Implication of Efficient Market Hypothesis and Arbitrage Pricing Theory in Chepkube Market at the Kenya-Uganda Border: A Critique of Literature Review

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Abstract

Essentially, a market is the only point of convergence where actual exchanges between knowledgeable willing buyers on one hand and innovative creators of goods and services happen, and the end product is wealth, money and profit. The Efficient Market Hypothesis (EMH) is founded on the premise that it is impossible to "beat the market" because market efficiency causes existing asset prices to always incorporate and reflect all relevant information. In an efficient capital market, the security prices reflect all the available information, and excess return is not possible by trading on the basis of new information. Markets are broadly broken into two components: markets for goods and commodities as well as the money markets. The Arbitrage Pricing Theory is an asset pricing model that explains the cross-sectional variation in asset returns or prices. This study analyses the applicability of both EMH and APT theories in Chepkube; largely a goods and commodities market located at the Kenya-Uganda border in East Africa. Desk research methodology was used for this study. The study interrogates the existing literature in eliciting the required information necessary for the research findings. The research findings suggest that only the weak and semi strong form of EMH exists at Chepkube while the APT in its simplest form dominates the market trends as brokers seize, create, and control pertinent information. The results provide customers, entrepreneurs, SMEs, researchers, financiers, government regulators and other interest groups with insights on efficient markets; as well as opportunities for further empirical research.

Keywords: Chepkube Market, Efficient Market Hypothesis, Arbitrage Pricing Theory, Brokers

Introduction

A market is the only place of conquest into prosperity and livelihoods for all people. Tyrpak (2015) has argued that in any business, gaining customers and clients is the important part of growth. Markets are broadly broken into two components. The most intelligent professionals and corporates; the most powerful governments and armies; the most salient technologies and ideas invented and those yet to be invented; are all a creation of the market. The best

definition of money, the ultimate measure of value and wealth is: it's a product of the market, when the customer has to pay. Markets drive a nation's economic agenda and communities' prosperity. Dsouza and Mallikarjunappa (2015) suggest that markets play a very vital role in developing the economic growth of a country. This is demonstrated in the Kenya National Bureau of Statistics (KNBS) third quarter report for 2015 which reported that the 5.8% economic growth achieved was mostly attributed to construction, agriculture, financial services, wholesale and retail trade (KNBS, 2015). The latter factor comprises the markets. Institutionalists throughout the social sciences agree that markets are systems of economic exchange and spaces for social interaction as well as complex bundles of institutions (McMillan, 2002; North, 1990).

Some large rural and urban markets in Kenya have had a long history of trading and are reputable for their sizes and variety of traded goods. Karatina town market in Nyeri County, for example, compares well in terms of the number of traders, the range and value of goods and services exchanged and rural-urban location, with those large markets in Lagos, Nigeria. Gikomba market in Nairobi is a legendary second hand clothes market which has mutated into an open air "supermarket" mainly for the middle and lower social class of Metropolitan Nairobi. Others include Kongowea market in Mombasa, Kondele market in Kisumu, SokoMjinga market in Lari, Kiambu. Marigiti market in Nairobi majors in vegetables and fruits. In these markets, prices are negotiated, and perceived to be low. Several studies have examined how competing markets' frequency, depth, and pricing strategies influence consumers' average or basket price perceptions when consumers have full price information, that is, under-price certainty (Alba, Carl, Terence & Joel, 1999; Lalwani & Monroe, 2005). In the typical paradigm, participants make decisions over multiple trials that simulate daily/weekly purchases of a product offered by two competing retailers or brands. On each trial they view each retailer's or brand's daily/weekly price for a given product and then choose one based on these prices. Notably, the choice task is not designed to examine the impact of pricing strategy on choice, since all prices are observed and participants presumably always choose the cheapest price. Rather, the purpose of the choice task is to allow participants to sample from both pricing distributions (Danziger, Hadar, and Morwitz, 2014). In the Kenyan context, where most shoppers frequenting these markets are overly price sensitive owing to low incomes and high inflationary pressures, price observation trends are rigorous, making these markets almost efficient, in tandem with the Efficient Market Hypothesis (EMH).

