EFFECT OF PRICE FLUCTUATIONS ON FINANCIAL PERFORMANCE OF AGRIBUSINESS FIRMS IN KENYA

BY

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DECLARATION

I declare that the work in this dissertation has not been previously published or submitted elsewhere for award of a degree. I also declare that this is my own original work and contains no material written or published by other people except where due reference is made and author duly acknowledged.

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I do hereby confirm that I have examined the master's dissertation of

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ABSTRACT

This study focused on price fluctuations and their influence on the financial performance of agribusiness firms in Kenya. The study was guided by three specific objectives: Establish the effect of international commodity price fluctuations on the financial performance of agribusiness firms in Kenya; determine the effect of raw material price fluctuations on the financial performance of agribusiness firms in Kenya; establish the effect of cost of labour fluctuation on the financial performance of agribusiness firms in Kenya and determine the moderating effect of subsidy fluctuations on the financial performance of agribusiness firms in Kenya. The study involved a survey of agribusiness firms that are operating in Kenya. Secondary data was collected for the purpose of answering the research questions. Stratified sampling was adopted in selecting 27 firms that formed the sample size. Regression analysis was used to determine the effect of price fluctuations on the financial performance of agribusiness firms in Kenya. The research established that based on the data collected, the impact of international commodity prices and raw materials prices are not very significant in affecting financial performance. Cost of Labour fluctuation was found to be a significant factor affecting the financial performance of the agribusiness firms with or without the moderating effect of subsidy fluctuations. However, before the introduction of subsidy fluctuations into the regression model, all the three variables, international commodity price fluctuation, raw material price fluctuation and cost of labour fluctuation were found to have a statistically significant relationship with ROA. It was further evident from the research findings that the moderating effect of subsidies indicates that it has a significant effect on financial performance. The study recommended that subsidies granted by government in agribusiness should be grounded on facts about their impact on price fluctuations and eventually their consequences on the profitability of the market.

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DEDICATION

The research project is dedicated to my lovely wife Marolyne, My lovely daughters Patience, Peacependo and Promise for the moral support offered while I was studying and for their understanding during my absence as I worked on the study. May our Good Lord dearly reward your efforts.

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ACRONYMS AND ABBREVIATIONS

CPI:	Consumer Price Index
ECI:	Employment Cost Index
KAAA:	Kenya Agribusiness and Agroindustry Alliance
ROA:	Return on Assets
ROE:	Return on Equity
UNCTAD:	United Nations Council on Trade and Development

TERMS AND DEFINITIONS

Agribusiness firms: Refers to those firms that are engaged in agricultural production of agrochemicals, breeding, crop production and processing, distribution of firm machinery and marketing of agricultural products (Triki and Affes, 2011).

Determinants: Refers to a factor or a cause that makes something to happen or occur or take place (Sarris, 2009).

Financial performance: Refers to a quantitative measure that is used to determine an entity's performance at a certain point in time or during a specific period of time (Brealey et al., 2009).

Fiscal policy: Refers to the use of government spending and taxation to influence the economy. When the government decides on the goods and services it purchases, the transfer payments it distributes, or the taxes it collects, it is engaging in *fiscal policy* (Bloom, 2009).

Monetary policy: Refers to the actions of the central bank that regulates the amount of money in circulation within an economy. These actions usually have an effect on the interest rates (Bloom, 2009).

Price fluctuations: Refers to the deviations in the value of the prices of commodities from one vale to another during a specific period of time. It therefore reflects instability in the prices if commodities (Sarris, 2009).

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The last two decades have been characterized by an increase in the prices of agricultural products (Mustapha and Culas, 2013). The most affected products are agricultural food products whose prices have experienced fluctuations in the recent past. This price volatility of agricultural products has attracted a lot of attention from various frontiers including the economic and political ones. The main reason why these price fluctuations attract more attention from the political and economic class is the impact they have on the living standards of the people. Most consumer goods are largely agricultural and price fluctuations of these products directly affect the incomes of many who depend on them as well as the living standards of those who depend on them (Ghosh, 2012).

Fluctuation of agricultural prices is not a preserve of one country or a specific economy but rather an occurrence that has engulfed a number of countries around the globe. Several countries both in the developed and developing world are grappling with agricultural price fluctuations that are caused by factors that are sometimes beyond the control of these countries. In India for instance, instability in the prices of agricultural produce has been experienced over some time and this has greatly affected the spending patterns of the consumers. The fluctuations have also raised several questions on what the government can do or the policies that can be put in place to achieve stability of agricultural prices since they play a very significant role in economic growth and development (Sarris, 2009).

Developing countries especially in Africa have also experienced continued fluctuations in agricultural prices in the past few decades. Mustapha and Culas (2013) assert that Africa has the largest population of the world's hungry who are adversely affected by the frequent fluctuations in agricultural prices. They further argue that the price fluctuations not only affect the people who directly depend on agricultural products but also those firms that are conducting business in the agribusiness sector. Governments have been involved in deliberate attempts to ensure that the fluctuation of agricultural prices in Africa are managed in order to achieve stability in a sector that contributes a lot towards the economic growth of most African countries (Mustapha and Culas, 2013).

Sarris (2009) indicates that prices of most agricultural commodities have generally experienced a decline from the early 1980s to the present time. He further outlines that real prices of bulk food commodities have had a decreasing trend; real prices of vegetable oils have tended to decrease; the prices of various agricultural produce has kept on decreasing for the last three decades in the international market. One of the factors that were found to contribute significantly to the fluctuations in the prices of agricultural commodities is the non-use of the main inputs in the agricultural process. For instance the main inputs such as fertilizer is not commonly used by most of the players in the agricultural sector despite the fact that it is a very important in enhancing agricultural production (Ghosh, 2012).

The type of trade policies that are adopted by most countries contribute significantly towards determining the rate of agricultural price fluctuations. For instance in Africa, most countries import grains more than they exports agricultural products (Triki and Affes, 2011). Although some African governments have liberalized trade in agricultural imports, many African

nations have government-controlled firms that monopolize the importation of agricultural products. These institutions try to control the price risks by managing the amount of imports; however, they have little to no control over the prices of the commodities being sold in the local market (Katungi.,et al 2011). Because of this, the government often faces large budget deficits.

Anderson (2009) argues that subsidizing agricultural development usually causes the decrease in consumer prices. However, the African agriculture, though being the source of existence for more than 80% of African population (Teweldemedhin and Van Schalkwyk, 2010), is in neglect, and is organized inefficiently, giving the local producers no chances for transferring from subsistence farming to commercial farming (Dan-Azumi, 2010). There is little agricultural output sold within the state, and there are very low levels of exports conducted by African agricultural producers (Thornton et al., 2010). African governments opt to import the food products to meet the local demand. This becomes an endless cycle wherein the local agriculture does not receive enough subsidies to increase yield, and the government continues to spend more in importing food to feed the population (Tepe et al., 2011).

The tariff rates that are set by the developed countries also favor importation in Africa, as opposed to exporting (Swinbank, 2010). This results to massive importation of cheaper agricultural goods. Locally produced food would then have to compete with cheaper imported food, thus, making the commodity prices lower, however, this often drives local farmers out of business due to lack of profit. On the other hand, Pearlberg (2008) argued that importation and international food prices are not to blame for poverty and hunger prevalence in developing countries. He claimed that the imported food market is generally made up of the less

poverty-stricken population, while those who are hungry usually depend on the locally produced food. Therefore, it is ultimately the productivity of local farmers that dictate undernourishment rate and not food prices as influenced by importation.

1.1.1 Price Fluctuations in Agribusiness Firms

According to Sarris (2009) there are several reasons of price fluctuations in many agribusiness firms around the globe. He further argues that the population of the entire world has been increasing over time and the income of the people has also been increasing. These changes have adverse effects on agricultural price volatility in many countries. Urbanization has also been on the increase. Many people are now settling in the urban areas than before and this has increased the demand for agricultural products. The increased demand has contributed a great deal towards agricultural price fluctuations (Sarris, 2009).

Borychowski and Czyżewski (2015) assert that commodity prices are the result of the interaction of many factors, including basic aggregates of market – supply and demand. There are complex linkages between them and they are further modified and distorted by the action of government and government policies. They further note that there are a number of supply side factors that lead to price fluctuations such as: the arable land available for farming; the level of biological and technological progress in agriculture; changes in weather and climate as well as the cost of production. The demand side determinants include: alternative uses of land; changes in consumption patterns and speculations of financial institutions. Other factors include globalization and changes in exchange rates (Borychowski and Czyżewski, 2015). Land and water resource constraints are also major determinants (Sarris, 2009).

Price fluctuations have a number of effects on both the larger economy and individual firms that operate within that particular economy. According to the common Fund for Commodities (2005) most people and firms in the developing countries largely depend on agricultural production and the volatile prices bring a lot of instability and does not guarantee predictable income. Firms may not also earn or predict their financial rewards due to unstable prices that keep on changing from time to time.

1.1.2 Agribusiness

Baruah (2013) defines Agribusiness as all the activities and firms that are engaged in farming, processing and distribution of agricultural products. He further asserts that agribusiness has significantly transformed into a complex system with traditional farming and processing becoming more complex due to more recent and modern innovations. The growth of agribusiness has been fueled by the need for better and higher returns by farmers who realized that farming alone did not provide sufficient returns. Processing of agricultural products to add value became necessary and important in increasing the returns to farmers.

The food and fibre system is now largely being referred to as agribusiness industry. The term Agribusiness was first coined by Davis and Goldberg (1957). In their presentation about agribusiness they argue that it is a system that has three main sectors: The first sector represents the agricultural input sector which is responsible for supplying inputs for farming; the second sector represents the production sector which involves the actual agricultural farming of various agricultural products and the last sector is the manufacturing and processing sector which are the firms that transform agricultural produce into various products.

