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Effects of Business Environment on Private Firms' Capital Investments in Kenya

Rodgers Musamali and Mutuku Muleli

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THE KENYA INSTITUTE FOR PUBLIC POLICY RESEARCH AND ANALYSIS (KIPPRA)

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Abstract

A conducive business environment is crucial in attracting and sustaining private investments, thus allowing investors to devote their time to productive activities that grow their businesses. The importance of private investments is widely acknowledged in promoting efficient economic growth and development through employment and income creation. Despite the envisaged importance, private investments in Kenya still fall below the policy targets. Additionally, there is a gap in the literature on the extent to which the business environment constraints affect private firms' capital investments in Kenya. Using the World Bank Enterprise Survey data of 2018 and employing the Cragg model, this study assesses the effects of selected business environment variables on the decision and intensity of private investments in Kenya. The results show that while the policy and regulatory framework to support private investments does exist, there is need to strengthen it to enhance efficiency and effectiveness. In addition, the study reveals important business environment variables including susceptibility to corrupt practises, access to finance, informal sector competition, and payment of taxes. Other determinants such as profitability, type of firm ownership, access to foreign markets, size of the firm, and productivity of establishments affect private investments in Kenya. Notable policy interventions comprise fast tracking the operationalization of an investment council to accelerate private investments in Kenya; strengthening the regulatory framework supporting private investments in Kenya; promoting access to credit; sealing revenue leakages; and removing bureaucratic red tapes in tax rates and administration. Further, strengthening institutions of governance to deal with the corruption malaise, promoting financial inclusion and streamlining business licencing and issuance of permits is also important.

Abbreviations and Acronyms

CDF	Cumulative Distributive Function
EAC	East African Community
EPZ	Export Processing Zone
FAC	Fixed Adjustment Costs
FDI	Foreign Direct Investment
GCI	Global Competitiveness Index
GDP	Gross Domestic Product
GOK	Government of Kenya
ILO	International Labour Organization
IRR	Internal Rate of Return
KIP	Kenya Investment Policy
KRA	Kenya Revenue Authority
MEI	Marginal Efficiency Investment
MSMEs	Micro, Small and Medium Enterprises
MTP	Medium Term Plan
NIP	National Industrialization Policy
OECD	Organization for Economic Co-operation and Development
OFDI	Outward Foreign Direct Investment
PFM	Public Finance Management
PPDA	Public Procurement and Disposal Act
PPP	Public Private Partnership
QAC	Quadratic Adjustment Cost
SEZ	Special Economic Zones
SMEs	Small and Medium Enterprises
UNIDO	United Nations Industrial Development Organization
VAT	Value Added Tax
WBES	World Bank Enterprise Survey

Table of Contents

List of Tables

List of Figures

1. Introduction

Business environment is crucial in any given economy; it plays a significant role in attracting and sustaining investments. Business environment refers to all factors, both internal and external, that have a bearing on business operations such as government policies and regulations, demographic trends, global trends, cross-border developments, economic, social, legal, technological, and political factors (Kotler and Armstrong, 2004). These factors play a fundamental role in enabling a firm to build successful customer relationships. In addition, business environment constitutes a broad range of factors including regulatory, infrastructure, human capital, rule of law, political stability, functioning of markets and trade rules that determine the incentives and opportunities for firm investment (World Bank, 2004). However, business environment should be distinguished from the narrow concept of regulatory environment that includes licensing and regulatory compliance (UNIDO, 2008). For instance, the Ease of Doing Business ranking by the World Bank largely focuses on business regulation rather than the broader business environment.

Generally, a conducive business environment allows investors to devote their time to productive activities that grow their businesses. Further, it has important implications for competitiveness of the produced goods, since it affects the cost of production. Indeed, the success of a firm can be determined by how well it interacts with its environment, hence the need to design appropriate policies to adapt to the forces in its environment (Kotler and Armstrong, 2004). For instance, the Government of Kenya (Government of Kenya) has played a key role to enable private sector development through effective regulation, which is attributable to policy and business reforms introduced over the years. This is partly reflected in Kenya's ranking in the Ease of Doing Business, which has improved over time. The ranking shows that in 2020, Kenya was ranked 56 from position 61 in 2019; and from position 80 and 92 in 2018 and 2017, respectively (World Bank; 2017; 2018; 2019 and 2020). Similarly, Kenya's performance in the Global Competitiveness Index (GCI) improved from position 96 in 2015 to 91 in 2017.

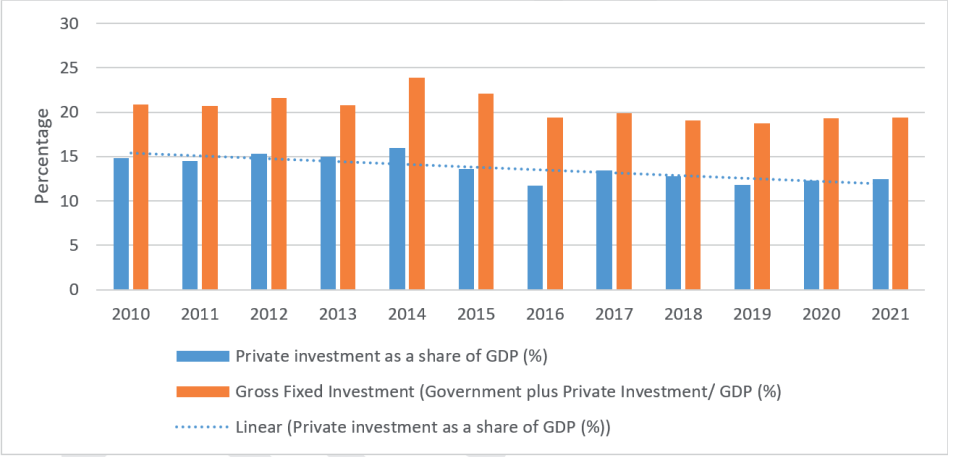
Efficient investment activities present numerous opportunities for developing countries to grow their economies. Investment influences the economic growth rate and productive capacity of the economy as it is one of the components of aggregate demand. Evidence shows that investments are both a cause and a result of economic growth (Bayraktar, 2003). The Government of Kenya has prioritized increasing investments in its long-term development framework, the Kenya Vision 2030, its successive Medium Term Plans (MTPs) and the Big Four Agenda. The Kenya Vision 2030 envisages that investments will rise to 24 per cent of GDP by 2030.

The importance of private investments is widely acknowledged through promoting efficient economic growth and development over job and income creation. Additionally, firm investment is an important indicator of the health of economies, and tax bases created through private sector growth can be used for social and environmental challenges (Bayraktar, 2003). From the theory of capital

accumulation, capital investments result when businesses purchase capital goods. Capital goods include assets such as factories, machines, tools, and other production equipment. Capital investments are long-term in nature and allow companies to generate revenue for many years by adding or improving production facilities and boosting operational efficiency. Moreover, firm investment in durable assets such as machinery and land enhance productivity because constraints imposed by fixed factors of production are lessened. The World Bank Enterprise Surveys suggest that less than five (5) in ten (10) manufacturing firms in Kenya invest in fixed assets, and productivity growth of Kenyan manufacturing firms is lower than the Sub-Saharan Africa average (World Bank, 2013). An understanding of the Kenyan firms' investment behaviour is, therefore, important in providing policy insights in areas of interventions to unlock the constraints and position the sector for the envisioned contribution to economic development.

Broadly, the factors driving firm-level investment relate to both business environment variables and firm-level characteristics. With regard to business environment, investment uncertainty and expected returns volatility affect the decisions and levels of private investments (Pindyck, 1991; Ajide, 2017). Any variable that therefore shocks uncertainty of recouping investment and/or lowers the level of expected return is predicted to have an influence on the investment decision behaviour. At the firm level, variables such as access to credit, taxation, informal sector competition, corruption and political stability explain firm investment behaviour (Banerjee and Duflo, 2008; World Bank, 2013; Rozo and Winkler, 2019; OECD, 2009; Yerrabati and Hawkes, 2015; Gani and Clemes, 2015). Other important variables include cash flow, firm size, leverage, sector, and ownership characteristics (Mazumdar and Mazaheri, 2003; Farla, 2014). Given the diverse nature of possible channels through which firm investment is constrained, it is important to glean the factors that significantly influence firms' capital investment behaviour in Kenya.

Figure 1.1: Private investments as a share of GDP



Source: World Bank (2022)

Kenya's Vision 2030 long-term development blueprint recognizes the pivotal role of investments in driving economic growth. The economic pillar of the Kenya Vision 2030 envisages that private investments will rise to 24 per cent of GDP by 2030. As of 2021, private investments were only 12.49 per cent of nominal GDP (World Bank, 2022), which is 11.51 percentage points below the policy aspiration. Further, private investments as a share of nominal GDP for the period 2010-2021 has been declining (Figure 1.1). This could partly be because of uncertainty of the future state of the economic conditions and thus expected returns to investments.

A key strategy to bridge this gap is through the growth of capital investments at the firm level. As evident from the 2018 World Bank Enterprise Survey (WBES), private sector firms in Kenya face myriad business environment-related challenges that affect their performance. The key challenges ranked include political instability (19.6%), practices of competitors in the informal economy (17.9%), tax rates (11.4%), access to finance (11.1%), and corruption (10%). The World Bank Doing Business Report further suggests that the business environment in Kenya is below expectations given that the country was ranked at position 61 in 2018 (World Bank, 2019) against a policy target of being ranked 45 by year 2022 (MTP III). A review of literature also indicates that the nature and extent to which various business environment constraints affect private sector firms' capital investments largely remain unexplored. This study aims to fill this gap. Moreover, addressing the business environment constraints in which private enterprises operate requires a comprehensive appreciation of the constraints beyond regulatory aspects, which are just but one of the many aspects of business environment. The findings from this paper are expected to inform policy makers and stakeholders on priority areas for focused interventions.