Cartels and middlemen acting as brokers, however, hamper the process. They tend to have information about prices of commodities at their sources; which they share in a way that is advantageous to them. They even create additional information about shortages, availability, or regulatory constraints that favor them. This allows them to broker the goods and charge exorbitant prices. They may also visit the markets early, buy most of the goods from original suppliers, and dictate the prices to the final consumers or hawking retailers.

It is against this background about operations of major local markets in Kenya, that this desk research takes a deeper look at the application of the Efficient Market Hypothesis and Arbitrage Pricing Theory in Chepkube market located at the Kenya-Uganda border in East Africa.

Chepkube Market Profile

In the late 1970s, one market at the border of Kenya and Uganda known as Chepkube became a well-known centre of smuggling coffee from Uganda to Kenya in the wake of the global boom in coffee trade. This market is in Bungoma County and is located to the north of Malaba and Busia towns, approximately 44 and 81 kilometres respectively from each of the towns. Other commodities were traded too, and with the end of coffee boom, trading in other commodities and services continued. However, various reports indicate that smuggling of commodities is still a common feature in the market though the magnitude differs. Today, Chepkube market remains one of the key local markets with features that one can observe in such other prominent markets in Kenya, such as Marigiti, Gikomba, Karatina, SokoMjinga, or Kongowea, among others.

On a typical market day, Chepkube market hosts some 3,000 (+ or − 1,000) traders from Kenya and Uganda. Located at the two countries' common border and on the Kenyan side, there is substantial cross-border and local trade. The goods and services traded include new and used clothes, vegetables, bananas, fruits, currency, coffee, immigration passes and other documentation, minerals, as well as assistance to individuals to cross over to Uganda or to Kenya; or even to let goods pass to any of the two countries. Trading is carried out in the open air market, under or without sheds or any form of shelter. The participants in the markets include producers of various food items, vendors, traders, middlemen or brokers, money changers, transporters (including owners of trucks, pick-ups, wheelbarrows, and individual manual carriers), and Kenyan Government Agents who collect fees and rents.

The County Government within its constitutional mandate has a responsibility to establish, manage and maintain markets (Laws of Kenya, 2012). It adds that in pursuit of this mandate the County Administration imposes and collects levies from users of established formal and informal markets. The levies vary based on the commodity being traded, premises occupied and the size of the business. In Chepkube, small vegetable traders in the open air pay daily charges of between Kenya Shillings (KES) 10 and KES 30, while a wholesale banana trader pays between KES 300 to KES 1,000 per truck of consignment. Those trading from established shades pay KES 100 per trading day. Official charges are receipted on payment. If some traders wish to pay less, they negotiate with the county revenue collector but do not get any receipt for the payment. They sometimes negotiate the rates through brokers who obtain the best price possible from county revenue collectors, though such transactions are illegal and embolden corruption. Unlike the brokers in the Capital Market like the Nairobi Stock Exchange (NSE), those at Chepkube market are not regulated by any authority and thus the leeway to act as a cartel. Whilst traders pay "market user charges", they are required to observe occupational, safety and health standards in the market. Those who occupy market premises on a continuous basis need to pay monthly rents to the County Government, and obtain trading licenses. Traders or intermediaries buy various commodities from markets or farms inside Uganda or Kenya and bring them to Chepkube in trucks, donkeys or other transportation means. They sell to retailers and wholesalers in the open market, who in turn sell to   other consumers. Suppliers to other markets buy from these retailers and wholesalers in Chepkube and take to other markets outside Chepkube. These intermediary traders sell to retailers in other markets near or far away from Chepkube such as those in Nairobi. The selling prices to the intermediaries are, say, Kenya shillings (KES) X, whilst the one to the retailers is(X+0.30X). The retailer then sells to other consumers at 10% or so mark-up. The

mark-up for each product varies from one buyer to the next and tends to be smaller with the subsequent buyer, but on an incremental basis, making the prices higher, in tandem with the simple arbitrage pricing hypothesis. Though retail traders sell at a profit they bear the risk of loss arising from spoilage.