1.1.3 Firm Financial Performance

An organization's financial performance can be defined in terms of how well a firm uses its assets from its core operations and generates revenues over a given period of time. This is usually a measure that is compared to some given industrial average standard of similar firms in the same industry. Brealey et al., (2009) argue that financial performance of an organization can be measured in terms of profitability, liquidity, solvency, financial efficiency and repayment capacity. Profitability measures the income generated by a firm through the use of its productive assets; liquidity measures the ability of a firm to meet its short and long term obligations when they fall due; solvency measures an organization's ability to pay all its financial obligations if all of its assets are sold. Therefore, a firm financial performance can be measured using net income or net operating income, its assets performance or even its cash flows.

Financial performance is a very important aspect of management and can therefore not be ignored because it is central to the survival of any business enterprise. Without sound financial performance, a business organization may easily close down its operations. Successful performance of an organization will depend on a number of factors such as capacity to manage financial issues effectively. There is also evidence of a positive association between financially related activities such as planning, maintenance of financial records, obtaining external finance and professional finance advice, and successful financial performance (Ismaila, 2011).

Measuring the performance of an organization is very important since it determines whether the organization has been able to achieve its financial objectives or not. There are a variety of measures that organizations can use or adopt in measuring their performance. One such category of measures is the liquidity measures that determine the ability of the business to

meet its financial obligations without disrupting any of its activities. These measures usually rely on the relationship between assets and liabilities of the organization. The other type of measures are solvency measures which determine the amount of borrowed capital used by the business relative the amount of owner's equity capital invested in the business (Ismaila, 2011). This implies that solvency measures provide an indication of the business' ability to repay all indebtedness if all of the assets were sold. Financial performance can also be measured using profitability measures such as Return on Assets (ROA) and Return on Equity (ROE). The profitability measures are important in measuring the extent to which a business can be able to generate profits from the factors of production (Crane, n.d).

1.2 Research Problem

The stability of prices is very important in ensuring that inflation and deflation are effectively managed within any economy. It also ensures that different sectors in an economy can enjoy predictable prices of commodities. However, price fluctuations are common in business as a result of changes in demand and supply (Frankfurt and Main, 2009). The issue of price volatility has assumed critical importance today in the context of agricultural trade liberalization. One of the major arguments advanced against agricultural trade liberalization is that it would lead to transmission of international price volatility into domestic markets. Extreme volatility in commodity prices, particularly of food commodities, affects poor agricultural labourers and labour engaged in unorganized sector adversely because their wages are not index-linked. Small farmers in countries like India, with low propensity to save and poor access to efficient saving instruments cannot cope with the revenue variability resulting from fluctuations in output prices. They do not possess the requisite know-how for crop diversification and also

lack access to appropriate technology. Commodity price volatility poses problems also for the governments and exporters of the primary commodity-producing developing countries (Sekhar, 2013).

Price fluctuations have also been experienced in Kenya and the impact has been felt in a number of sectors. Research on price fluctuations reveals diverse findings. A study by Ghosh (2009) on the determinants of agricultural prices in India revealed that the quality of produce played a very significant role in determining the fluctuations. Mustapha and Culas (2013) also conducted a study on the causes, magnitude and consequences of price variability in agricultural commodity market in Africa. The study established that lack of sustainable farming practices was the main cause of this problem. Kibaara (2008) carried out a study on trends in Kenya agricultural productivity and established that agricultural productivity has been growing at a slower rate.

The studies reviewed above reveal evidence of research on agribusiness. However, the available studies have mainly focused on the determinants of agricultural price fluctuations. Even in the studies mentioned above only determinants have been addressed but not the effect of price fluctuations on the financial performance of agribusiness firms. This leaves a research gap that needs to be bridged. This study will therefore seek to cover this existing research gap by investigating the effect of price fluctuations on the financial performance of agribusiness firms in Kenya.

1.3 Research Objectives

1.3.1 Overall Objective

To establish the effect of price fluctuations on the financial performance of agribusiness firms in Kenya.

1.3.2 Specific Objectives

The study seeks to achieve the following objectives:

i. Establish the effect of international commodity price fluctuations on financial performance of agribusiness firms in Kenya
ii. Determine the effect of raw material price fluctuations on financial performance of agribusiness firms in Kenya
iii. Determine the effect of labor cost fluctuations on financial performance of agribusiness firms in Kenya
iv. Determine the moderating effect of subsidies fluctuations on financial performance of agribusiness firms in Kenya

1.4 Research Questions

This study will seek to answer the following questions:

i. What is the effect of international commodity price fluctuations on financial performance of agribusiness firms in Kenya?
ii. What is the effect of raw material price fluctuations on financial performance of agribusiness firms in Kenya?

iii. What is the effect of labor cost fluctuations on financial performance of agribusiness firms in Kenya?

iv. What is the moderating effect of subsidies fluctuations on financial performance of agribusiness firms in Kenya?

1.5 Significance of the Study

The findings of this study will be beneficial to various groups of people. The management of agribusiness firms in Kenya will get more information and better understanding of the determinants of agricultural price fluctuations. They will also get access to information on the impact of the price fluctuations on the financial performance of the firms. This will be important to the firms in decision making concerning issues related to price fluctuations.

The policy makers both in the agribusiness industry and the government will also benefit from the findings of this study. They will be able to find information that can provide the basis upon which some policies will be developed. This will assist in ensuring that appropriate policies are formulated in order to enhance stability in agricultural prices.

The findings of the study will also be very important to those in the academic realm who may be interested in conducting further research in agricultural price fluctuations both now and in the future. The findings will provide relevant literature that can inform future researchers and also provide them with more insight on this concept.

1.6 Scope of the Study

This study will focus on the agricultural price fluctuations and their influence on the financial performance of agribusiness firms in Kenya. The study will be guided by three specific

objectives: Establish the effect of international commodity price fluctuation on financial performance of agribusiness firms in Kenya; determine the effect of raw material price fluctuation on the financial performance of agribusiness firms in Kenya; determine the effect of labor cost fluctuation on financial performance of agribusiness firms in Kenya; and determine the moderating effect of government policy on price fluctuations among agribusiness firms in Kenya. The study will involve a survey of agribusiness firms that are operating in Kenya. Secondary data will be collected for the purpose of answering the research questions.

1.7 Justification of the Study

It has already been observed that there is research that has been carried out on agribusiness and price fluctuations. Most of the studies have largely focused on the causes of the price fluctuations with little or limited attention to the effect of such fluctuations on the financial performance of agribusiness firms. On the other hand the studies available in this area especially in Kenya have not investigated the agribusiness industry. This makes this particular study unique and different from the other since it seeks to address an issue that has not been addressed before and also focuses on a sector that has not been given significant focus.

1.8 Limitations of the Study

The major limitation that may face the researcher is the distance that may be involved in data collection since the agribusiness firms are located in various locations across the country. In order to overcome this limitation, the researcher will make use of mail questionnaires or telephone interviews and also utilize secondary data that is available from reliable sources.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of the literature related to effect of price fluctuations on the financial performance of firms. Among the issues covered include the relevant theories; the determinants of price fluctuations and the conceptual framework.

2.2 Theoretical Review

There are a number of theories that explain the concept of price fluctuations in relation to financial performance of a firm. This study will be based on three main theories: the working capital theory of the firm; the value based theory of the firm and the transaction cost theory of the firm.

2.2.1 Working Capital Theory of the Firm

The working capital theory of the firm is a slight variation on the theory of the firm. This variation is made on the understanding that the theory of the firm assumes that there is no time difference between the time costs are incurred and the when revenue is earned by the organization. However, such an assumption is only true in perfectly functioning financial markets. This is implies that this assumption may not be applicable to diverse situations. For instance in imperfect financial markets, such as those found in majority of developing economies, this assumption fails to capture the need for liquidity and therefore does not fully capture the effects of financial constraints on the dynamic behaviour of the firm. The working capital theory of the firm therefore captures the effects of financial constraints on the behavior of the firm that the standard theory of the firm would otherwise not capture (Chan, 2010).

The working capital theory of the firm posits that under very few assumptions, the dynamic model is easily tractable to a static solution. The model predicts that under financial constraints, firms would exhibit countercyclical investment behavior. Furthermore constrained firms are constrained particularly during times when there are positive price shocks and as such, this has large implications for growth. The theory further indicates that properly accounting for working capital and internal finance changes the predictions for firm behavior, especially those concerning the firm's response to demand shocks. Under financial constraints, the reallocation of financial resources between factors in response to shocks causes investment to be countercyclical. When current demand is high, constrained firms forgo investment to allocate scarce resources toward current production. When demand is low, firms produce less and have lower costs, relaxing the liquidity constraint and enabling them to allocate more resources to investment (Pavcnik, 2002).

The working capital theory of the firm is relevant to this study since it tries to explain the behavior of individual firms during price and demand shocks. It explains how firms allocate resources and the effect of such actions on production and liquidity of firms. The theory will therefore be important in explaining the effect of price fluctuations on the financial performance of agribusiness firms in Kenya.

2.2.2 Value Based Theory of the Firm

This theory was developed by Alderson (1957) and later by Drucker (1973). The theory posits that efficiency of reference activity within the framework of a reliable enterprise is evaluated on the basis of value-based monitoring instruments. Such instruments in total are a set of generalized and meaningfully considered notions forming a precise theory of value-based

management. As a confirmation of this assertion, it would be enough to refer to the primary purpose of management which is just a rise in the value of enterprise with simultaneous preservation of the enterprise value on the competitive market; otherwise, one may consider capitalization mechanism within the framework of transformation of future economic benefits into current value (Drucker, 1973).