Towards that goal, the general objective of the study is to assess the business environment and its effects on private enterprises' capital investments in Kenya. The specific objectives are:

(i) To assess the effects of business environment on the decision by private firms to make capital investments in Kenya.

(ii) To examine the effect of business environment on the intensity of private firms' capital investments in Kenya.

This paper is organized in six sections. After the introduction, the next section provides the policy and regulatory review related to business environment in Kenya. Section three discusses the literature review; section four provides the methodology covering both the analytical framework and empirical model used in the analysis; section five provides the discussion of results while section six is the conclusion and provides policy recommendations.

2. Policy and Regulatory Review Related to Business Environment in Kenya

2.1 Overview of Policy and Regulatory Review in Kenya

A stable and certain business environment is a key determinant in attracting private investments and strengthening a country's competitiveness and business climate. Also, an enabling policy and regulatory environment is imperative for a conducive business environment for private investments. As a result, the government has formulated several policies and laws to facilitate and foster a conducive business environment, and thus enhance private investments. This section provides an overview of the major policies and regulatory frameworks that aim to provide a conducive environment for private investments, especially over the last two decades. Table 2.1 shows the key policies and laws and their key provisions to support the business environment.

Table 2.1: Policy and regulatory review related to business environment in Kenya

Policy/Law	Key elements of a conducive business environment
The Constitution of Kenya	• Private investments are protected. Article 65 of the Constitution of Kenya (2010) restricts land ownership in Kenya. This opens opportunities for cooperation with county governments and local communities, especially to access freehold agricultural land by a foreign investor. Landholding by non-citizens is limited to a leasehold term not exceeding 99 years. • A key function of the devolved government as per Article 174 (f) is to promote social and economic development and the provision of easily accessible services throughout Kenya. Further, Article 189 provides a cooperation mechanism for national and county governments to work together to achieve mutual goals for development of the country and individual counties, including the ability to seek new investments.

Kenya Vision 2030	• Acknowledges that the private sector is important in supporting the delivery of development priorities through public-private sector collaboration/partnerships including investments in infrastructure (especially housing), education and training and delivery of healthcare services.
Policy/Law	**Key elements of a conducive business environment**
Kenya Vision 2030	• Kenya's retail, manufacturing, and housing sector have been prioritized with flagships and initiatives to promote the sectors and to strengthen the business environment. Under manufacturing, the flagships include the industrial and manufacturing zones and parks. • Complementary services such as financial services are also established as a priority to promote savings and financing for investment. Others are investor-friendly monetary and fiscal policies. • Prioritizes provision of security to attract investments and lower the cost of doing business "The Government is determined to improve security in order to attract investment, lower the cost of doing business and to provide Kenyans with a more secure living and working environment" (Page ix).
Third Medium Term Plan of the Kenya Vision 2030 (MTP III)	• Outlines the main policies, legal and institutional reforms and programmes and projects that the Government plans to implement during the period 2018-2022. It builds on the achievements of the first and second MTPs. • Seeks to improve Kenya's ranking in the Ease of Doing Business Indicator from position 80 to at least 45 out of the 189 countries through effective business regulation.
Export Processing Zones Act, Cap 517	• Chapter 517 of the EPZ Act aims to promote and facilitate export-oriented investment. • The activities eligible to be carried out within EPZs include manufacturing, commercial and service activities geared towards exportation.

Special Economic Zones Act, 2015	• While under the EPZ Act the activities of EPZ enterprises are limited to manufacturing, commercial and services activities, the SEZ Act provides a long list of activities. For example, business processing outsourcing, manufacturing, and processing; livestock marshalling and inspection, refrigeration, value addition; and services and activities to facilitate tourism and recreation sector.
Policy/Law	**Key elements of a conducive business environment**
Public Finance Management (PFM) Act, 2012	• The PFM Act, 2012, sets out the fiscal responsibility to ensure that a reasonable degree of predictability with respect to the level of tax rates and tax bases shall be maintained, considering any tax reforms that may be made in the future.
Start-up Bill 2020	• The Start-up Bill, 2022 – still in draft form – aims to provide a legal framework for growth, mainly for start-ups to encourage their growth through facilitating their registration and creating linkages for the start-ups to access capital from investors and financial institutions.
Competition Act No. 12 of 2010	• Aims at guiding investments by prohibiting restrictive trade practices that seek to either hinder or prevent the sale, supply or purchase of goods or services between persons engaged in the selling or buying of goods or services.
Companies Act, 2015	• The Act seeks to boost Kenya's economy by encouraging investors, both local and foreign, to register companies and transact business through the introduction of less stringent rules and regulations.

Kenya Investment Policy, 2019	• This Policy guides the facilitation and promotion of private investments in Kenya, both at the national and county levels. • It is expected to enhance private investments through harmonization of investment activities. One of the key structures proposed in the policy, which could be a game changer, is the establishment of the Investment Council, which is envisaged to provide a harmonized regulatory and institutional framework for private investments. However, it will need to be given legal backing through legislation for this to take effect. • Another key tenet of this Policy is the elimination of the minimum capital requirement for foreign investors to invest (a minimum of US$ 500,000 or the equivalent in another currency). This will make Kenya relatively more competitive and attract more foreign investors as this entry barrier is removed.

Source: Various policy and legislative documents

From Table 2.1, it is noted that the government has put in place policies and regulatory frameworks to facilitate investments. The Constitution of Kenya and the Kenya Vision 2030 provide the over-arching law and policy framework upon which all other policies and regulations are premised. So far, most policies and laws in Kenya have been aligned to the Constitution and the Vision 2030 as required. This goes a long way in providing the necessary impetus for private investors as both documents proactively provide for both public and private investments. A synthesis of these policies is thematically discussed below.

a) Promotion of investments for growth

The Kenya Vision 2030 blueprint recognizes the important role of investments in driving economic growth. The economic pillar of the Kenya Vision 2030 envisages that private investments will rise to 24 per cent of GDP by 2030. The share of private investments to GDP has, however, been declining as shown in Figure 1.1. This is further emphasized through the EPZ Act and the SEZ Act, with the former focusing more on investment and promotion of exports while the latter widens the scope of the service activities. Moreover, the Kenya Investment Policy, 2019 guides the facilitation and promotion of private investments at the national and county levels. It also seeks to harmonize investment activities.

b) Cooperation between National and County governments for development

Article 189 of the Constitution of Kenya provides a cooperation mechanism for national and county governments to work together to achieve mutual goals for the development of the country and individual counties, including the ability to seek new investments. The devolved system of governance has, however, created proliferation of distinct county policies and institutions relating to investment promotion, which complicates the business environment for investments. For instance, duplication of permit fees, taxes, and other charges which add to the cost of doing business, thus making the business environment uncompetitive. To harmonize the various investment policies and regulations within counties, the Senate has established standards of uniform procedures for licensing by county governments; and for connected purposes through the County Licensing (Uniform Procedures) Bill, 2020. An effective implementation of this legislation will streamline county licensing, strengthen the business environment, and provide the necessary incentives for businesses to thrive.

c) Creation of an enabling environment to spur investment

The Kenya Vision 2030 not only takes cognizance of the role of the private sector in spurring growth through investments but also seeks to strengthen and improve the business environment. Emphasis is laid on the provision of security as an important cog in attracting investment and lowering the cost of doing business. Related to this is a key focus of the MTP III on business environment, which was to improve Kenya's ranking in the Ease of Doing Business Indicator from position 80 in 2018 out of the 189 countries to at least position 45 by 2022 through effective business regulation. Though Kenya's doing business competitiveness improved from position 61 in 2019 to position 56 in 2020, it still ranked below the Medium Term III policy aspirations of improving Kenya's ranking to at least position 45 by 2022. A major gap is the functional overlaps that exist between the ministries and government bodies created to facilitate investments, with implication of creating many layers of bureaucracies, and creating a regulatory framework that is unpredictable, thus slowing the implementation of important investment decisions, hence partly discouraging investors. For instance, the National Treasury and Planning, the Ministry of Lands, Ministry of Industrialization and Kenya Investment Authority sometimes offer similar services and requirements to potential investors, which lengthens the bureaucratic processes. It is hoped that the creation of the Investment Council in the revised Investment Policy will streamline and harmonize these roles.

Despite significant achievements in policy and regulatory framework reforms in the public sector, several existing policies and regulations remain cumbersome. For example, some policies and regulations are duplicated and overlap, thus pulling efforts in different directions. An example of these is the EPZs and SEZs, which have similar objectives of promoting exports and are designed to boost local economies by offering benefits for goods that are consumed both internally

and externally. The only difference is the scope, with SEZs having a wider focus. Another critical gap in the SEZs Act is the aspect of the business environment infrastructure. Even though the SEZs Act does not identify SMEs parks as among the designated SEZs, it provides a great opportunity for promotion of SMEs through infrastructure, regulatory and fiscal incentives as well as technical assistance (Gitonga and Shibia, 2018).

In other cases, the policy and regulatory environment appears punitive, especially the challenge of double taxation among the various devolved units of government. While the Public Finance Management (PFM) Act, 2012, sets out the fiscal responsibility to ensure maintenance of a reasonable degree of predictability with respect to the level of tax rates and tax bases, considering any tax reforms that may be made in the future, this has not been a reality. To address this, the 2019/2020 Budget Speech called for the enactment of the County Governments Revenue Raising Process Bill 2018 to regulate the introduction of licenses and levies by county governments. This bill is yet to be concluded.