Each level of trader buys some other commodity which they sell at Chepkube or alternative markets at a profit. For example, traders from Uganda who sell bananas at Chepkube buy animal feeds and other commodities not available at the other side, and transport using the same "bananas vehicle" and sell at some Ugandan markets at a profit. The Kenyan suppliers do the same.

One of the commodities traded is currency. Comparatively, according to traders interviewed and who bring commodities to Nairobi, the Ugandan Shilling is weaker than the Kenyan Shilling. For a Ugandan trader, having Kenyan shillings is like any East African holding a United States Dollar. Ugandans would therefore desire to be paid in Kenyan shillings for commodities traded. They would also exchange Uganda Shillings for Kenyan Shilling at rates ranging from 30 to 35 units to one Kenyan shilling unit. Because of the high demand for Kenyan shillings, the Kenyan traders pay for their goods and services in Kenyan shillings and have bargain rates when buying Uganda Shillings whenever they need them.

Large trucks carrying commodities such as "Kampala bananas" have to pass through Customs at the border (Ochunge, 2017). According to the traders from Chepkube interviewed in Nairobi, crossing the border with any type of commodity attracts a miscellany of fees and taxes, both legal and illegal, locally called amongst other names, ("pass tax", "vehicle tax", "protection fees," or "customs avoidance fees.") There are brokers on both sides of the border who facilitate passage by paying a lower "consolidated single tax". The traders do not get to know the recipients of the taxes/fees/charges but any documents they need get appropriate stamps required to cross the border as long as they pay the brokers. The traders may not know the proportion of the consolidated single tax that goes to the brokers' commission. There are also other brokers who negotiate the fee paid to the county market administrators.

Middlemen or brokers on both sides of the border tend to have information about prices of commodities at their sources. They share this information in a way that is advantageous to them. They even create additional information about shortages, availability, or regulatory constraints that favor them, allowing them to broker the goods and charge exorbitant prices.

Chepkube market has transformed the lives of the local people. The actual traders have had incomes which have helped them to buy basic goods and services that maintain their livelihoods. A key significance of Chepkube market has been its role in providing food security to the local community and beyond. During times of food shortages occasioned by droughts, the market has facilitated the flow of food items to and from Uganda. It has therefore been operating in parallel or complementary to food distribution chains facilitated by the formal government or other market systems in Kenya and Uganda. Bigger traders have directly employed the services of local labourers, transporters, and producers some of who employ other people. Thus, the market has been instrumental in creating employment for thousands of people in the whole commodities' supply chain. Chepkube market is one of the main local revenue earners for the County Government. Unlike other markets mentioned earlier, Chepkube is located outside of any main towns, but is playing a significant role contributing to the economy and livelihoods of local people on a scale and in a manner nearly

consistent with contemporary theory of market behaviour. It is for these reasons that the study in this paper focused on Chepkube market.

Theoretical Review
Fama (1970) introduced the Efficient Market Hypothesis (EMH) theory, building on Bachelier (1900) view that assets prices follow a Brownian motion; which was developed 50 years later by Kendal (1953), Samuelson (1965) and Mandelbrot (1966). Fama (1970) defines three different levels of efficiency according to the type of information reflected in prices and/or returns to include: weak-form, semi-strong-form, and strong form. The weak form efficiency examines the wide range of trading rules available to common traders, like would be found in the Chepkube market.

The Arbitrage Pricing Theory (APT) originally formulated by Ross (1976), and extended by Huberman (1982) and Connor (1984), is an asset pricing model that explains the cross-sectional variation in simultaneous asset returns or prices; a model that was applied at the Chepkube market.