The theory further posits that all enterprises have both incoming and outgoing cash flows. The outgoing cash flows are essentially the inputs that are engaged by an organization in its activities whereas the incoming cash flows are the revenues earned by the enterprise. This means that such enterprises provide for a capital turnover either promoting or hampering their growth and productivity. The consideration of value-based theory of the firm when reference activity is described in terms of a precise theory is governed by a certain language which in itself is a set of assertions, meaningful from the viewpoint of creation of added cost (Kopotov, 2006). The cost of an enterprise is determined by the enterprise's capability of generating cash flow for a long period of time. Financing requirements with respect to an enterprise are connected with sustainable functioning of the enterprise.

The relevance of the value based theory of the firm to this study relies on the fact that the theory focuses on inflows and outflows into the firm. The outflows are equated to the inputs that must be acquired by the firm whereas the inflows are equated to revenues that are earned by the firm. Both the outflows and the inflows have a price element that will determine the level or amount that is spent or earned by the firm. Price fluctuations are therefore likely to have an effect on the outflows and inflows as well as the financial performance of the firm. The theory is

therefore important in guiding this study on the effect of price fluctuations on the financial performance of agribusiness firms in Kenya.

2.2.3 Transaction Cost Theory of the Firm

The transaction cost theory was first developed by Commons (1934) who recognized that the transaction is the basic unit of economic analysis in an organization. The theory seeks to explain why companies exist, and why companies expand or source out activities to the external environment. The theory postulates that companies try to minimize the costs of exchanging resources with the environment, and companies try to minimize the bureaucratic costs of exchanges within the company (Williamson, 2002). From time to time, companies seek for cheaper ways of exchanging resources with the environment, against the bureaucratic costs of performing activities in-house. The theory perceives institutions and market as different possible forms of organizing and coordinating economic transactions. When external transaction costs are higher than the company's internal bureaucratic costs, the company will grow, because the company is able to perform its activities more cheaply, than if the activities were performed in the market (Williamson, 2002).

According to Coase (1937), every company will expand as long as the company's activities can be performed cheaper within the company, than by e.g. outsourcing the activities to external providers in the market. According to Williamson (1981), a transaction cost occurs when a good or a service is transferred across a technologically separable interface. Therefore, transaction costs arise every time a product or service is being transferred from one stage to another, where new sets of technological capabilities are needed to make the product or service.

The Transaction cost theory is also relevant to this study since price fluctuations have an effect on the cost of various transactions carried out by agribusiness firms. This implies that the financial performance of agribusiness firms will therefore be affected by the transaction cost incurred by the firms as the theory suggests.

2.3 Empirical Review

2.3.1 International Commodity Price Fluctuations and Financial Performance

The international commodity prices play a very significant role in determining the level or rate of price fluctuations in various countries around the globe. For instance the price of oil in the international market is perhaps the reason why serious price fluctuations are experienced in many countries around the globe (Frankel, 2013). He further argues that international price fluctuations are mostly affected by macro variables that are difficult to ignore in any given economy. When there are significant price fluctuations in international commodity prices, even the local prices will also experience notable fluctuations.

According to Wolf (2008) there has been serious fluctuation in international commodity prices due to economic growth changes that are being experienced in some countries such as China. The demand for cheaper products from countries that have experienced growth in production has had an impact on price fluctuations in a number of countries. The high growth experienced in countries such as China after the 2008 economic recession has greatly influenced international commodity price fluctuations in many countries. Kilian and Lee (2013) also argue that the increased growth has also seen the storable inventories of commodities in the global market increase and this has increased speculation which has had an impact on international commodity price fluctuations.

South Centre (2005) argues that the international commodity prices are notoriously volatile. This implies that the prices of various commodities are not stable in the international market and therefore experience frequent variations. Brown (2008) while agreeing with this position indicate that the price variations for international commodities have been more frequent in the last thirty years than they have been in the last seventy five years. This is an indication that international commodity price volatility has become more intense than it was before. He further argues that most of the developing countries around the globe largely depend on income from primary commodities for their foreign exchange and they suffer most due to the frequent variations in international commodity prices.

Unstable international commodity prices more often lead to macro-economic instability and also other related problems within an economy. For any economy that highly depends on primary commodities for income, it is highly likely to experience commodity price variations that will definitely affect the living standards of the people and growth rate as well. It estimated that more than 2.5 billion people directly or indirectly earn a living from the agricultural sector either as farmers or as agro processors. Whenever there are changes in the international commodity prices, macroeconomic stability becomes evident and this is likely to affect many sectors and firms in an economy (Common Fund for Commodities, 2005).

According to UNCTAD (2002), the volatility on international commodity prices has also been caused by increasing production in some countries around the globe. The increased production has also led to a decrease in the prices of some commodities and this puts commodity dependent countries or firms at a highly vulnerable situation. Firms that depend on income from

agricultural commodities are therefore likely to suffer frequent financial shocks as a result of the high price volatility in the international market due to high production.

2.3.2 Raw material price fluctuations and Financial Performance

Becker and Posner (2013) argue that prices of raw materials into any production process will greatly influence the level of price fluctuations in any sector of the economy. They further argue that the prices of various natural resources are usually very volatile and are likely to cause major fluctuations in prices of commodities that require such resources as inputs. The inputs or raw materials are scarce and world's population has always been on the increase. This situation has also contributed to the fluctuations in commodity prices in the recent past. Leybovich (2012) also concurs with the above position by arguing that the prices of raw materials are very volatile and this is the main concern that any manufacturer has to address. This implies that manufacturers have to find new ways of coping with fluctuations in the cost of raw materials for them to remain competitive.

Changes in the demand and supply of raw materials play an important role in determining the prices of commodities. The changes are the foundation of notable price fluctuations that take place in the market for various commodities. For instance an increase in the prices of raw materials will lead to a "cost push" type of inflation where the producers are forced to increase the prices of end products due to an increase in the prices of raw materials. Inflationary pressure is perhaps the reason why central banks of specific governments increase real interest rates in order to avoid further price deviations (Frankfurt and Main, 2009).

According to Thomas (2014) the past global recession has had a negative impact on most manufacturing firms. Some of the effects include the fluctuation of energy prices as well as the

prices or raw materials. For manufacturing firms to remain in business, they have to seek for alternative suppliers of raw materials thus shifting price fluctuations from one sector of an economy to another. He further argues that price fluctuations especially for raw materials have no room for errors in planning since firms have to walk a thin line between success and operating loss.

Hannu (2009) argues that products are usually made from different types of raw materials. These raw materials have different prices which are subject to change from time to time. The prices may either increase or decrease depending on the prevailing market conditions. The cost of raw materials is very important to management accounting since it is the basis upon which product costing is founded. Product costing enables a firm to understand the costs that will be incurred and also to identify areas where cost reduction can be made in order to make a product more affordable. However, as prices of raw materials increase, product costing becomes a difficult exercise. The prices of raw materials are therefore a major determinant of price changes.

Rizza (2010) asserts that the prices of raw materials in the international market have been fluctuating without any indication of stability both now and in the future. She further argues that this kind of uncertainty leaves firms with few alternatives since they heavily rely on the prices and may not make accurate decisions. Firms therefore fail to make long term decisions that are based on current pricing of raw materials because they cannot predict what will happen in the future. The fluctuations in the prices of raw materials affect not only the sourcing of the raw materials but also to a greater extent the profit margins of a firm.

2.3.3 Labour Cost Fluctuations and Financial Performance

Those in charge of formulating economic policies have done close monitoring of a reliable early indicator of inflation. As a result of this close attention changes in hourly compensation in form of wages and salaries of workers has received greater attention. On average, compensation represents about two-thirds of the total cost of production, and economic theory suggests that an increase in the rate of compensation growth will lead to accelerating price inflation unless the increase is offset by greater productivity growth or a squeeze on profits. For instance throughout the 1990s, both the employment cost index (ECI) which measures the rate of change in employers' hourly costs of providing wages, salaries, and benefits as well as the consumer price index (CPI) have risen at moderate rates relative to the previous decade (Braver, 2010).

A link between compensation and prices has the potential of causing positive or negative results. For instance, firms whose compensation costs are rising more rapidly than the volume of commodities they produce are highly likely to attempt to raise product prices in order to cover production costs. However, higher price inflation could itself trigger more rapid compensation growth through explicit or implicit contractual arrangements such as cost-of-living allowances or through the influence of inflation expectations on the wage setting process. An examination of the relationship between private sector compensation and prices on an aggregate level reveals that ECI and the core CPI frequently are usually in tandem, with only a slight tendency for labor cost developments to precede price movements (Peneva and Rudd, 2015).

However, Gordon (2013) asserts that the effect of labour cost on price fluctuations can only make sense if there is an economically significant level of influence of the labour costs on

the commodity price fluctuations. He further argues that commodity price fluctuations can only be evident if the labour costs are closely connected to price setting dynamics in any market. Tonu (2012) concludes that labour costs may or may not be a major determinant of price fluctuations depending on whether the duration involved is short or long term.

Labour costs have a significant impact on the fluctuations of prices of commodities or on wage related inflation in any economy. When the cost of engaging labour keeps on increasing from time to time, it forces the firms to pay more in terms of wages and salaries. This makes the cost of production to increase and producers are left with no alternative other than passing through the additional cost to the consumers in form of increased prices of commodities. Labour costs in most firms represent a significant portion of the firms' operational expenses and their continued fluctuations have a negative impact on the financial performance of the firm. In most cases the profitability of the firm declines due to reduced financial activity when the prices fluctuate to abnormal levels (Penneva and Rudd, 2015).