To ensure coherence and harmony in investment policies, the Investment Promotion Act (2004) has been reviewed and replaced with the Kenya Investment Policy (2019). The aim has been to ensure a review of all laws and procedures to provide investor transparency and improve Kenya's business and investment climate. A key feature in the Kenya Investment Policy is the creation of the Investment Council with executive powers to fast track facilitation of both domestic and foreign investments. However, it is important to note that the proposal to have an Investment Council is not new, since it was part of the Investment Promotion Act (2004) but was never operationalized. It is hoped that this time it will be prioritized and implemented. Eventually, policies and regulations should in the long term provide an open and transparent investment environment to facilitate and encourage business through establishment of simple, flexible, and straightforward procedures for investors irrespective of the nature and size of their investments.

d) Competition to support investments

To enable the Kenyan markets benefit from healthy competition, the Competition Act of 2010 was enacted to guide investments through prohibition of restrictive trade practices. In 2018, a buyer power department was established within the Competition Authority of Kenya to exclusively handle concerns about businesses abusing their influence over suppliers. However, regulation has focused on players in the private sector while leaving players in the public sector, which can potentially lead to distortions in the market. Section five (5) of the Competition Act of Kenya No. 12 of 2010 applies to all persons including the government, state corporations and local authorities in so far as they engage in business. Further, a policy framework with pro-competition incentives and market interventions is currently lacking, which would support effective implementation of the law.

3. Literature Review

3.1 Theoretical Literature

There is vast literature on theories that have been postulated to explain investments. Generally, these theories describe the determination of the desired stocks of capital and specify the process of adjustment of closing the gap between the existing and the desired stock of capital by economic actors such as firms (Spyros, 1983 and Oshikoya, 1994). To begin with, net investment is defined as the rate of change of capital stock and the decision to invest would depend on changes in the desired stock of that asset. Second, the concept of Marginal Efficiency of Investment (MEI) measures a firm's demand for investment decision (Keynes, 1936). According to Keynes, an investment by a firm would occur if MEI (internal rate of return) on additional investments exceeds the interest rates or cost of funds. To that end, this paper reviews the following theories of investment behaviour: Accelerator Theory of Investment; Jorgenson's Neoclassical Theory of Investment; the Real Options Investment Theory; Tobin's q-Investment Theory; and Institutional Theory.

3.1.1 Accelerator Theory of Investment

The Accelerator Theory of Investment was first proposed by Clark (1917). This theory assumes that the desired stock of capital is proportional to output and, therefore, investment will depend on the growth of output. In its simplest form, it is based on the notion that a given amount of capital stock is necessary to produce a given output. The larger the gap between the existing and the desired stocks of capital, the greater a firm's rate of investment. The Accelerator Theory of Investment, however, is faced with the following limitations: acceleration principle assumes a fixed ratio between capital and output, and that the difference between the desired and actual capital is eliminated within a single period, which may not be the case since most firms can substitute labour for capital, at least within a given range. In response to these limitations, more flexible models of Accelerator Theory of Investment have been developed, which assume that a discrepancy between the desired and actual capital stocks is eliminated over several periods rather than in a single period (Koyck, 1954; Chenery, 1952; and Goodwin, 1948). In other words, the flexibility of the theory gives room for investment to vary with other relevant variables, which include those related to uncertainty and market imperfections (Twine et al., 2015). This is significant when analysing investment behaviour in developing economies (Erden and Holcombe, 2005; and Shih et al., 2007). In addition, it is assumed that the desired capital stock is determined by long-run considerations. Secondly, unlike the simple accelerator of investment, the flexible accelerator appreciates that change in output is driven by investment and that output itself also depends on capital stock. Therefore, to keep enhancing output, more investments in capital stocks are required (Baddeley, 2002).

3.1.2 Jorgenson's Neoclassical Theory of Investment

This neoclassical theory of investment behaviour is premised on determination of optimal capital stock (Keynes, 1936). It postulates that economic agents, such as firms, invest and disinvest to reach the optimal capital stock (Jorgenson, 1963 and 1967). There are several assumptions that underpin this theory: the firm operates under perfect competition; there is full employment in the economy where prices of labour and capital are perfectly flexible; the production function relates output to the input of labour and capital; and the firm maximises the present value of its current and future profits with perfect foresight in relation to all future values. Nevertheless, this theory suffers the following challenges: it assumes full employment in the economy where prices of labour and capital are perfectly flexible, which means that producers and consumers can anticipate changes in demand, supplies and prices of goods (Eisner and Nadiri, 1968). But this is not a reality because there are long time lags for orders to be executed for capital goods, which often leads to the fall in investment demand and the consequent idle capacity and labour unemployment in both consumer and capital goods industries.

3.1.3 The Real Options Investment Theory

Pindyck (1991), through the Real Options Investment Theory, introduced an element of uncertainty into investment theory due to the irreversible nature of investments. The Real Options Investment Theory postulates that investments are costly and irreversible, and therefore it predicts negative associations between investment and uncertainty. High uncertainty implies high investments risk (volatility or standard deviation of returns on capital), imposing negative incentives on investors to make capital investments. Uncertainty can be conceptualized to encompass a broad range of factors such as macroeconomic variables, policy developments or industry characteristics that increase volatility of returns.

Another element of uncertainty – policy uncertainty – is introduced by Rodrick (1991) as a determinant of private investment. The view is that when a policy reform is introduced, it is very unlikely that the private sector will see it to be fully sustainable. This could be because the fear of the unexpected could lead to a reversal, and the political-economic configuration that supported the earlier policies may resurface. For the reform to be successful, investors must respond to the signals generated by it. Rational behaviour calls for withholding investment until much of the uncertainty regarding the eventual success of the reform is eliminated.

3.1.4 Tobin's q-Investment Theory

This theory was first introduced by Kaldor (1966) and later advanced by Tobin (1969) and Tobin and Brainard (1977). It has its roots in the neoclassical theory of investment and is an important determinant of aggregate investment. Q is defined

as the market value of firms to the replacement cost of their assets. The q-theory of investment, unlike the neoclassical theory of investment, is not primarily based on the premise of an optimal capital stock but emphasises the optimal adjustment path towards the new capital stock (Oulton, 1981). However, this theory has been faulted on several grounds, like being premised on unrealistic assumptions such as efficient market and rational expectations. Further, the assumption of constant interest rates rules out the interest rate risk dynamics on investments.

3.1.4 Institutional Economics Theory

The Institutional Economics Theory explains the role of institutions in shaping economic behaviour (North, 1990) and views markets as a result of the interaction of various institutions, which include firms, individuals, social norms, countries and so on. There is growing evidence that good institutions are vital for a conducive business environment, growth, and development since they increase access to credit, improve trade and reduce the informal sector (World Bank, 2013). With growth of institutional economics, the importance of institutions and governance in growth and development cannot be undermined (North, 1990 and Ostrom, 1986). There is plenty of evidence that good institutions promote economic growth (Djankov et al., 2003). The quality of institutions has been established to be positively related to per capita income (Acemoglu et al., 2001); Aron (2000) identified a link between quality of institutions, investments, and growth. In addition, a vast body of literature has shown that developing countries face corruption and weak enforcement of property rights as the most institutional obstacles in doing business. Similarly, Friedman et al. (2000) associate corruption to a bigger informal sector. They attribute most firm's preference for being informal to corruption and bureaucracy. Corruption is viewed as a manifestation of institutional challenges.

In conclusion, the reviewed theories of investment are admissible in this study since there is no size fits all. All the theories have important building blocks to explain the theoretical and analytical underpinnings; for instance, the Accelerator Theory of Investment provides important insights for firm investment behaviours while the Real Investments Theory is informative on the general investment climate.

3.2 Empirical Literature

As observed from the theoretical literature, it is evident that capital investment behaviour depends on uncertainties relating to output demand, price, and sources of finance exposed to the firm. Additionally, the quality of institutions has a bearing on the business environment as they determine the policy and legal framework and enforcement of the same. This section assesses the empirical literature by looking at various interactions.

3.2.1 Relationship between firm investment and access to finances/ credit and legal environment

Access to finance has a significant impact on the level of investment by a firm. Developed financial systems enable firms to overcome financial constraints. Besides, it forms a base to enable potential investors to derive information about the operations of the firm. There are different channels through which access to finances affects firms and ultimately the aggregate growth (Beck and Demirguc-Kunt, 2006). First, access to external finances is positively associated with the number of start-ups (Aghion et al., 2007), which is an important indicator of firm dynamism and innovation (Ayyagari et al., 2008 and Beck and Demirguc-Kunt, 2006). Second, access to capital allows existing firms to exploit investment opportunities and growth (Beck et al., 2006). Indeed, firms can acquire a more efficient productive asset portfolio where finance infrastructure is in place (Beck and Demirguc-Kunt, 2006).

Financial constraints pose a growth challenge to smaller firms as compared to larger firms (Beck and Demirguc-Kunt, 2006). Using enterprise survey data across 90 countries, Aterido et al. (2009) show that small firms with more than ten employees are negatively affected by an adverse business environment more than micro-enterprises with less than ten employees. This is regarding access to finances and more so for sources of credit that are associated with investment and growth.

There are several studies that show the importance of finances for SMEs growth. Access to finances or lack of it is one of the most important underlying factors that hinder firm growth (Ayyagari, et. al., 2008). Banerjee and Duflo (2008) analysed loan information on 253 Indian SMEs before and after they became eligible for a directed subsidised lending programme. They found that additional credit resulted in a proportional increase in sales rather than a substitution for other non-subsidized credit, showing that these firms were credit-constrained before receiving subsidised credit. In the same vein, Zia (2008) found that small non-listed and non-group firms in Pakistan reduce their sales after they become ineligible for subsidised export credit, implying the existence of credit constraints. Therefore, the importance of alleviating financial constraints for businesses and levelling the playing field for firms of different sizes for growth.

Regarding Kenyan manufacturing firms, despite the efforts by the government to reform the financial sector, minimal impact has occurred. The Kenyan investment behaviour among manufacturing firms is substantially impacted by financial constraints as postulated by the neoclassical investment function used to analyze investment behaviour (Söderbaum and Teal, 2000). As a result of constrained financial access, firms majorly depend on internally generated funds to finance their investments. Besides, liquidity, which entails liquid assets possessed by the firm plus the current cash flow generated, also influences firms' investment behaviour (Ajide, 2017). It is also worth noting that age, which is a measure of experience accumulated by the firm affects access to finances. Experience serves to reduce uncertainty associated with a firm's output, thereby potentially increasing the firm's ability to invest (Weinberg, 1994).