Findings and Discussion
Application of Efficient Market Hypothesis at Chepkube Market
It is notable that urban and rural consumers tend to have similar purchasing considerations. Much research has demonstrated the importance of price in purchase decisions (Monroe, 2003). The Efficient Market Hypothesis (EMH) is founded on the premise that it is impossible to "beat the market" because market efficiency causes existing asset prices to always incorporate and reflect all relevant information. In an efficient capital market, the security prices reflect all the available information, and excess return is not possible by trading on the basis of new information. Traders at the market ensure that the prices of their goods are competitive so that they may get maximum returns. The price is based on information obtained from other sellers in the market and therefore, a trader may not over price their goods in order to make excessive returns.

Fama (1970) categorized EMH as a weak form of efficiency, semi-strong efficiency and strong form of efficiency. The weak form states that the price of an asset or commodity at any point in time should reflect all of the relevant information about the asset's future value that can be gleaned from past market information on price and volume. In the weak form of efficiency, the future prices of security cannot be predictable based on historical information. Chepkube is a weak form of efficient market because prices fluctuate based on historical trends. Goods come from different places and factors such as change of weather, farmers' production output levels and costs vary each season and so the traders cannot precisely predict future market prices of their goods.

According to Ochunge (2017), the ability to control Chepkube and other markets' information by cartels negates the principle of efficient markets, and especially the strong form of market efficiency. In fact, only the weak and semi-strong forms are relevant at Chepkube; as shrewd traders have mastered the game and enquire on what would be intrinsic and future value of commodities based on historical trends. Enlightened entrepreneurs who have been in touch with the market for decades, and have learnt the art of manipulating information to their favour, can apply past trends to predict the future value of commodities with near precision. Since most of the produce availed at the market is agricultural, seasonal

historical prices are easy to follow, as determined by supply and demand patterns (Ochunge, 2017).

In the commodities market such as Chepkube, testing market efficiency refers to the testing either all the three forms, or combinations of two forms, or any one form of efficiency. In the case of Chepkube market, anything near published information/announcements is non-existent. The strong form of efficiency reflects historical prices, publicly available information, and inside information in the current asset prices. This concept of efficiency markets of the strong form does not apply at Chepkube because although historical prices, publicly available information, and inside information are all reflected in applicable commodity prices the vendors rely on the brokers who often distort this information to their own advantage. As a result, Chepkube is the weak, form of efficiency market. However, since the market cartels control information at Chepkube to make abnormal profits through arbitrage in its basic form, by the time other participants react, abnormal profits are executed and the cartels have moved on to their next venture. Accordingly, this form of efficient market is the most exploited by cartels at Chepkube.

The strong form of efficiency reflects historical prices, publicly available information and inside information in the current prices of assets. In this form of market efficiency, there is no type of information that can give an investor an advantage on the market to earn abnormal profits. This form of efficiency is non-existent at Chepkube owing to the control of much of the current information by cartels.

The market price of a security or commodity represents the market's consensus estimate of the value of that commodity or security. Thus an efficient market exists when commodity prices reflect all available information about the economy, financial markets, and the specific commodity market involved. The efficiency of the market at Chepkube is determined by the use of all the available relevant information about the economy and the specific commodity market; financial market information notwithstanding, the price the broker passes on to the trader is based on the information and any distortion by the broker is included as well as the brokers charges. Each trader in this case will negotiate a price with the brokers. Essentially, market prices of individual commodities adjust very rapidly to new information, and hence assets and/or commodities are fairly priced, returns are unpredictable and traders are not able to earn superior returns (Brealey, Myers & Allen, 2011; Fama, 1970; Fama, 1991). This pattern is evident at Chepkube as traders are not able to earn superior returns. Superior returns are earned by the brokers. Where there are price differentials, these will quickly adjust as information of varied prices circulate. Accordingly, when the markets are efficient, no investors can outperform the market by identifying undervalued or growth assets. The EMH claims that if one investor is profitable, the other investors in the market also gain by following his/her trading strategy. Since any new information is quickly incorporated when determining commodity prices at Chepkube, it is also not possible for any trader to benefit more from commodity trading than others.