2.3.4 Government subsidy fluctuations

Governments shape the environment in which firms operate. They affect firms in many ways such as levying taxes, providing subsidies, enforcing laws, regulating competition and defining environmental policies. In short, governments set the rules that firms must comply with as they engage in business. At a given point in time, the government decides whether or not to change its policy. If a policy change occurs, the perception of the firms also changes: the posterior beliefs about the old policy's impact are replaced by the prior beliefs about the new policy's impact. When making its policy decision, the government is motivated by both economic and non-economic objectives: it maximizes the investors' welfare, as a social planner

would, but it also takes into account the political cost incurred by changing the policy. This cost is unknown to the investors, who therefore cannot fully anticipate whether the policy change will occur. The investors' uncertainty about the political cost is labeled political uncertainty (Bloom, 2009).

Barsky and Kilian (2004) reveal that the type of fiscal and monetary policy adopted by a government largely dictates the level of price fluctuations. They further argue that most countries around the globe have had a tendency of adopting an easy monetary policy that encourages low real interest rates. It is argued that the high prices of oil especially in the 1970S were due to an easy monetary policy. On the contrary a high real interest rate policy in the 1980s saw made the international commodity prices of minerals and agricultural commodities in some countries such as the United States of America.

It is optimal for the government to replace its policy by a new one if the old policy's impact on profitability is perceived as sufficiently unfavorable; i.e., if the posterior mean of the impact is below a given threshold. This requirement decreases with policy uncertainty as well as with the political cost that is associated with the policy. If the government derives an unexpectedly large political benefit from changing its policy, the policy will be replaced even if it worked well in the past. In expectation, however, the threshold is below the prior mean of the policy's impact. To push the posterior mean below the prior mean, the realized profitability among firms must be lower than expected. As a result, policy changes are expected to occur after periods of unexpectedly low profitability in an economy (Gomes, Kotlikoff, Viceira, 2008).

2.4 Literature Summary

This chapter has focused on a review of literature that is related to determinants of price fluctuations and their effect on the financial performance of agribusiness firms. Among the literature reviewed includes the theories that have relevance to this study. The study will be guided by three theories. The first theory is the working capital theory of the firm which captures the effects of financial constraints on the behavior of the firm that the standard theory of the firm would otherwise not capture (Chan, 2010). This theory is important in explaining the behavior of individual firms during price and demand shocks. The other theory is the value based theory of the firm by Drucker (1973). The relevance of the value based theory of the firm to this study relies on the fact that the theory focuses on inflows and outflows into the firm. The last theory is the transaction cost theory which also seeks to explain how the cost of various transactions can have an effect on price fluctuations.

The literature review also includes the determinants of price fluctuations. It is clear from the literature that international price fluctuations have been very volatile in the last decade (wolf, 2008) and they have a significant effect on price fluctuations as well as financial performance of firms. The costs of raw materials are also volatile and this makes it challenging for manufacturers to make decisions on new approaches of remaining competitive (Leybovich, 2012). The other determinant is labour cost which may or may not be a significant determinant depending on the time period involved. Government subsidy as a moderating variable where the amount of subsidy provided by the government is a major determinant of price fluctuations. Barsky and Kilian (2004).

2.5 Research Gap

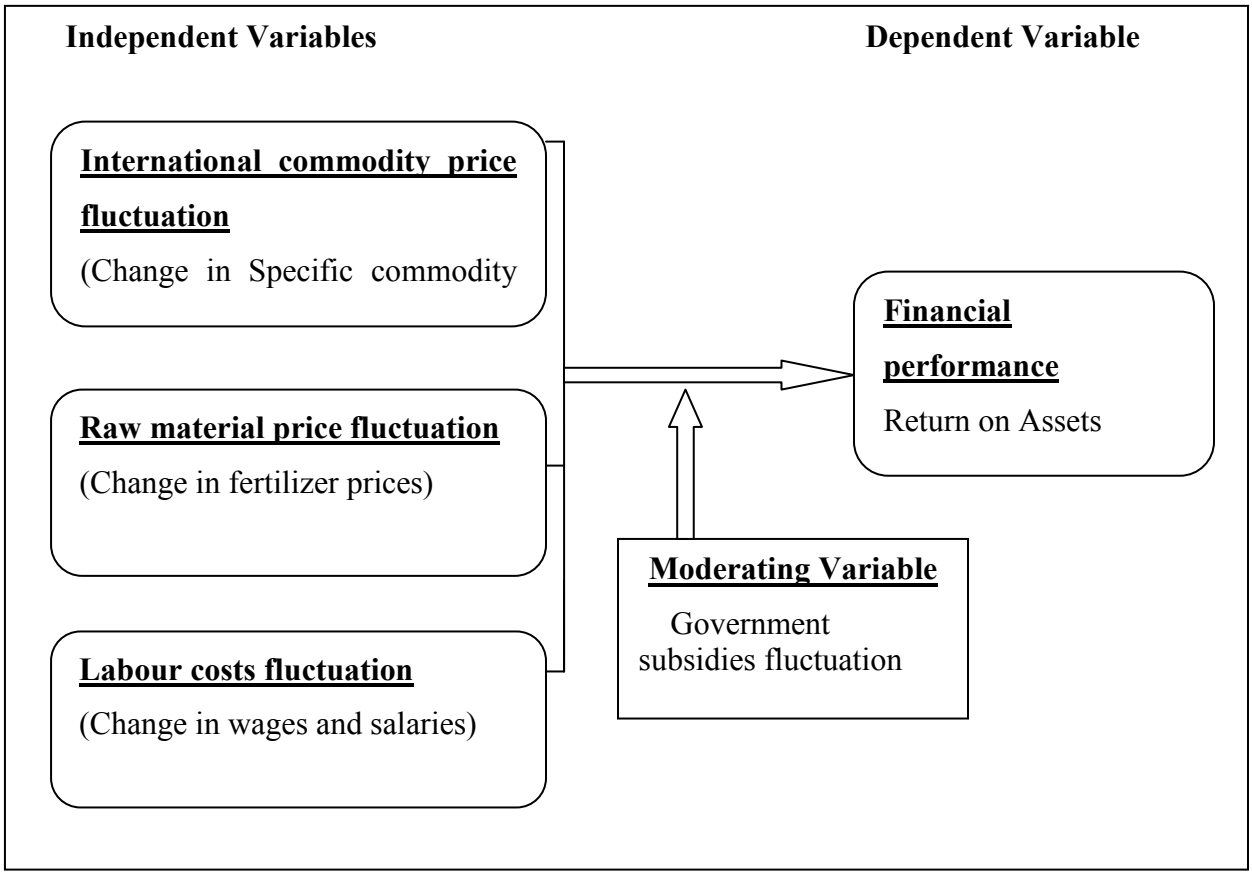
The literature reviewed concerning the various price fluctuations and their effect on the financial performance of firms reveals that there are issues that have not been clearly addressed and captured. For instance literature on the international commodity prices (Frankel, 2013; Wolf, 2008; South Centre, 2005 and Common Fund for Commodities, 2005) have all reviewed the international commodity prices as determinants of price fluctuations but none of the studies have attempted to investigate the effect of international commodity prices on the financial performance of firms. This is an indication that there is need to conduct a study to cover this gap. On cost of raw materials studies carried out (Frankfurt and Main, 2009; Hannu, 2009; and Hannu,2014) also focus on the volatility of the cost of raw materials but have not linked this clearly to their effect on the financial performance of a firm. It therefore clear from the literature review that most of the researchers have not focused on the relationship between the price fluctuations and their effect on the financial performance of firms. This therefore leaves a research gap that requires to be filled.

2.6 Conceptual Framework

Jabareen (2009) defines a conceptual framework as a network of concepts that are related and interlinked in one way or another to provide an elaborate understanding of some existing phenomena or phenomenon. A conceptual framework is therefore a product of the qualitative processes of theorizing the relationship that exists between some independent and dependent variables. Figure 2.1 below is a conceptual framework that seeks to explain the relationship on the effect of price fluctuation on the financial performance of agribusiness firms in Kenya.

Figure 2.1

Conceptual Framework



2.7 Operationalization of Variables

	Independent Variables		**Measurement**
1	International commodity price fluctuation	Specific commodity prices	Change in the international commodity prices between years
2	Raw material price fluctuation	Prices of fertilizers	Change in fertilizer prices between years
3	Labor Cost fluctuation	Wages and salaries	Change in salaries between years
	Moderating variable		
	Government Subsidy	subsidies	Change in value of subsidies offered by government from year to year
	Dependent variable		
	Financial performance	Return on Assets	Income after tax divided by Total assets

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section contains information on the methodology the researcher employed in examining the effect of price fluctuations on the financial performance of agribusiness firms in Kenya. It contains a discussion on the research design that was adopted; the population the researcher was targeting; the expected sample size and the procedures that were employed at arriving on the sample; the type of data used and the method used to collect the data as well as the data analysis techniques that were applied in analyzing the collected data.

3.2 Research Design

This research design was a causal research design. A causal research design is one that seeks to establish the cause effect relationships. It enables a researcher to be able to understand the reason why variables behave the way they do. It therefore provides the basis upon which a researcher can be able to evaluate the relationship between independent and dependent variables in any given situation (Bachman, 2007). This design was appropriate for this study since the researcher intended to investigate the effect of price fluctuations on the financial performance of agribusiness firms in Kenya for the last five years. It therefore assisted the researcher to understand the effect of price fluctuations on the financial performance of agribusiness firms in Kenya.