Moreover, focusing on the East African Community (EAC), the relationship between legal environment and finance on investment behaviour among manufacturing firms shows that firms with secure property rights show high probability in fixed capital investment in Kenya and Uganda. Corruption, which is seen to infringe on property rights, presents a less serious obstacle in doing business in Uganda as compared to Kenya and Tanzania. A country such as Tanzania, with the lowest security of property rights has the lowest share of firms undertaking investment. It is in line with the comparatively high prevalence of corruption and the smaller percentage of firms which have confidence in the judicial process. An interesting view is, however, observed in Kenya where unofficial payments largely affect investment (Ojah et al., 2010). This is consistent with the view that corruption can foster business activity and it may not be optimal to strictly enforce property rights due to high prohibitive costs of corruption prevention in specific environments.

Robust evidence shows that property rights, external and internal finance channels which are fundamental conduits of the transmission mechanism from the legal environment to investment independently enhance firms' investment decisions in fixed capital in the region. Also, demand growth, firm size and being an exporter heavily determine the EAC's firms' investment decisions. The significance of demand growth together with internal finances indicate that an increase in demand stimulates investment as forecasted by the accelerator theory and that firms having more internal finances are in a better position to pursue investment opportunities (Ojah et al., 2010).

3.2.2 Investment and Quality of Institutions

Good institutions are vital for a good business environment, growth, and development (World Bank, 2013). Using a cross section of countries, Mauro (1995) demonstrates that the relationship between corruption and economic growth is negative after controlling several economic and socio-political factors. Knack and Keefer (1995); Sachs and Warner (1997); and Hall and Jones (1999) have all reported a negative correlation between corruption and GDP growth. Tanzi and Davoodi (1997) found evidence of bureaucratic malpractice where public funds are diverted towards low productivity projects such as large-scale constructions where bribes are easier to collect. This happens at the expense of value enhancing investments such as maintenance or improvement in the quality of social infrastructure. This may not only lead to misallocation of funds but also reduction of the volume of public funds available to government (through corrupt practices in tax collection). Lambsdorff (1999) stated that it is difficult to assess whether corruption causes other variables, or it is a consequence of certain characteristics. He further noted that empirical research undertaken on the causes of corruption has focused on political institutions, government regulations, legal systems, GDP levels, salaries of public employees, gender, religion and other cultural dimensions, poverty, and the history of colonialism. Farla (2014) investigates the determinants of firms' investment behaviour across developing and emerging economies and establishes that the probability of investing is higher for firms located in countries with more property rights protection and control of corruption. Further, foreign-

owned firms located in countries with good institutions were found to invest relatively more.

Empirical research based on various corruption indices has reported a correlation between certain forms of government regulations, poor public institutions, poverty, and income inequality. Conclusions with respect to causality are, however, vague. Recently, economists and political scientists have started to analyze the indexes of perceived corruption on different parameters. Several studies using these indexes as explanatory variables examine historical, cultural, political, and economic determinants of a variety of indicators of government quality, including corruption (La Porta et al., 1999; Paldam, 2002; Treisman, 2000).

In their work on the topic of institutions and growth, Easterly and Levine (2002) studied 72 former colonies and concluded that differences on geographic endowments such as temperature, vulnerability to diseases, and access to trading routes and partners do not directly affect development; rather, the quality of institutions affects development. Rodrik et al. (2004) empirically support their finding using 79 and 137 countries for the year 1995. They used instrumental variables to conclude that institutions are the most important determinants of income while geographic factors have weak direct effects. Habib and Zurawicki (2002) using data from 89 countries and seven of the biggest sources of FDI in the world established a negative relationship between corruption and FDI. Ahmad et al. (2012) using panel data conclude that weak institutions, political instability, and inefficient bureaucracy are detrimental to economic growth. Corruption is said to be growth-enhancing at low levels of incidence and growth reducing at high levels of incidence.

3.2.3 Investments and governance

Previous studies show that good governance is critical for promoting FDI in developing countries (Globerman and Shapiro, 2002; Globerman, et. al., 2004). Governance includes laws, regulations and public institutions that determine the level of a country's economic freedom, the cost of compliance with government regulations and legislation by the private sector, the transparency of the legal system, the competency and efficiency of state officials in carrying out government activities that affect the effectiveness of the private sector (Globerman and Shapiro, 2002; Louis et al., 2004). Good governance ensures safety of investments in the host country and thus attracts foreigners to invest (Yerrabati and Hawkes, 2015).

The importance of governance to FDI is illustrated by several studies. Hellman et al. (2002) found that corruption reduces FDI inflows in a sample of transition economies. Further, using a macroeconomic risk ranking found in Euromoney to estimate a panel data model of the determinants of FDI in Central and Eastern European countries, Carstensen and Toubal (2004) found that the riskier the country by the Euromoney ranking, the less attractive it is to FDI. Corruption affects private investments in two ways: it increases the cost of investments leading to decreased profitability; and increases uncertainty of the investment climate (Yerrabati and Hawkes, 2015). However, it is interesting to note that there

are studies that show corruption as encouraging investments and especially FDI (Gastanaga et al., 1998). While governance is expected to show positive effects from FDI, there is no conclusive evidence on this matter. Therefore, its vital to develop a policy that creates a favourable climate for investments in terms of governance.

3.2.4 Taxation and licensing

According to the World Bank (2013), tax administration is among the top 11 constraints to business while the tax rate is among the top five. Most tax literature focuses on the relationship between tax rates and development indicators. Higher tax rates are associated with lower investment, lower foreign direct investment, less entrepreneurial activity, and a bigger informal sector (Djankov et al., 2010; Lee and Gordon, 2005; Fisman and Svensson, 2007). Equally important to improving ease of doing business environment is the element of tax administration. Monitoring and enforcement of taxes in developing countries is deemed weaker than in developed countries. This is largely due to tax evasion or corruption among taxpayers and collectors, respectively (Bird, 2003). Three conditions provide for taxation corruption to occur: discretionary power, economic rents and weak institutions (Aidt, 2003). This study builds on the postulation that higher tax rates or license (permit) rates and corruption by licensing officers are a disincentive to a good business environment.

3.2.5 Relationship between investment and political factors/ stability

A stable and dynamic political environment is critical for business growth, as it reduces the risk of doing business and investments (Yerrabati and Hawkes (2015). Political instability can negatively affect state institutions and thus make the government vulnerable, making potential investors to lose confidence in the government or its policies (Gani and Clemes, 2015). The political environment of any country influences businesses to a larger extent. Similarly, the government policy that allows licensing and exportation and importation that are liberal, inflow of foreign capital and technology, affects business operations. Globalization as a government policy too has influence on businesses. The analysis of political environment is further concerned with the kind of influence a government might have on the business environment, for instance on issues of taxes or duties. The fiscal policy of the government is also important as it will determine which industries receive the most government support.

3.2.6 The relationship between investment and uncertainty

A wide range of literature exists suggesting that investment decisions made by firms depend on the perception of firms to future developments regarding output price and product demand. This primarily affects the returns expected

from the investment. In most cases, capital investment behaviour depends on future expectations (Love and Zicchino, 2006). It is, therefore, a requirement for potential investors to evaluate the expected cash flows that an investment project can generate in the future. The motivation to investment positively relates to uncertainty level with the assumption of constant returns to scale and elasticity of profit function infinitely to capital stock (Pindyck, 1991). In other scenarios, with a given set of conditions, uncertainty has been seen to impact negatively on planned investment. Regarding increasing returns to scale, investors are more likely to dislike uncertainty because of the advantages relating to decreasing marginal costs (Trigeorgis, 1995). Based on entities' subjective qualitative expectations on the measurement of uncertainty, it has been found that uncertainty in demand depresses planned and realized investment. With increased uncertainty regarding future profitability, there is a high chance of bankruptcy. Therefore, firms mostly reduce their investments because of external financing constraints (Fuss and Vermeulen, 2008).

The findings on the relationship concerning the behaviour of capital investment and uncertainty varies between researchers, but harmony exists on how they think about the constraints that impact this relationship. Among the factors influencing the relationship between the degree of investment and uncertainty is market competition. Entrepreneurs within imperfect market environments are more likely to be cautious in new investment decisions in the face of uncertainty. The future profitability of such entrepreneurs is strongly linked to market imperfection extents. Therefore, due care is taken in the investment choices. In the imperfect competitive environments, there is an adverse effect resulting from demand uncertainty on investment plans and realized investment (Sarkar, 2000). On the other hand, in the perfect capital market environment, transaction costs do not exist since all participants in the market possess homogenous expectations resulting from information symmetry (Ng'ang'a, 2015).

In addition to market competition, adjustment costs have an impact on the relationship of uncertainty to investment. In the case where firms are experiencing constant returns to scale, the level of investment raises with the degree of uncertainty, which is generated from adjustment cost function convexity. The assumption of investment theory on the concept of adjustment costs is that capital inputs are adjustable, but a cost must be incurred, which is the adjustment cost (Bloom et al., 2007). An example of a possible source of cost to this is temporary productivity decrease generated by production line decrease in new machine installation. Most firms never adjust their plans in investment to changes occurring in the market but mostly undertake huge (lumpy) investments that are not related to the indivisibility of the investment being engaged. Moreover, the degree of risk aversion greatly impacts the investment uncertainty relationship. Investors who are risk takers mostly will have a positive reaction to uncertainty. In the case of firms operating under perfect competition, increase in firm activity occurs due to uncertainty if the managers are risk neutral. The investment motivation for risk-averse firms inversely relates to the uncertainty level (Nakamura, 1999). Firms that are willing to take a risk will undoubtedly demand a high return from

the investments made compared to those that fear risks. An environment that is highly uncertain on returns in investment is likely to have a slow growth rate.

