The indicators related to improvement of the business environment, i.e. the number of days required for enforcement of contracts and the costs of starting a new business, are inversely related to FDI flows, as expected. For instance, a 1 per cent increase in the number of days required for enforcement of contracts reduces FDI inflows by 16.5 per cent. On the other hand, a 1 per cent increase in the number of days required to start a new business leads to a 5.2 per cent reduction in FDI flows. This is supported by the relatively high number of days and cost of claims, as indicated in a number of the World Bank's ease of doing business reports. The results indicate the essentiality of a conducive business environment in Kenya in attracting FDI.

The adjusted model (3) incorporates trade costs associated with international and domestic transactions. Generally, the indicators exhibit expected results, i.e. that trade costs negatively affect FDI flows (Engman, 2005). This is a common phenomenon for efficiency-seeking and market-seeking FDI targeting regional markets. Transportation costs, Internet use and average tariffs all have negative effects on FDI inflows in Kenya. The transportation costs reflect the poor state of physical infrastructure, i.e. roads and railway networks, which increases the time and direct cost of deliveries of capital and intermediate goods as well as exports. Greater internet use and technological advances reduce the cost of trade-related transactions and enhance firms' abilities to coordinate international production networks.

1.8 Conclusions

This chapter has investigated the effects of trade facilitation measures in the context of trade costs on FDI in Kenya. Generally, FDI flows into Kenya have stagnated over long periods of time despite reforms and investment packages issued by the government. This could be attributed to high trade costs and high levels of corruption, among other reasons. The results of the investigation indicate that improvements in indicators related to the business climate, including the quality of port infrastructure, the number of days required for enforcement of contracts, and activities that improve logistics performance, are essential drivers of FDI. The latter are mainly trade-related costs within the domestic economy.

In addition, reducing international trade costs, including transport costs, along with greater Internet use and reducing average import tariffs, are equally important. Thus, Kenya should enhance efforts to implement trade facilitation measures with a view to deepening its integration into global trade and production networks, and thereby increase FDI.

In light of its findings, this study recommends that a distinction be made between market- and efficiency-seeking FDI, and that targeted improvements be made to the business climate and the activities that reduce trade costs at domestic and international levels.

Endnotes

1. A probit model is a type of regression where the dependent variable can take two values only. It is said to have a dichotomous or binary outcome.

2. The model assumes that the response variable has a Poisson distribution modelled by a linear combination of the logarithm of its expected value.

3. Ordinary least squares (OLS) is a method used to estimate the unknown parameters in a linear regression model, with the goal of minimizing the squared differences between the observed and predicted responses by the linear approximation of the data.

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