3.3 Target Population

According to Kitchenham & Pfleeger (2002), a target population "is the group or the individuals to whom the survey applies. In other words, you seek those groups or individuals who are in a position to answer the questions and to whom the results of the survey apply. Ideally, a target population should be represented as a finite list of all its members." In order to be able to achieve the objective of this study, the researcher took all the agribusiness firms in Kenya as the target population for this study. According to Kenya Agribusiness and Agroindustry Alliance (KAAA) (2016) there were a total of 272 agribusiness firms that are registered in Kenya (see appendix). The target population for the study was therefore 272 agribusiness firms.

3.4 Sample size and sampling Procedure

According to Mugenda and Mugenda (2003), for smaller populations 10% of the population is enough to serve as the sample. However this study employed stratified sampling in selecting the sample. The agribusiness firms were divided into three categories depending on what they do. The categories were: Agro input firms, Flower firms and seed companies as indicated in table 3.1.

Table 3.1
Sample selection

Type of Firm	Number of Firms	Percent Represented	Sample selected
Agro input Firms	100	36.8	10
Flower Firms	70	25.7	7
Seed Companies	102	37.5	10
Total	**272**	**100.0**	**27**

Researcher: 2016

The agribusiness firms that had published financial statements were selected to participate in the study. Where complete published financial statements were not available, the researcher utilized gatekeepers to access the relevant data. As at the time of the study a total of 27 firms had published accounts hence were the sample size for this study.

3.5 Data collection

The data required for this study was secondary in nature. The researcher collected secondary data from the 27 agribusiness firms mentioned above. The data collected related to four different variables. The first type of data included the international commodity prices for the last five years (from 2011-2015). This period from 2011 to 2015 was the latest and therefore provided the most current state or position. This data was collected from the published and credible sources such as the National Bureau of Statistics. The second category of data included data on prices of raw materials and this data related to raw materials especially inputs into the agribusiness sector such as fertilizers. The prices of these inputs were collected from the ministry of Agriculture. The third type of data involved the wages and salaries for the five years that form part of this survey. The hourly rate of wages and salaries were collected from the ministry of

labour. The fourth type of data included profitability of the agribusiness firms and this was collected from the published financial statements of the firms. The sources of data identified above were government sources and the specific organizations that were involved in the study.

3.6 Data Analysis

The secondary data collected was checked for completeness in order to ensure that relevant data for each of the years is available. The data was entered into SPSS for analysis.

The effect of international commodity price fluctuations on financial performance; the effect of raw materials price fluctuations and effect of labor costs fluctuations were determined through multiple linear regression. The effects of price fluctuations on the financial performance were determined by conducting a panel data analysis. The model that was used to carry out the data analysis is given below. Y is the dependant variable while X_1, X_2 and X_3 are the independent variables.

$$\mathbf{Y_{it}} = \boldsymbol{\beta_0} + \boldsymbol{\beta_1 X_{1,it}} + \boldsymbol{\beta_2 X_{2,it}} + \boldsymbol{\beta_3 X_{3,it}} + \boldsymbol{\alpha_i} + \boldsymbol{u_{it}}$$

Where:

Y_{it} represents the financial performance of the agribusiness firms which was measured by Return on Assets (ROA).

X_1 represents the international commodity prices (change in international prices of competing products and substitutes)

X_2 represents the prices of raw materials (changes in the prices fertilizer)

X_3 represents the labor costs (measured using changes in hourly compensation)

$\beta_{1\text{-}3}$ represents the relation between the dependent variable and the independent variable, moderator variables, and moderator by independent variable interaction, respectively.

α_i (i=1….n) represents the innate factors for the individual firms that will be conditioned out of the estimation process

U_{it} = the error term

A number of diagnostic tests such as the Chi-square test, Shapiro Wilk Test and tests of cross section dependency were carried out. The coefficient of determination was also used. The significance of the results in order to reject null hypothesis a critical vale of 0.05 was used. The significance value of less than 0.05 was considered a significant relationship and thus the null hypothesis was rejected if the value was within the critical value range.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSIONS

4.1 Introduction

The purpose of this study was to investigate the effect of price fluctuations on financial performance of agribusiness firms in Kenya. The study sought to achieve four specific objectives: to establish the effect of international commodity price fluctuations on the financial performance of agribusiness firms in Kenya, to determine the effect of raw materials price fluctuations on the financial performance of agribusiness firms in Kenya, to determine the effect of labour cost fluctuations on the financial performance of agribusiness firms in Kenya and to determine the moderating effect of subsidy fluctuations on the financial performance of agribusiness firms in Kenya. The analysis presented in this chapter involved the use of descriptive analysis where frequency, percentages, mean and standard deviation were considered. Diagnostic tests and test of assumptions were conducted to measure the suitability of the variables for subsequent regression analysis. Multivariate regression analysis was conducted to test the relationship between dependent and independent variables. The study findings are presented next.

4.2 Response Rate

The study sample was 27 agribusiness firms operating in Kenya. Secondary data was successfully collected from 18 agribusiness firms as illustrated in Table 4.1.

Table 4.1

Response Rate

	Frequency	**Percent**
Successful cases	18	66.7
Non successful cases	9	33.3
Total	**27**	**100.0**

The findings as illustrated in Table 4.1 reveal that the study managed to obtain a response rate of 66.7 percent. This percentage was considered adequate to enable the researcher generalize the findings of the study on the agribusiness sector in Kenya.

4.2: Diagnostic Tests

A number of diagnostic tests were carried out in order to ascertain whether the data collected was fit for linear regression. Among the tests conducted were the, Normality tests to establish whether the observed values follow a normal distribution. Chi-square tests were also conducted to find out whether the data had the expected frequencies and the correlation analysis to test for cross sectional dependence of the data. The results are presented in Tables 4.2 and 4.3 below.

Table 4.2

Test of Normality

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
International commodity price fluctuation	.298	90	.000	.567	90	.000
Raw material price fluctuation	.318	90	.000	.628	90	.000
Labour cost fluctuation	.343	90	.000	.573	90	.000
Government subsidy fluctuation	.392	90	.000	.492	90	.000
Return on Assets	.368	90	.000	.484	90	.000

a Lilliefors Significance Correction

The Shapiro Wilk test of normality was used to establish whether the observed values of the variables followed a normal distribution. To achieve this, the following study hypotheses were used: H_o The observed values do not follow a normal distribution

H_a The observed values follow a normal distribution

The results in Table 4.2 reveal that all the variables had a significance of 0.000. Since this value is less than 0.05 then the null hypothesis (the observed values do not follow a normal distribution) was rejected. This implies that the observed values follow a normal distribution and therefore allow for a linear regression analysis.

Table 4.3

Test for Cross Sectional Dependency

		Return on Assets	International commodity price fluctuation	raw materials price fluctuation	Labour cost fluctuation	Government policy
Return on Assets	Pearson Correlation	1				
	Sig. (1-tailed)	.				
	N	90				
International commodity price fluctuation	Pearson Correlation	.055	1			
	Sig. (1-tailed)	.302	.			
	N	90	90			
Raw material price fluctuation	Pearson Correlation	.068	.319(**)	1		
	Sig. (1-tailed)	.261	.001	.		
	N	90	90	90		
Labour cost fluctuation	Pearson Correlation	-.330(**)	-.106	.012	1	
	Sig. (1-tailed)	.001	.161	.454	.	
	N	90	90	90	90	
Government policy	Pearson Correlation	-.246(**)	-.002	-.027	.040	1
	Sig. (1-tailed)	.010	.494	.401	.354	.
	N	90	90	90	90	90

** Correlation is significant at the 0.01 level (1-tailed).

The test results reveal that there are no two variables that have very strong correlations. The correlations observed between the variables are weak positive and negative correlations an indication that the data collected qualifies for linear regression since there are no variables that will interfere with each other during regression.

Table 4.4

Chi-square Tests

	Return on Assets	International commodity price fluctuation	raw material price fluctuation	Labour cost fluctuation	Government policy
Chi-Square(a,b,c,d,e)	44.644	339.867	490.556	206.800	486.533
df	82	25	24	27	11
Asymp. Sig.	1.000	.000	.000	.000	.000

a 83 cells (100.0%) have expected frequencies less than 5. The minimum expected cell frequency is 1.1.
b 26 cells (100.0%) have expected frequencies less than 5. The minimum expected cell frequency is 3.5.
c 25 cells (100.0%) have expected frequencies less than 5. The minimum expected cell frequency is 3.6.
d 28 cells (100.0%) have expected frequencies less than 5. The minimum expected cell frequency is 3.2.
e 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 7.5.

The Chi-square tests for the independent variables reveal a significance of 0.000 which is less than 0.05. This implies that the model to be used for regression analysis is thus fit and this provided a leeway for linear regression analysis to be conducted to determine the effect of price fluctuations on the financial performance of the agribusiness firms in Kenya.

4.3 Descriptive Statistics of the variables

The descriptive statistics comprise of mean, standard deviation and the trends of the dependent and the independent variables. There were a total of 90 observations, starting the year 2011 to the year 2015. The findings, as shown below illustrate that Return on Assets had a mean of 0.8344 and standard deviation of 0.26636. This was an indication that there was a great deviation of the observed ROA values meaning that some firms had higher ROA whereas others had smaller ROA values. Fluctuations on international Commodity Price had a mean of 0.0854, and a standard deviation of 0.16078. This implied that international commodity price fluctuations varied greatly over the years involved in the study. Raw material price fluctuation had a mean of 0.0406 and a standard deviation of 0.13847. This means that there was great variation in raw

material price fluctuations between the years 2011 to 2015. Labour cost fluctuation had a mean of 0.1477 and a standard deviation of 0.27810. The results reveal that there was no great variation in the labour cost fluctuations between the year 2011 and 2015. The government subsidy fluctuations had a mean of 0.0259 and standard deviation of 0.05909. This implied that government subsidies did not have a great variation, hence no significant changes in government subsidies took place from the year 2011 to 2015.