Empirical evidence also shows that firm size affects the probability of undertaking investment (Rankin et al., 2002). Regarding the size of the firm, large firms tend to have higher expertise and information access as compared to small firms. Therefore, large firms can counter uncertainty in investment. In this case, capital investments are found to increase with uncertainty. In many cases, well-established large firms are likely to hedge against risk together with uncertainty as compared to small firms which lack this opportunity. This is also true when it comes to uncertainty caused by disruptions in innovations. While small firms could potentially be seen as environments of faster technological innovations (Nicholas, 2003), large firms are able to accelerate innovations and hence have a competitive edge through creative destruction due to their ability to access resources (Schumpeter, 1942). Therefore, there is an increase in investment with uncertainty for large-sized firms whereas a decrease in the same occurs for small-sized firms. Besides, it is reasonable to assume that smaller entities may be restricted to access external financial sourcing compared to the large firms. This in turn generates a negative relationship between investment and uncertainty for the small companies (Gertler and Gilchrist, 1994).

3.2.7 The relationship between adjustment costs irreversibility and firm investment decision

Irreversibility forms an essential element affecting investment behaviour among African manufacturing firms. Most internationally proven empirical literature has it that capital investment is directly correlated with adjustment cost[1]. An investigation of manufacturing firms in a sample of five African countries that is Kenya, Zimbabwe, Ghana, Zambia, and Cameroon using the prediction of three different models of capital adjustment costs (QAC - quadratic adjustment cost, FAC - fixed adjustment costs and IRR- irreversibility) observed that irreversibility is a crucial factor affecting investment behaviour among the five manufacturing firms in Africa (Bigsten et al., 2005). However, quadratic adjustment costs have been assumed on several studies, therefore resulting to the adjustment cost function being recurrently differentiable while the marginal cost being still the rate of investment. Fixed adjustments cost and irreversibility have a positive effect on firm investment behaviour. In the long run, companies will have to adjust to a long equilibrium simultaneously. However, this has varied effects on the investment behaviour with major considerations being in the model structure of the investment decision and the extent of application. Further, modelling with reference to the dynamic discrete choice model to represent firms' decision to invest irreversibility will have a significant impact on investment decision unlike

1 Adjustment costs are costs associated with production of capital goods over and above the price of goods. Such costs are associated with for instance searching for and deciding upon the adequate piece of equipment to be purchased, installing of new capital stock, and not limited to training of new skills to staff. Hamermesh (1996) asserted that the largest share of adjustment cost usually consists of opportunity costs of foregone output during the period of adjustment.

the adjustment costs. Modelling investment rate as a function of the size of capital disequilibrium demonstrates irreversibility as an important determinant in investment behaviour. Evidence from African firms indicates that a lot of constraints ranging from interventionist industrial policies where manufacturing activities require licenses and permits will play a great role.

3.2.8 Uncertainty, irreversibility, and the use of 'Rules of Thumb' in capital budgeting

The utilization of simple capital budgeting techniques in capturing the effect of uncertainty and irreversibility on capital budgeting decisions in practice by firms shows that firms adjust payback time and discount rates in the presence of uncertainty and irreversibility and delay investment decisions. The decisions vary by the firms depending on factors such as firms' size, sector, and ownership. A considerable number of small and large firms consider demand uncertainty crucial in delaying decisions. To some extent, small firms consider interest rate uncertainty and lack of internal funding more important as compared to large firms. Further, listed firms show less sensitivity to uncertainty and delay decisions less frequently, which may be because of the separation of business ownership and control (Chittenden and Derregia, 2015). Irreversibility affects the value of a firm's option to abandon and expand as they value flexibility, reversibility and first mover advantages.

3.2.9 Investments and informal sector competition

In economic literature, informal economy is defined in various ways. However, the over-arching notion of informality is an economic activity which is not fully compliant with a given jurisdiction's laws and regulations. Examples of non-compliance include failure to obey taxation regulations, business registration requirements, or rules on labour and product safety (ILO, 2014 and OECD, 2009). Formal and informal businesses compete against each other essentially because informal firms operate in the same markets as formal firms, and this has effects on the level of competition. Informal firms are a major source of competitive pressure to formal firms as they face low entry barriers, and they further enjoy unfair advantages over the formal registered firms. The notion of unfair competition is legitimate as formal businesses must secure permits, comply with taxes and other forms of fees, and face greater scrutiny from regulatory agencies. This is in contrast with informal firms that use minimal resources to comply with given regulatory requirements (Rozo and Winkler, 2019), making informal businesses gain price advantage and increased market share (Ramalho, 2009), hence affects the profits of firms that fully comply (OECD, 2009).

A World Bank survey of firms in 14 Latin America countries showed that about 39 per cent of manufacturing firms ranked competition from informal firms as one of their top three hindrances while doing business (González and Lamanna, 2007). This ranked ahead of challenges such as taxation and access to credit.

However, the results also showed that the informal sector competition is less in heavy industries and large manufactures with high fixed costs, and therefore high cost of entry; this eliminates informal businesses since those who invest in such businesses have relatively low capital to start their businesses. In other words, businesses in industries with low fixed costs and low entry barriers are likely to face informal sector competition more. Another study on Nicaragua economy showed that formal businesses are negatively impacted by competition from informal businesses (Pisani, 2015) whose practices of non-compliance create competitive obstacles. However, the study further noted that formal firms that have been in business for a longer period experienced less threats from the informal businesses compared to the new ones. Additionally, the study showed that formal businesses behaving like informal ones (through non-compliance and other informal business tactics) were also a threat to formal businesses that fully complied with regulations.

While competition is a good thing for the market, it may not be necessarily so, as competition between formal and informal businesses may be unproductive due to cost advantages that the informal businesses enjoy due to non-compliance to most government regulations. This makes the informal businesses thrive at the cost of the formal ones and take a share of their market even when they use inefficient production techniques. On a different note, informal businesses have also been shown to contribute positively to formal businesses, for instance, by supplying inputs to them (KNBS, 2016) and being a market to some of their products. Further, informal firms can also lead to an increase in the variety of products sold in the market (OECD, 2009).

Moreover, a government's ability to enforce regulations matters as this determines a business's decision to either comply or not comply with the regulatory requirements. In an environment with a high government capacity to enforce regulations, informal firms would risk being caught and would pose less threat to formal businesses. Given the importance of the informal sector in Kenya regarding job creation and generation of output, one of the things that government agencies could do is to enhance regulation and compliance in the informal sector and ensure a level-playing ground for all investments. The regulatory agencies can further identify existing regulations that unnecessarily restrict competition or reform the overly restrictive labour, tax, and product regulations; this would encourage businesses to operate informally. The foregoing review further highlights the importance of government policies and effective regulatory frameworks' efforts in facilitating investments through provision of a conducive environment for businesses.

3.3 Overview of Literature Review

From the foregoing, it is indicative from the literature review that private investment decisions are influenced among others by credit/finance availability; uncertainty; quality of institutions which by extension determine the policy and regulatory environment; corruption; output; and prices through the

desired capital stock, among others. This study intends to analyze the business environment and its effects on private sector enterprises' capital investments in Kenya. Therefore, the ensuing empirical literature reviewed how the identified indicators affect firms' capital investment behaviour. Notably, the influence of financial variables on investment behaviour makes the specification of investment functions significantly dependent on the institutional environment in the financial system. For instance, lack of sufficient credit or constrained financing due to credit rationing can discourage investments in some sectors whether formal or informal hence discourage potential investors. On the same note, the cost of funds, the level of uncertainty and the general investment climate that includes policy and regulatory framework can influence the behaviour of private investments. Other variables that have been identified to inform investment behaviour include firm age, ownership characteristics, leverage, profitability, being an exporter, firm size, cash flow, among others.

4. Methodology

4.1 Empirical Analysis

Our study adopted the Cragg's model, also referred to as the two-part or the hurdle model (Cragg, 1971; Greene, 2002; Wooldridge, 2010) in the analysis. The model is premised on making a choice between y=0 versus y>0 and the amount of y given y>0. Treating the two decisions separately yields the hurdle or two-tiered model. Essentially, the two decisions can be considered as follows:

$$P(y=0 \mid x)=1-\Phi(x\gamma) \quad \text{.....(4.1)}$$

Equation 4.1 dictates the probability that y is zero or positive.

$$F(y \mid x,y>0)=[\Phi(x\beta/\sigma)]^{-1} \{^{(-1)} \{\Phi [(y-x\beta/\sigma]/\sigma\}, y>0 \quad \text{.....(4.2)}$$

Equation 4.2 denotes that the condition on y>0, y|x follows a truncated normal distribution.

Where the term $[\Phi (x\beta/\sigma)]^{-1}$ ensures that the density integrates to unity over y>0. The density of y given x becomes:

$$f(y \mid x; \theta)= [1- \Phi (x\gamma)]^{1[y=0]}\{\Phi(x\gamma) [\Phi x\beta/(\sigma)]^{-1}) [\Phi (\{y-x\beta\}/\sigma)/\sigma]\}^{1[y>0]} \quad \text{.....(4.3)}$$

Our model, therefore, accounts for two scenarios; the first is that the firm made capital investments, this is a discrete decision of whether a firm makes a capital investment or not (probit model). We then obtained the marginal effects from the decision to invest in capital items. The second is that the firm invested a certain amount in acquisition of capital items. The truncated regression for the continuous decision of amount spent by the firm in capital investments was observed and the marginal effects obtained. The two-part model was preferred in the analysis due to the ability to observe true zeros (positive values of y); that is, a decision to invest in capital items or not and certain amounts invested in capital items. It also relaxes the restrictive assumption of the Tobit model that the discrete decision and the continuous decisions are the same.

Considering limited empirical approaches using cross section data to analyze incidences of investment at firm level, the study obtained insights from Yan et al. (2018) and Farla (2014). We, therefore, modelled the decision for the firm to make a capital investment to be binary. The dependent variable is one (1) if the firm made an investment in the last fiscal year, or zero (0) if otherwise. This is considered as a capital investment decision where judgements are made by

the management team regarding how funds are spent to procure capital assets. Capital investment represents purchase of capital assets, including new or used fixed assets, such as machinery, vehicles, equipment, land, or buildings, including expansion and renovations of existing structures. The resulting equation for estimation is as follows:

$$P(inv_{i,t}=0 \mid x,EVT)=1-\Phi(x,EVT\gamma) \quad \text{.....(4.4)}$$

$P(inv)_{i,t}$ from equation 4.4 is defined as one (1) if the firm made capital investments and zero (0), otherwise for firm *i* in period *t*. *EVT* are the business environment variables and x are other control variables that influence private sector capital investments. Here, we examined the impact of business environment variables and other control variables on the decision to make capital investments by firms. These as informed by literature including firm age, type of ownership, productivity, profitability, being an exporter, and size of the firm. Sector and county effects are also intuitively introduced to cater for sectoral and regional differentials. The choice of variables is, however, informed by their availability in the WBES database.

4.1.1 Investment Level

Similarly, it is possible to consider the dependent variable to be the amount spent by the firm in capital investments, which can also be referred to as the investment level and can be analyzed using a truncated regression. As a result, the following equation will be considered:

$$ivm_{i,t} = \beta_0 + \beta_1 EVT + \beta_2 x + \varepsilon_{i,t} \quad \text{.....4.5}$$

$ivm_{i,t}$ is defined as the ratio of capital investment to sales made by firm *i* in period *t*. EVT are the business environment variables and *x* are other control variables that influence private sector capital investments. Alternative measures for firms' investment level used in the literature are the natural logarithm of investment, investment as a ratio of the capital stock, and capital as a ratio of labour (Farla, 2014).

4.2 Data Sources

The study used the World Bank Enterprise Surveys (WBES) as a source of data. Over time, the World Bank has been able to carry out enterprise surveys in Kenya for years 2007, 2013 and 2018. The objective of the Enterprise Surveys is to gain an understanding of what firms experience in the private sector. This is aimed at building a climate for investment, job creation, and sustainable growth. Due to the higher frequency and adequacy of variables captured, the study used the 2018 survey dataset for analysis.

4.2.1 Definition of variables

Table 4.1: Definition of variables

Variable	Description	Priori expectation
Dependent variables		
Investment decision	Coded as a dummy variable one (1) if the firm invested in purchase of new or used fixed assets[2], or zero (0) if otherwise.	
Investment level	Total amount spent on purchase of fixed assets in the last financial year in shillings as a ratio of sales (investment to sales ratio).	
Independent variables		
Business environment variables		
Political instability	Recoded as a dummy variable one (1) if political instability is much of an obstacle and zero (0) if otherwise. Those who experienced none and minor obstacles were considered not to be facing bottlenecks regarding the political instability while those that faced moderate, major, or very severe obstacles were facing bottlenecks with regard to the political instability.	-ve
Competition practises	Recoded as a dummy variable one (1) if competition practises are much of an obstacle and zero (0) if otherwise. Those who experienced none and minor obstacles were considered not to be facing bottlenecks regarding competition practises while those that faced moderate, major, or very severe obstacles were facing bottlenecks with regard to competition practises.	Mixed
Tax rates	Recoded as a dummy variable one (1) if tax rates are much of an obstacle and zero (0 otherwise. Those who experienced none and minor obstacles were considered not to be facing bottlenecks regarding tax rates while those that faced moderate, major, or very severe obstacles were facing bottlenecks with regards to tax rates.	-ve

2 These include machinery, vehicles, equipment, land or buildings, including expansion and renovations of existing structures.

Variable	Description	Priori expectation
Corruption	Recoded as a dummy variable one (1) if corruption is much of an obstacle and zero (0) if otherwise. Those who experienced none and minor obstacles were considered not to be facing bottlenecks regarding corruption while those that faced moderate, major, or very severe obstacles were facing bottlenecks with regard to corruption.	-ve
Access to finance/credit	Recoded as a dummy variable one (1) if access to finance is much of an obstacle and zero (0) if otherwise. Those who experienced none and minor obstacles were considered not to be facing bottlenecks regarding access to finance while those that faced moderate, major, or very severe obstacles were facing bottlenecks with regard to access to finance.	+ve
Other control variables		
Firm age	Described as the number of years from inception of the establishment to the current period. Age is transformed into logarithm.	+ve
Type of ownership	Coded one (1) if ownership is by shareholding company, two (2) for sole proprietorship, and three (3) for partnership.	Mixed
Productivity	$\frac{\textit{(Total sales of goods and services for the previous year)}}{\textit{Number of employees}}$ The variable undergoes logarithmic transformation.	+ve
Profitability	Total sales (revenue) minus total costs transformed into logs.	+ve
Export	Coded one (1) if the firm is involved in exports, and zero (0) if otherwise.	Mixed
Partial foreign ownership	Coded one (1) if the firm is partially foreign owned, and zero (0) otherwise.	Mixed
Full foreign ownership	Coded one (1) if the firm is 100% foreign owned, and zero (0) if otherwise.	Mixed
Size of the firm	Coded one (1) if micro (1-9 employees), two (2) if small (10-49 employees), three (3) if medium (50-99 employees), and four (4) if large (+100 employees).	Mixed

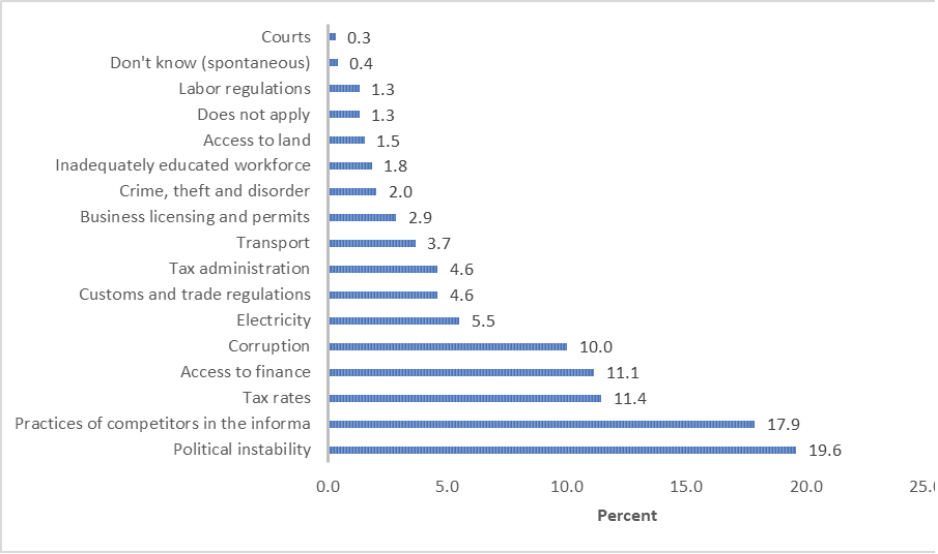
Variable	Description	Priori expectation
Sector effects	Different sectors as captured in the dataset using different codes.	Mixed
County effects	Different counties as captured in the dataset using different codes.	Mixed

Source: Authors (2022)

4.2.2 Choice of Business Environment Variables

The choice of the business environment variables was based on the first top five constraints to doing business as outlined by the establishments in the World Bank Enterprise Survey (Figure 4.1).

Figure 4.1: Business environment obstacles affecting firms



Source: WBES (2018)

The World Bank Enterprise Survey (WBES) results of 2019 indicate that top constraints affecting business establishments include political instability (19.6%), practices of competitors in the informal economy (17.9%), tax rates (11.4%), access to finance (11.1%), and corruption (10.0%).

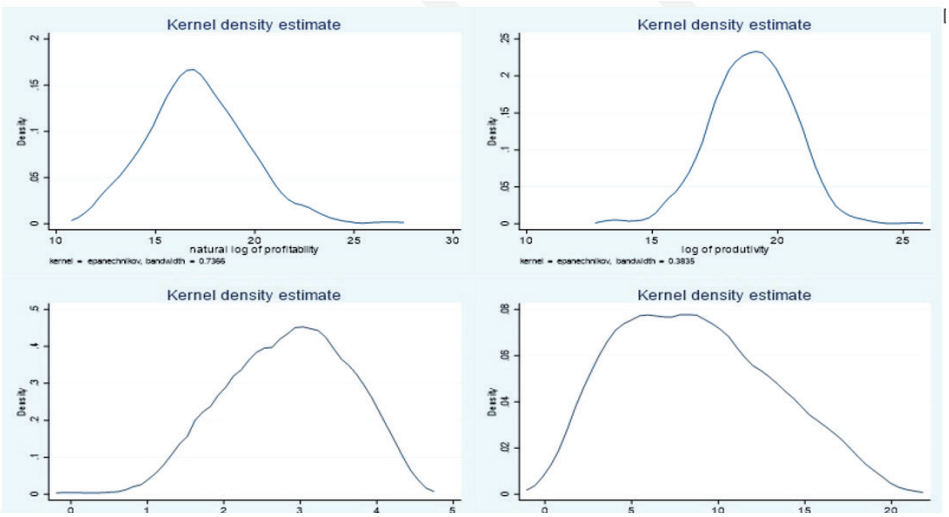
4.2.3 Descriptive Results

Appendix 1 presents the descriptive statistics of the variables. In terms of investment decisions, 39 per cent of the firms invested in capital items. Regarding investment level, about 25 per cent of investment in capital as a ratio of sales was spent on capital items. Additionally, the average rate of productivity by the firms was 19 per cent while the mean age of firms was about 23 years. The firms record an average profitability of about 1.3 billion shillings, six (6) per cent of the firms were involved in exports (either directly or indirectly), 13 per cent of firms were partially foreign-owned while five (5) per cent were fully foreign-owned. With respect to business environment variables, 53 per cent considered corruption; 59 per cent considered informal competition; 64 per cent considered tax rates; 68 per cent considered political instability; and 45 per cent considered access to credit as the obstacles to doing business.