Table 4.5

Descriptive Statistics of the variables

	N	Minimum	Maximum	Mean	Std. Deviation
Return on Assets	90	.00	1.00	.8344	.26636
International commodity price fluctuation	90	.00	.90	.0854	.16078
Raw material price fluctuation	90	-.43	.83	.0406	.13847
Labour cost fluctuation	90	-.16	.90	.1477	.27810
Government Subsidies fluctuation	90	.00	.40	.0259	.05909
Valid N (listwise)	90				

4.6 Effect of price fluctuations on financial performance

The general objective of the study was to establish the effect of price fluctuations on the financial performance of agribusiness firms in Kenya. The independent variables of the study were international commodity price fluctuations, raw material price fluctuations and labour cost fluctuations. The dependent variable of the study was Return on Assets of the agribusiness firms in Kenya. The results are presented in Table 4.6, 4.7 and 4.8 below.

Table 4.6

Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.751(a)	.564	.453	.25508

a Predictors: (Constant), International commodity price fluctuation, Labour cost fluctuation, Raw material price fluctuation

Table 4.7

Anova

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.719	3	.240	7.683	.000(a)
	Residual	5.595	86	.065		
	Total	6.314	89			

a Predictors: (Constant), International commodity price fluctuation, Labour cost fluctuation, Raw material price fluctuation

b Dependent Variable: Return on Assets

Table 4.8

Regression coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.876	.035		25.374	.000
	Labour cost fluctuation	-.317	.098	-.331	-3.236	.002
	Raw material price fluctuation	.441	.606	.373	2.683	.001
	International commodity price fluctuation	-.351	.589	-.347	-3.027	.001

a Dependent Variable: Return on Assets

The results illustrated in Table 4.6 indicate that price fluctuations explain 56.4 percent of the variance in the financial performance of the agribusiness firms in Kenya. This is an indication that price fluctuations have significant influence on the financial performance of the agribusiness firms in Kenya. The results on Table 4.7 reveal that the model was found to be significant at 0.000. Labour cost and raw material price fluctuations were also found to have a significant effect on the financial performance of the agribusiness firms as illustrated in Table 4.8. The results also reveal that ROA intercept was 0.876 implying the value of ROA when the value of the price fluctuations is equal to zero. The coefficient for labour cost fluctuation was -0.317 implying an inverse relationship between labour cost fluctuations and ROA. Raw material price fluctuation had a coefficient of 0.441 depicting a positive relationship with ROA. International commodity price fluctuation had a coefficient of -0.351 which reflects a negative relationship with ROA. This leads to the following general model that explains the relationship between price fluctuations and financial performance of agribusiness firms in Kenya:

$Y= 0.876-0.317X_1+0.441X_2-0.351X_3+ 0.035$

4.7 Moderating Effect of Subsidy fluctuations on Financial Performance

The study sought to establish the moderating effect of subsidies offered by the government on the financial performance of agribusiness firms in Kenya. To achieve this, a regression analysis was conducted with fluctuations in subsidies as the moderating variable. The results are illustrated in Tables 4.9, 4.10 and 4.11.

Table 4.9

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.409(a)	.167	.128	.24872	.167	4.268	4	85	.003

a Predictors: (Constant), Government subsidy fluctuation, International commodity price fluctuation, Labour cost fluctuation, Raw material price fluctuation

Table 4.10

Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.056	4	.264	4.268	.003(a)
	Residual	5.258	85	.062		
	Total	6.314	89			

a Predictors: (Constant), subsidy fluctuation, International commodity price fluctuation, Labour cost fluctuation, Raw material price fluctuation

b Dependent Variable: Return on Assets

Table 4.11

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.902	.035		25.451	.000
	International commodity price fluctuation	.000	.174	.000	.001	.999
	Raw material price fluctuation	.127	.201	.066	.631	.530
	Labour cost fluctuation	-.308	.096	-.321	-3.220	.002
	Subsidy fluctuation	-1.043	.447	-.231	-2.335	.022

a Dependent Variable: Return on Assets

The results on the moderating effect of subsidy fluctuation reveal that when subsidy fluctuations are introduced into the regression model as a moderating variable, the coefficient of determination R square is 16.7 percent as illustrated in Table 4.9. This implies that with government subsidies, price fluctuations explain a smaller variance in the financial performance

of the agribusiness firms in Kenya. This relationship was also significant at 0.003 as reflected in Table 4.10 above. The general equation therefore will be:

Y= 0.902+ .000X1+0.127X2-0.308X3-1.043+0.035

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Overview

This chapter presents the summary of key research findings, the conclusion drawn from the findings and recommendations proposed by the study. The conclusions drawn and recommendations proposed focused on addressing the objectives of the study. The responses were based on the objectives of the study. The study sought to establish the effect of price fluctuations on the financial performance of agribusiness firms in Kenya. The study also sought to determine the nature of association among international commodity price fluctuations, raw material price fluctuation, labor cost fluctuations, government subsidy fluctuations and the financial performance of the Agribusiness firms as measured by the return on assets.

5.2. Summary of the findings

The general objective of the study was to determine the effect of price fluctuations on the financial performance of agribusiness firms in Kenya. There were four variables associated with price fluctuations namely: international commodity price fluctuations, Raw material price fluctuation, labor cost fluctuation and subsidy fluctuations as a moderating variable. Working capital theory of the firm, Value based theory of the firm and transaction cost theory of the firm were reviewed. The study examined several empirical kinds of literature relevant to the study area. Based on theories, empirical work, and literature, the conceptual framework of the relationship between independent and dependent variables was drawn. The study was conducted among 18 companies and secondary data was collected using data collection schedule. The study

achieved a response rate of 66.7% which was above the postulated 50% minimum (Mugenda and Mugenda, 2003).

5.2.1 Effect of International Commodity Price fluctuation on financial performance

The first specific objective of the study was to establish the effect of international commodity fluctuation on the financial performance of the agribusiness firms in Kenya. The international commodity price fluctuations were obtained by calculating the difference in the observed prices from one year to another. Kenya is an economy that highly depends on primary products for its income hence a significant price fluctuation in international commodity prices causes the local prices to experience notable fluctuations. The research findings from multiple regression established that international commodity price fluctuation had a Beta value of -.347 and significance of 0.001 without the moderating effect of government subsidy fluctuation. This was an indication that without considering the subsidy fluctuation, international commodity price fluctuations has a significant effect on the financial performance of the agribusiness firms in Kenya. The results seem to agree with the findings of Wolf (2008) who also established that was serious fluctuation in international commodity prices due to economic growth changes that are being experienced in some countries such as China.

5.2.2 Raw Material Price Fluctuations and Financial Performance

The second objective of the study was to determine the effect of raw material price fluctuation on the financial performance of agribusiness firms in Kenya. The fluctuations in prices of raw materials were obtained by calculating the difference between prices of different years. The results from multiple regression confirm that the Beta value was 0.373 and the significance was 0.001. This significance value was within the critical level of 0.05 an indication

that price of raw material fluctuation had a significant effect on the financial performance of the agribusiness firms in Kenya. However, this result excludes the moderating effect of subsidy fluctuation on the financial performance of the agribusiness firms. The results further revealed that there was a moderate positive association between raw material price fluctuations and the financial performance of the agribusiness firms in Kenya. The findings agree with the position held by Leybovich (2012) who found out that the prices of raw materials are very volatile and this is the main concern that any manufacturer has to address.

5.2.3 Effect of Labour Cost Fluctuation on Financial performance

The study also sought to establish the effect of cost of labour fluctuation on the financial performance of the agribusiness firms in Kenya. The average cost of labour was taken and the difference between years was also calculated in order to get the fluctuation in cost of labour fluctuation. The research findings as observed from multiple regression analysis established that labour cost fluctuation had a Beta value of -0.331 and significance of 0.002. This was an indication that the labour cost fluctuation had a significant effect on the financial performance of the agribusiness firms in Kenya without taking into consideration the moderating effect of the subsidy fluctuation. It was further revealed that cost of labour fluctuation had a moderate negative association or relationship with the ROA. Other researchers such as Penneva and Rudd, (2015) have also previously held a similar view that labour costs have a significant impact on the fluctuations of prices of commodities or on wage related inflation in any economy.

5.2.4 Moderating effect of Subsidy fluctuation on Financial Performance

The fourth and last objective of this study was to determine the moderating effect of the subsidy fluctuation on the financial performance of the agribusiness firms in Kenya. The variable

Subsidies was the only variable regarding government policies on price fluctuations that were included in the model. The regression results show that subsidies significantly affected the return on assets and the other three variables. It was evident that when subsidy fluctuation is introduced as a moderating variable, the Beta values of the independent variables changed significantly. International commodity price fluctuation had its beta value change to 0.000 and significance to 0.999 an indication that it did not have a significant effect on financial performance when subsidy is introduced as a moderating variable. Raw material price fluctuations had its Beta value change to 0.066 and significance to 0.530. This implies that with subsidy fluctuation as a moderating variable, price of raw materials does not have a significant effect on the ROA of the agribusiness firms. The labour cost fluctuation had its Beta value change to -0.321 and significance to 0.002. This was an indication that even with the moderating effect of subsidy fluctuation, Labour cost fluctuation still remained with a significant relationship with ROA of the agribusiness firms.

5.3 Conclusion

When comparing the price fluctuation in the Agribusiness in Kenya, in the fields and companies studied in this research, we can substantively conclude that subsidy fluctuation is the greatest factor that causes fluctuation which in turn affects the financial performance of companies in the sector. The research also concludes that based on the data collected, the impact of international commodity prices and the prices of raw materials are not very significant in affecting price fluctuations. Labour cost fluctuation was found to be a significant factor affecting the financial performance of the agribusiness firms with or without the moderating effect of subsidy fluctuations. However, before the introduction of subsidy fluctuations into the regression

model, all the three variables, international commodity fluctuation, raw material price fluctuation and labour cost fluctuation were found to have a statistically significant relationship with ROA. It was further evident from the research findings that the moderating effect of subsidies indicates that it has a significant effect on financial performance.

5.4 Recommendations for Further Studies

The study recommends that subsidies granted and tariffs imposed by government in the Agribusiness in Kenya should be grounded on facts about their impacts on price fluctuations and eventually their consequences on the profitability of the market.

The research scope was narrow and generalized, and the research proposes that more studies be done on the subject and real-time data of prices collected possibly average weekly prices which could offer a better and clear understanding as to how specifically these factors influence price fluctuations in the Agribusiness in Kenya.

Future studies should employ a time series analysis in studying the impact of price fluctuations on financial performance. In doing so, they can establish the systematic patterns, seasonal changes and underlying trends about the factors that cause fluctuation of prices. If this is empirically established then it will be simple to predict with scientific precision the expected future price fluctuations and necessary efforts can be taken to mitigate the impacts.

5.5 Limitations of the study

The findings of this study are only directly applicable to agribusiness firms in Kenya. The results can therefore not be applicable to any other sector of the economy.

The findings are also specifically for the duration of the study and not any other duration outside the scope of the study.

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APPENDICES

Appendix One: Data Collection Worksheet

No.1	Financial performance		International commodity prices		Cost of Raw materials		Labour costs		Government policy	
	Net income	Total assets	C1	C2	RM1	RM2	Wages	Salaries	Tarrifs	Subsidies
2011										
2012										
2013										
2014										
2015										

Appendix Two: Time frame

Proposal Development	Data collection	Data Analysis	Final Dissertation
2 months			
	3 weeks		
		2 weeks	
			3 weeks
Total			4 months

Appendix Three: Budget

No.	Item Description	Cost
1	Cost of literature review	20,000
2	Printing and Binding	7,000
3	Data collection	5,000
4	Data Analysis	15,000
5	Final dissertation	3,000
Total		**50,000**

Appendix Four: Lists of Agribusiness Firms

	Crucible Investments Company TIMAC AGRO KENYA LTD Agripro Leasing Kenya (2) Kilimo Kisasa AgroConsultancy PAN AFRICA CHEMICALS LTD BSC Agro Co., Ltd Laser Engineering Supplies Ltd Farm To Fork Ltd greentech grafted seedlings experts Centre Agrotec Enterprises Ltd organic Kenya The Egg Basket Farm STATELY VENTURES CANAAN MULTIPURPOSE COOPERATIVE SOCIETY LIMITED LTD. Timsales Ltd Elgon Kenya Limited Farmchem Ltd Graduate Farmer EDEN GARDENING AND LANDSCAPING LTD. Kagumo Villagers Indigeneous Tree Nursery Self-Help Group KRYSTALLINE SALT Bilashaka Flowers Ltd Global Oil Petroleum Limited Lachlan Kenya Ltd Murphy Chemicals (E A) Ltd AGROCHOICE AGRICULTURAL DEVELOPMENT AGRICULTURE DEVELOPMENT CORP. BAYER EAST AFRICA CADBURY KENYA DIPCHEM EAST AFRICAN SEED NORSK HYDRO OMNIA FERTILIZERS SALT MANUFACTURERS KENYA Syngenta East Africa Ltd Suera Flowers Ltd BARAKA AGROVET Batian Flowers Bayer East Africa Ltd Agrochemicals Association of Kenya

	Alora Flowers Ltd
	Chemtura (PTY) Ltd
	Karen Roses Ltd
	Petmary Ltd
	Benken Agencies (K) Ltd
	De Ruiter East Africa Ltd
	Safari Seeds Limited
	Simlaw Seeds Co. Ltd
	Sustainet (E. A.)
	Agrichem And Tools Ltd
	AGRICULTURAL OF KENYA
	Amiran (K) Ltd
	Baitany Agro-Vet
	Big Anjy Agrovet
	Black Petals Ltd
	CHOCOLATE PARADISE
	EAST AFRICAN SEED CO LTD
	EVEREADY AGRICULTURE SERVICES LTD
	Farmers Partner Ltd
	Farmers World Ltd
	Fedo Agencies
	Florema Kenya Ltd
	GREENLAND AGRICULTURAL COMPANY
	G T Z FARM MANAGEMENT PROJECT
	Hamwe Ltd
	HELENA SEED CO LTD
	Henchem Ltd
	HORTITEC (K) LTD
	Hygrotech (E.A) Ltd
	Juanco Group of Companies
	Kenya Flower Council
	KENYA SEED COMPANY
	Kiambu Fertilizers Co Ltd
	Kudenga Ltd
	KURAWA INDUSTRIES
	Lake Flowers Ltd
	LOWLANDS AGRICULTURAL & TECHNICAL SERVICES LTD
	Magana Flowers Kenya Ltd
	MAGADI SALT PACKING INDUSTRIES
	Maraba Investments Ltd
	Mbaki Agric Inputs Distributors Ltd
	Meya Agricultural Traders
	MOMSANTO IMAGINE
	Mosi Ltd
	OIL CROP DEVELOPMENT LTD

	Oserian Development Co Ltd Oserian Development Co Ltd PANNAR SEED (K) LTD PRIME SALT WORKS Rockem Ltd Rosepath Petals Ltd Safina (E A) Ltd SEED TRADE ASSOCIATION OF KENYA (STAK) SEMINIS EAST AFRICA Stokman Rozen Kenya Ltd Tekelezi General TRUFOODS VICTORIA SALT WORKS WESTERN SEED & GRAIN CO LTD WESTERN SEED CO LTD Wilmar Agro Ltd Zwager Hans & June Business Electricals Services Ltd Buuri Botanicals & Agricultural Enterprises Dupont de Nemours Farmline Flowers Ltd Kenya Agricultural Productivity & Agribusiness Project Lakefields Agencies Ltd Simbi Roses Riverside Drv, 769-01000 Thika, Nairobi Phone Acupharm Supplies Kenya Ginger Hse, 3rd Flr Lagos Rd, Nairobi Phone Agri Centre Ltd Factory Rd, Nakuru Phone Agro-Inputs Ltd Kenbanco Hse, 2nd Flr, Nairobi Phone Agriscope (Africa) Ltd Kijabe St, Nairobi Phone Agro Chemicals Africa Ltd Postal Address : 13550-00100 Nairobi GPO, Nairobi Phone Agro Chemicals Africa Ltd Postal Address : 13550-00800 Westlands, Nairobi Phone Agricultural Chemical Dealers

	Postal Address : 462-20100 Nakuru, Nakuru Phone Agrevo East Africa Ltd The Chancery Bldg, 2nd Flr Valley Rd, Nairobi Phone Agrichem And Tools Ltd Winsford Unit No 5 Baba Dogo Rd, Nairobi Phone Anagro (K) Ltd Murang'a Rd, Nairobi Phone Aniplant Services Ltd Old East Bldg, 1st Flr Tom Mboya St, Nairobi Phone ANOVA FOOD B V EAST AFRICA Mombasa Rd, MPPS Bldg, P.O. Box: 25083, 00603 Lavington, Nairobi Phone Aventis CropScience Kenya Ltd -Head office Plaza Trading Centre Ngariama Rd, Nairobi Phone Bart Engineering Services Opp Popular Industries, Gr Flr, Muindi Mbingu St, P.O. Box: 3639-01002 Madaraka, Thika Phone Bekya Floriculture Ltd Thigiri Rd, 76207-00508 Yaya Towers, Nairobi Phone Berma Farmers Agencies Murang'a Co-Op Farmers Bldg, 2nd Flr Commercial St, Thika Phone Brolands Co Park Rd, Nairobi Phone Busia Agrovet Busia/Kisumu Rd, Busia Phone Canopy Medchem Pharmacy Ltd Tom Mboya St, Meru Phone Chebeon Stores Nandi Rd, Eldoret Phone City Farming Ltd Nanyuki Rd, Nairobi Phone

	COFFEE SYSTEMS CONSULT Tom Mboya St, Gill Hse, 4th, P.O. Box: 6623, 00300 Ronald Ngala St, Nairobi Phone East Africa Seeds Eac Bldg, Gr Flr, Kijabe St, P.O. Box: 60630-00200 City Square, Nairobi Phone Energy Africa Ltd Diani Beach Rd, Kwale, P.O. Box: 5577-80401 Diani Beach Phone EUREKA SEED CO LTD 30, 20113 Bahati, Molo Phone Everris (K) Ltd Dul Dul Godowns Phse 2, 2nd Flr, Mombasa Rd, P.O. Box: 29183-00100 Nairobi GPO, Nairobi Phone Ewasongiro Aggro Vet Supplies Orkurto Bldg, Ole Ntutu Rd, P.O. Box: 432-20500 Narok, Narok Phone Ewasongiro Aggro Vet Supplies Orkurto Bldg, Ole Ntutu Rd, P.O. Box: 432-20500 Narok, Narok Phone Farmers Partner Ltd Next To Post Office Ind Area Timber Mill Rd Nakuru West, Nakuru Phone Farmers Centre Kotnis Bldg Njuri Ncheke St, Meru Phone Farmers Guide Landhies Rd, Nairobi Phone Floriculture Muki Auto Services Railway Shed, 12 Workshop Rd, 28999-00200 City Square, Nairobi Phone FRESHCO INTERNATIONAL LTD Marcus Gavey Rd, P.O. Box: 65082, 00100 Nairobi GPO, Nairobi Phone FUGA Enterprises Agrovet uthiru Shops, Nairobi Phone Giathi Vet Enterprises Busia Kisumu Rd, Busia Phone GYMSUM WORK LTD Kijabe St, Kijabe Hse, P.O. Box: 53836, 00200 City Square, Nairobi