4.2.4 Distribution of Continuous Variables

Figure 4.2 shows distributions of continuous variables; profitability, productivity and age used in the analysis. The variables attain normality after log transformations.

Figure 4.2: Distribution of continuous variables



Source: Authors (2022)

4.2.5 Correlation Matrix

Appendix 2 shows that majority of correlations between the independent variables are below 0.5. Considering the low correlations, we concluded that multicollinearity is not likely to bias the regression results.

5. Results and Discussion

5.1 Marginal Effects on the Decision to Invest

Table 5.1 shows the marginal effects where the dependent variable was whether the firm made capital investments or otherwise. In model 1, business environment variables, which were of interest in this study, are regressed against the dependent variable. In model 2, other control variables were introduced. In model 3, we introduced sector effects into the analysis while model 4 shows results when county effects are accommodated[3].

Table 5.1: Results on the decision to invest

Variables description	Model 1	Model 2	Model 3	Model 4
Corruption	0.07*	0.13*	0.16**	0.12
	(0.038)	(0.078)	(0.078)	(0.078)
Informal competition	-0.05	-0.10	-0.05	-0.06
	(0.037)	(0.082)	(0.082)	(0.079)
Tax rates	0.04	0.02	-0.01	0.06
	(0.038)	(0.086)	(0.085)	(0.085)
Political instability	-0.01	0.04	0.04	-0.06
	(0.039)	(0.080)	(0.081)	(0.083)
Access to credit	0.11***	0.18**	0.14*	0.08
	(0.038)	(0.082)	(0.084)	(0.088)
Log of age		-0.07	-0.15	-0.06
		(0.340)	(0.336)	(0.329)
Log of age squared		-0.01	0.00	-0.02
		(0.060)	(0.059)	(0.058)
Productivity		0.04	0.04	-0.00
		(0.052)	(0.052)	(0.048)
Type of ownership – sole		0.09	0.09	0.05
		(0.126)	(0.122)	(0.129)
Type of ownership – partnership		0.02	0.07	0.11
		(0.094)	(0.094)	(0.090)
Profitability		0.05	0.04	0.09**
		(0.044)	(0.045)	(0.044)
Export		0.11	0.17	0.06
		(0.135)	(0.131)	(0.122)

3 Sector and county effect results were not significant and hence not presented but are available on request.

Variables description	Model 1	Model 2	Model 3	Model 4
Partially foreign - owned		-0.24***	-0.24***	-0.19**
		(0.093)	(0.089)	(0.096)
Fully foreign - owned		0.46***	0.47***	0.42***
		(0.144)	(0.135)	(0.133)
Size - small		0.09	0.10	0.17
		(0.120)	(0.115)	(0.107)
Size - medium		0.08	0.12	0.13
		(0.182)	(0.176)	(0.170)
Size - large		0.11	0.14	0.12
		(0.212)	(0.212)	(0.192)
Sector effects			No	No
County effects				No
Observations	765	244	243	237
Pseudo R^2	0.017	0.173	0.196	0.280

*Robust standard errors are in parentheses. ***, ** and * indicate statistical significance at one (1) per cent, five (5) per cent and 10 per cent respectively.*

Source: Author's computations

Results from model 1 indicated that firms that experienced corruption as an obstacle have a seven (7) per cent likelihood of investing in capital assets than those firms that did not. This finding is significant at 10 per cent level. Similarly, in model 2 and 3, the results indicated that such firms had a 13 per cent and 16 per cent likelihood of investing in capital assets, respectively, than firms that did not. The results were significant at 10 per cent and five (5) per cent level, respectively. The findings in model 4 were not significant with respect to the variable on having experienced corruption as an obstacle, but the coefficient was positive. Similarly, firms that considered access to finance to be an obstacle had 11 per cent, 18 per cent and 14 per cent chance of investing in capital assets than firms that did not in model 1, 2 and 3, respectively. The findings were at one (1) per cent, five (5) per cent and 10 per cent significance level, respectively. The results were not significant in model 4 but the coefficient remained positive, an indicator of the desirable effect on the decision to invest in capital assets.

Profitable firms have a nine (9) per cent chance of investing in capital assets as per model 4, with the results being important at five (5) per cent significance level. Positive coefficients with respect to profitability are recorded in model 2 and 3; however, the results were not significant. In theory, firms with higher profitability are seen to have lower financial constraints, and therefore can invest in capital assets. With respect to ownership traits, firms that are fully foreign-owned have

a 46 per cent, 47 per cent and 42 per cent likelihood of investing in capital assets (models 2, 3, and 4, respectively) than domestically owned firms. The findings are significant at one (1) per cent significance level. Contrastingly, firms that are partially foreign-owned have a 24 per cent (model 2 and 3) and 19 per cent (model 4) less likelihood of investing in capital assets than domestically owned firms. The findings are significant at one (1) per cent significance level. Further, sector and county differential effects were not important factors for investments. In summary, business environment predictors of the decision to invest in capital items include susceptibility to corrupt practises and access to finance. Other determinants include profitability, and firm ownership.

5.2 Truncated Regression Results on the Investment Level

Table 5.2 presents results from the second part of the hurdle model. The dependent variable is the ratio of capital investments to sales considered as the investment level. In model 1, the estimation considers the business environment variables only. In model 2 other control variables are introduced, model 3 introduces sector effects while model 4 shows results when county effects are included. Results from model 1 indicated that firms that are susceptible to corruption tendencies are more likely to increase their investment levels on capital assets by 0.73 units than those that are not. The results were significant at five (5) per cent level. Similar positive results are recorded in model 2 and 3, with firms susceptible to corruption tendencies likely to increase their investment levels by 1.15 units and 1.1 units, respectively. The results were at one (1) per cent (model 2) and five (5) per cent (model 3) significance levels. A positive coefficient was recorded in model 4 but was not important with regard to susceptibility to corruption tendencies. Similar positive findings were reported with respect to tax rates. Firms that considered tax rates as an obstacle were more likely to increase their investment levels on capital assets by 0.93 units, 0.96 units and 1.36 units in models 2, 3, and 4, respectively than firms that do not. The results were at five (5) per cent (model 2 and 3) and one (1) per cent (model 4) significance levels. Contrary results were, however, reported with regards to informal sector competition in model 1, albeit weak. Firms that considered informal sector competition as an obstacle reduced investment levels in capital assets by 0.56 units than firms that did not. Negative coefficients were maintained in models 2, 3, and 4 but were insignificant.

Considering productivity, each additional unit in productivity increased the investment levels on capital assets by 0.74, 0.68, and 0.63 units in models 2, 3, and 4, respectively. The results were at one (1) per cent (model 2) and five (5) per cent (model 3 and 4) significance level. Similarly, small firms are more likely to increase their investment levels in capital assets by 1.82, 1.76 and 1.80 units in models 2, 3, and 4, respectively than micro-sized firms. The results were at five (5) per cent (model 2 and 3) and 10 per cent (model 4) significance level. Further, medium-sized firms are more likely to increase their investment levels in capital assets by 2.11, 2.09, and 1.84 units in models 2, 3, and 4, respectively, than micro-sized firms. The findings were at five (5) per cent (model 2 and 3) and 10 per cent (model 4) significance level. Additional outcomes indicate that large-sized firms are more likely to increase their investment levels in capital assets by 4.85, 4.91, and 4.96 units in models 2, 3, and 4 respectively than micro-sized firms. The results were significant at one (1) per cent level in all models.

Table 5.2: Truncated regression results on the investment level

Variables description	Model 1	Model 2	Model 3	Model 4
Corruption	0.73**	1.15***	1.10**	0.74
	(0.300)	(0.391)	(0.426)	(0.469)
Informal competition	-0.56*	-0.53	-0.29	-0.30
	(0.286)	(0.386)	(0.431)	(0.455)
Tax rates	0.14	0.93**	0.96**	1.36***
	(0.306)	(0.418)	(0.441)	(0.512)
Political instability	0.17	0.13	0.13	0.14
	(0.300)	(0.425)	(0.470)	(0.479)
Access to credit	-0.40	0.15	-0.06	-0.07
	(0.285)	(0.392)	(0.429)	(0.487)
Log of age		-0.95	-1.35	-1.91
		(1.917)	(1.961)	(2.007)
Log of age squared		0.17	0.21	0.28
		(0.328)	(0.335)	(0.347)
Productivity		0.74***	0.68**	0.63**
		(0.286)	(0.301)	(0.305)
Type of ownership – sole		-1.16*	-1.36**	-1.98**
		(0.620)	(0.688)	(0.865)
Type of ownership – partnership		-1.13**	-1.15**	-1.21**
		(0.454)	(0.509)	(0.524)
Profitability		-0.00	0.05	0.12
		(0.214)	(0.220)	(0.229)
Export		-1.36**	-1.19*	-1.52**
		(0.600)	(0.619)	(0.651)
Partially foreign-owned		0.03	-0.40	-0.28
		(0.741)	(0.788)	(0.802)
Fully foreign-owned		0.25	0.48	0.61
		(0.902)	(0.914)	(0.977)
Size - small		1.82**	1.76**	1.80*
		(0.847)	(0.869)	(0.926)
Size - medium		2.11**	2.09**	1.84*
		(1.054)	(1.059)	(1.093)

Variables description	Model 1	Model 2	Model 3	Model 4
Size - large		4.85***	4.91***	4.96***
Sector effects		(1.191)	(1.239)	(1.278)
County effects			No	No
				No
Constant	3.87**	2.87**	4.23**	3.47***
	(1.744)	(1.153)	(1.748)	(1.166)
Sigma	2.31***	1.18***	1.16***	1.12***
	(0.094)	(0.113)	(0.111)	(0.107)
Observations	302	105	105	105

*Robust standard errors are in parentheses. ***, ** and * indicate statistical significance at one (1) per cent, five (5), and 10 per cent, respectively*

Contrarily, firms that are owned through sole proprietorship had a reduction in investment levels on capital assets by 1.16, 1.36, and 1.98 units (models 2, 3, and 4) compared to companies owned through shareholding. The results were at 10 per cent (model 2) and five (5) per cent (model 3 and 4) significance level. In addition, firms owned through partnership had reduced investment levels in capital assets by 1.13, 1.15, and 1.21 units in models 2, 3 and 4, respectively, compared to companies owned through shareholding. The findings were significant at five (5) per cent level in all the models. In addition, firms with access to foreign markets through exports had reduced investment levels in capital assets by 1.36, 1.19, and 1.52 units as per models 2, 3 and 4, respectively, than those that were not. The outcomes are significant at 5 per cent (model 2 and 4) and 10 per cent (model 3) levels. Sector and county differential effects, however, fail to be important in the findings. In summary, susceptibility to corrupt tendencies, informal sector competition, tax rates, productivity, type of firm ownership, being an exporter, and size of the firm are important predictors of investment levels by establishments in capital assets.