	Phone Hamer (K) Ltd Moi South Lake Rd, 1896-20117 , Naivasha Phone Hatabor Rainbow Blooms Ltd Limuru/Nazareth Rd, Karuri, 455-00100 Nairobi GPO Phone Huplan (K) Ltd Mago Hse, Gr Flr Gaberone Rd, Nairobi Phone Interchem Co Ltd Chania Bldg Kamae Ln Off Luthuli Rd, Nairobi Phone Internet Agricultural Services Wina Plaza, Gr Flr Uhuru St, Thika Phone INTRA FARM SERVICES (K) LTD Mogadishu Rd Off Lunga Lunga Rd, P.O. Box: 30393, 00100 Nairobi GPO, Nairobi Phone Iten Agro-Vet Iten/Tambach Rd, Iten Phone Jesmo Agrovet Postal Address : 476-01100 Kajiado, Kajiado Phone Juanco Group of Companies Juanco Centre Ngong Rd, Nairobi Phone Kamro Agrovet Ltd Gill Hse, Gr Flr Tom Mboya St, Nairobi Phone Kamro Agrovet Ltd Postal Address : 6892-00300 Ronald Ngala, Kitale Phone Kamro Agrovet Ltd Postal Address : 3621-40100 Kisumu, Kisumu Phone Kamwandu Farm Supplies Ltd Sokoni Rd, Naivasha Phone Kawangware 46 Agrovet Gitanga Rd, Nairobi Phone Kendia Ltd Thika Arc, Gr Flr Kenyatta Hwy, Thika

	Phone Kilimo Ltd Off Mama Ngina Drv Nkrumah Rd, Thika Phone Kilimo Ltd Postal Address : 30003-00100 Nairobi GPO, Nairobi Phone Kingsholme Ltd Moi South Lake Rd, 188-20117 , Naivasha Phone Kiruki P S Moi Ave, Meru Phone Lama Farmers Stores Kariuki Chotara Rd, Naivasha Phone Lamu Fashions Opposite Akiba Bank Off Digo Rd, Mombasa Phone Lamina produce Ndemi Rd, 21737-00505 Ngong Rd, Nairobi Phone Larichem (E A) Ltd Off Globe Cinema Roundabout Kijabe St, Nairobi Phone Larichem E A Ltd Sokoni Rd, Naivasha Phone Lathyflora Ltd St Julians Ln, Karuri, 63276-00619 Muthaiga Phone Limatec (K) Ltd New Jogoo Bldg Stadium Rd, Thika Phone Lunar Agrovet Main St, Bungoma Phone Makamithi Enterprises Ltd Mbaine Hse Mbolu Malu Rd, Machakos Phone Menengai Agrovet Enterprises Gusii Rd, Nakuru Phone Muguri Agri Supplies Kapsabet Main St, Kapsabet

	Phone Mukpar Ltd Uhuru St, Thika Phone Mukamo Chemical Supply Muriithi Bldg Market St, Kerugoya Phone MUMIAS AGROCARE AGENCIES Nabongo St, Olalies Bldg, Gr, P.O. Box: 745, 50102, Mumias Phone Nandi Agricultural Stores Kapsabet Town, Kapsabet Phone Nikifarm Care E A Ltd Postal Address : 63588-00619 Muthaiga, Nairobi Phone Nikita Flowers Ltd Rhapta Rd, 40445-00100 GPO, Nairobi Phone Nova Chemicals (NCL) Ltd Namanga Rd, Athi River Phone Nova Industries Ltd Lengetia Hse Likoni Rd, Nairobi Phone NYERI SEED COLLECTION CENTRE 12069, 10100, Nyeri Phone Nyutu Agrovet Ltd Nacico Plaza, Gr Flr Landhies Rd, Nairobi Phone Organix Ltd 1249 Mushembi Rd, Nairobi Phone Orion East Africa Ltd -Nairobi Orion Drv/Outering Rd, Nairobi Phone P & A Agro Inputs Agencies K N A, Gr Flr, Kisumu Phone Palm Beach Investment Ltd 67-80500 , Lamu Phone PANNAR SEED (K) LTD Arap Kitongo Rd off Uganda Rd, Pannar Hse, P.O. Box: 412, 30100, Eldoret

	Phone Pan African Agri Business & Agro-industry Consortium Finance Hse, 5th Flr, Loita St, P.O. Box: 2542-00200 City Square, Nairobi Phone Penta Flowers Ltd Mukinye Rd, 40452-00100 Nairobi GPO, Thika Phone Planvet Agro Chemicals Near Crossland Travellers Cross Rd, Nairobi Phone Pro-Phyto NSSF Bldg Block 'A' Eastern Wing, 11th Flr, Nairobi Phone Red Lands Roses Ltd 10-00232 Ruiru, Thika Phone REDSHANK LTD Gogor Farm Rongai, P.O. Box: 15342, 20113 Bahati Phone Rielco Stores Ltd Kenyatta Rd, Kericho Phone RIFT VALLEY SEED (K) LTD Wabera St, Jubilee Hse, 1st, P.O. Box: 44924, 00100 Nairobi GPO, Nairobi Phone Ruiru Farmer Point Postal Address : 153-01000 Thika, Thika Phone RUTECIKA AGRICULTURAL ADVISORY & MANAGEMENT SERVICES Meru/Nanyuki Rd, P.O. Box: 746, 60209 Gaitu, Meru Phone Schreurs East Africa Ltd 1948-20117 , Naivasha Phone Scrab Solution Ltd Lower Kabete Ln, 23202-00604 Lower Kabete, Nairobi Phone SEED & GENERAL LTD 58432, 00204 Athi River Phone Shamba Connections Ltd Nanyuki/Meru Rd, Nanyuki Phone Shabab Agro Supply Postal Address : 14484-20100 Nakuru, Nakuru

	Phone Shamba Chemical Supplies Ghana St, Meru Phone Shantara Flowers Ltd Postal Address : 71365-00100 Nairobi GPO, Nairobi Phone Simbi Flowers Riverside Drv, 769-01000 Thika, Nairobi Phone SINGER AGRICONSULT LTD 63127, 00619 Muthaiga, Nairobi Phone Sirgoek Flower Farm 5118-30100 , Eldoret Phone Sisbro Co Kariobangi Light Industries Komarock Rd, Nairobi Phone Solo Plant (K) Ltd Naivasha Rd, Nairobi Phone Soy-Kabatik Agri Centre Ltd Nandi Arcade Oloo St South, Eldoret Phone Stock Trends Chemicals (Agro Vet) Syokimau Rd, Machakos Phone Suera Flowers Ltd Gitanga Cls off Gitanga Rd, 62599-00200 City Square, Nairobi Phone Sunbuds Kenya Ltd Moi South Lake Rd, 1750-20117 NAIVASHA, Naivasha Phone Sunrise Growers Ltd 5018-00200 City Square, Nairobi Phone Taita Taveta Farmers Centre Postal Address : 135-80300 Voi, Voi Phone Tambuzi Ltd Tambuzi Farm Mutamaiyu Farm, Burguret, Naromoru, 1148-10400 , Nanyuki Phone Tanu Roses (K) Ltd Off Limuru Rd, Karuri, 63543-00100 Nairobi GPO

	Phone THE SCOTTS C KENYA P.O.BOX 717038, Nairobi Phone Thika Nurseries Gatanga Rd, 30103-00100 Nairobi GPO, Thika Phone Trans - Pacific Investments Co Mabuli Hse, 1st Flr Muhoho Ave, Nairobi Phone Umoja Ben Agro Services Postal Address : 2264-60100 Embu, Embu Phone Unga Farm Care (E A) Ltd -Nairobi Dakar Rd, Nairobi Phone Vefa Agro Supplies Duruma Rd, Nairobi Phone Vershi Devshi (K) Ltd Kwame Nkrumah/Commercial St, Thika Phone Vivienes Super Florists Cianda Hse, Gr Flr Koinange St, 22570-00400 Tom Mboya St, Nairobi Phone Wilchemsons Co Ltd Uganda Rd, Eldoret Phone Zena Roses Ltd Paklands Rd, 53164-00200 City Square, Nairobi Phone Airspray (E A) Ltd South Lake Rd, Naivasha Aniplant Services Ltd Caxton Hse, 3rd Flr, Rm 3B Koinange St, Nairobi Assorted Merchandise Stores Tom Mboya St, Meru Bawan Roses Ltd White Sisters Rd, 235-01000 , Thika Bondet Limited Kangaita Farm, 1076-10400 , Nanyuki

	Farmtrack Consulting Busines Centre Bldg, Jogoo Rd, P.O. Box: 16372-00100 Nairobi GPO, Nairobi Freshco Kenya Ltd behind Muthaiga Police Station, Wambui Rd, off Thika RdNairobi, P.O. Box: 27659-00506 Nyayo Stadium Hortichem Supplies Ltd Karatina Kenfap Services Ltd Family Health Plaza, opp Tuskys T-Mall, Lang'ata Rd, P.O. Box: 43148-00100 Nairobi GPO, Nairobi Sarana Seeds Ltd Vision Plaza, Gr Flr, Mombasa Rd, Nairobi South, P.O. Box: 12741-00100 Nairobi GPO Topscore Chemicals (K) Ltd Libra Hse Mombasa Rd, Nairobi Voi International Agencies Ltd Old Post Office Rd, Voi Wam Flowers Karuri, 6074-00300 Ronald Ngala Zena Roses Ltd Gatanga Rd, 2759-01000 , Thika