5.3 Discussion of Findings

The study presents several findings; first, susceptibility to corrupt tendencies influences both the decision to invest and the investment levels on capital items. These results are consistent with Gastanaga et al. (1998) who postulates that corruption encourages investment, especially FDI. However, the verdict is contrary to Yerrabati and Hawkes (2015), who established that corruption negatively affects private investments. It also agrees with Ahmad et al. (2012) who determined that corruption is growth enhancing at low levels of incidence and growth-reducing at high levels of incidence. Similarly, the result is in line with Ojah et al. (2010) who found that unofficial payments positively affect investment largely in Kenya. These finding also seem to entrench the debate on the role of good governance on

creating a favourable climate for investments. Second, access to finances increases affinity to make investment decisions. This result is in line with Beck et al. (2006) and Beck and Demirguc-Kunt (2006) who established that access to capital allows existing firms to exploit investment opportunities and growth. Additionally, our findings corroborate with Yan et al. (2018) who hypothesized that financial constraints have important impacts on firms' OFDI decisions.

Third, firms that consider tax rates as an obstacle are more likely to increase their investment levels in capital items than those that are not facing similar obstacles. Payment of taxes is an indicator of the political and bureaucratic environment related to formality. The bottlenecks around tax rates and administration must be addressed to smoothen the process, which is good for increased revenue collection. This finding is consistent to Yerrabati and Hawkes (2015) who argue that a stable and dynamic political environment is important in reducing the cost of doing business, hence increasing investments. Fourth, informal sector competition affects investment levels of firms as noted in the findings. This finding is consistent with Pisani (2015) who noted that formal businesses are negatively impacted by competitive pressure from informal businesses particularly due to non-compliance. Fifth, profitability of an establishment increases the probability of making an investment decision in capital assets. Firms with higher profitability are seen to have enough reserves (internal funds) and are likely to experience fewer financial constraints hence can invest in capital assets. Firms with good investment opportunities can fund their investment with internal funds. In addition, there are costs associated with raising external funds making it wise to use internal funds to finance investment. This finding is consistent with Twine et. al., (2015) and Yan, et.al., (2018) who established that profits play a key role in funding investment and firms with stronger internal and external financing capacities are more likely to engage in OFDI. Sixth, ownership through shareholding increases the ability of firms to make capital investment decisions and or increases investment levels on capital assets. Essentially, this implies that firms owned through shareholding have more financial muscles to either decide to invest or increase expenditures in capital assets compared to those that are owned through sole proprietorship or partnership. Such firms may also be quick in decision making due to separation of ownership and control (Chittenden & Derregia, 2015).

Moreover, productivity increases the ability of a firm to spend more on capital investments. This result is consistent with Yan et al. (2017) who established that the higher the productivity, the more likely the firms will engage in OFDI. Further, our study establishes that firms with full foreign equity ownership are more likely to invest in capital assets compared to those that are domestically owned. This finding contrasts with Farla (2014) who established that firms that are foreign-owned invest less, albeit the evidence was weak. Our results on partially foreign-owned firms show negative effects on investment in capital assets than domestically owned firms. This also contrasts with Farla (2014) who did not find such evidence either way. In addition, our results indicate that firms with access to foreign markets are less likely to invest in capital assets than those without. This finding also contrasts with Farla (2014) who established a positive and significant outcome. Lastly, we establish that large-sized, medium-sized, and small-sized

firms are more likely to have increased investment levels in capital assets than micro-sized firms. Notably, the incidence of investment levels for large-sized firms is greater than small-sized and medium-sized firms. Our evidence is in tandem with Rankin et al. (2002) who established that large firms tend to have more expertise and information access, and therefore can counter uncertainty compared to small firms, subsequently committing more resources in capital investments. The finding is also consistent with Gertler and Gilchrist (1994) who established a negative relationship between investment and uncertainty for the small companies.

6. Conclusion and Recommendations

6.1 Conclusion

The study sought to assess the effects of business environment on private firms' capital investments in Kenya. Motivated by existing gaps in literature on private investments and business environment, the study sought to: assess the effects of business environment on the decision by private firms to make capital investments in Kenya and examine the effect of business environment on the intensity of private firms' capital investments in Kenya. The study outcomes reveal important business environment variables that affect private investments, including susceptibility to corrupt practises, access to finance, informal sector competition, and payment of taxes. Other determinants include profitability, age, type of firm ownership, access to foreign markets, size of the firm, and productivity of the establishments. Further, the study reviewed policy and regulatory framework related to business environment in Kenya. The review indicated that while the policy and regulatory framework to support private investments is in place, there is need to harmonize policies with competing objectives and further operationalize some key proposals such as establishment of the Investment Council. These will provide the necessary impetus and spur more private investments.

6.2 Policy Recommendations

In line with the findings, the study recommends the following:

- The Kenya Investment Policy (KIP 2019) is supposed to ensure policy coherence and harmony in the investment space. To this, end an Investment Council has been proposed to streamline the process. Fast-track its operationalization through legislation to accelerate more private investments.
- Improvement of Kenya's competitiveness and advancement of its profile as an investment destination is addressed through policy interventions such as EPZs and SEZs. While these policy propositions are largely tailored towards infrastructure provision, simplification of business regulations, expanded market access and reduced taxation; the National Treasury and Planning and the Ministry of Trade need to establish the effectiveness of business regulations in attracting and retaining private investments and redress the possible policy gaps.
- Strengthen the regulatory framework for supporting private investments in Kenya to enhance efficiency and effectiveness in generating high levels of private investments. This can be done by streamlining legislations related to investments to ensure harmony.
- Access to credit is an important attribute towards spurring investment and growth of firms. Policy initiatives that enhance access to credit by the

government through lowered interest rates, relaxed collateral requirements, and adoption of technology and innovations need to be encouraged.

- Indirect increase in revenues through policies that increase economic activity, income, and wealth should be prioritized since they will lead to lowered tax rates. Initiatives that allow sealing of revenue leakages through automation of revenue collection both at county and national levels and removing bureaucratic red tapes in tax rates and administration are also plausible.
- Overall, it is paramount to promote and maintain a good business environment by dealing with the corruption malaise through strengthened institutions of governance, promoting financial inclusion and access, and streamlining business licensing and issuance of permits to attract and maintain investments and growth in Kenya.

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Appendices

Appendix 1: Descriptive statistics

Variable	N	Mean	Std. Dev	Min	Max
Investment decision	765	0.39	0.49	0	1
Investment level	302	0.25	0.87	0.00004	10.14
Corruption	765	0.53	0.50	0	1
Informal competition	765	0.58	0.49	0	1
Tax rates	765	0.63	0.48	0	1
Political instability	765	0.67	0.47	0	1
Access to credit	765	0.45	0.50	0	1
Age	765	22.90	17.31	1	95
Productivity	765	18.98	1.63	13.12	25.39
Type of ownership	765	2.19	0.81	1	3
Profitability (billions)	345	1.28	22.8	-48.4	420
Export	575	0.06	0.24	0	1
Partially foreign owned	765	0.13	0.33	0	1
Fully foreign owned	765	0.05	0.23	0	1
Size of the firm	765	2.14	1.02	1	4

Source: Authors calculations

Appendix 2: Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Corruption	1													
2. Informal competition	0.21	1												
3. Tax rates	0.29	0.26	1											
4. Political instability	0.19	0.06	0.12	1										
5. Access to credit	0.21	0.27	0.23	0.12	1									
6. Log of age	-0.03	-0.14	-0.03	0.01	-0.14	1								
7. Log of age squared	-0.04	-0.15	-0.02	0.02	-0.15	0.98	1							
8. Productivity	-0.12	-0.18	0.06	0.02	-0.13	0.25	0.25	1						
9. Type of ownership	0.06	0.01	-0.09	0.04	-0.01	-0.07	-0.07	-0.09	1					
10. Profitability	-0.08	-0.08	0.05	0.05	-0.06	0.08	0.08	0.27	0.06	1				
11. Export	-0.04	-0.03	0.12	-0.02	0.03	0.30	0.32	0.32	-0.21	0.18	1			
12. Partially foreign-owned	0.08	0.08	0.09	-0.19	-0.07	0.05	0.05	0.18	-0.02	-0.01	0.25	1		
13. Fully foreign-owned	0.04	-0.07	0.03	-0.18	-0.12	0.12	0.13	0.16	0.06	0.00	0.21	0.61	1	
14. Size of the firm	0.03	-0.24	-0.06	-0.03	-0.20	0.35	0.34	0.27	-0.07	0.12	0.26	0.12	0.07	1

Source: Authors calculations

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