Zhou and Lee (2013) found that market efficiency is not an all-or-none condition but is a characteristic that varies continuously over time. Indeed, market efficiency is 'highly context dependent' (Lo, 2004), which means that the degree of market efficiency is governed by the subjective market conditions, like those at Chepkube market; hence the need to investigate its trading patterns; and the EMH theory.

In a commodity trading context, the EMH assumes that: first, there are very large numbers of traders who analyze, buy and sell commodities for a profit. This is happening daily at Chepkube commodity market where a large number of buyers and sellers, 3 000 plus or minus 1 000, congregate to deal in various commodities with sellers seeking a profit. If it were not for this, the market would not be in existence in the first place. Second, traders get new market information in a random fashion independent of other news. Similarly, new information at Chepkube is also received at random from both the Kenyan and Ugandan side of the border independent of other news. The source and timing of this information is not predictable or predetermined. Third, that there are no transaction costs, no taxes, there are unrestricted short sales, wide range of commodities, and that commodity prices adjust quickly to the new information; the commodity market at Chepkube meets all these conditions. Fourth, traders act as price takers (competitive market), and that trading takes place continuously at equilibrium because prices reflect all available information (Brealey, Myers & Allen, 2011; Jarrow & Rosenfeld, 1984; Malkiel, 2003). This is the case at Chepkube market; traders are price takers and since prices reflect all available information, though distorted by the brokers, trading is continuously at equilibrium.

The predictability of prices was refuted by the *random walk* logic, which was a key factor in EMH. This logic is that if the flow of information is unimpeded and information is immediately reflected in commodity prices, then tomorrow's price change will reflect only tomorrow's news and will be independent of the price changes of today. At Chepkube, market information is unrestricted, albeit distorted, and is reflected in commodity prices immediately the information is received. Consequently, the following day's price change reflect only the following day's news and is independent of today's price changes, which are already reflected in today's commodity prices.

News is by definition unpredictable and, thus, resulting price changes must be unpredictable and random (Malkiel, 2003; Ceccehetti, 2008).This would mean that the prices are the fairest price possible at a given point in time; and that prices at all points in the market should be the same, since it is the same information that has been factored in when prices are determined. Further, players would more or less have a level playing field and it is difficult to predict future prices.

Traders who choose to hold a commodity do so because their information leads them to think that the commodity is worth at least its current market price. Those who do not purchase the commodity interpret their information as a lower appraisal (Van Horne, 2001). News from both the Kenyan and the Ugandan side of Chepkube is usually unpredictable and so are the price changes. The prices are therefore the fairest, in the given scenario, offering a level trading ground. Those who decide to hold a commodity do so knowing that the commodity is at least worth the existing market price. Further, those who do not purchase immediately, do so in order to purchase the items at a lower price at a later point in time. Such traders would wish to wait until market forces result in a reduction in prices.

EMH is an important concept for all the players in the market (stockbrokers, financial institutions, individual and institutional investors, regulators, and the public).Though the traders and brokers may not know the EMH as a concept, they in practice subconsciously understand how it works and therefore, it is of importance to them. The traders for instance, would not expect that they can predict tomorrow's price today, or that they will be able to

profit through buying items at what they conceive to be a cheaper price today within the market. The brokers, on the other hand are able to use the way the market operates to their advantage.

Dsouza and Mallikarjunappa (2015) argue that an investment strategy is greatly influenced by market efficiency; and that market efficiency also dictates the regulatory measures to be developed for ensuring the orderly development and management of the markets in a country. The decision to invest and trader's strategy in trading at Chepkube is premised and influenced by the ability of the market to operate efficiently. Any regulatory measures are dependent on this to ensure the market's orderly development and management.

Application of Arbitrage Pricing Theory at Chepkube Market
The Arbitrage Pricing Theory (APT), originally introduced by Ross (1976) and later extended by Huberman (1982), Chamerlain and Rothschild (1983), Ingersoll (1984), Connor (1984), Chen and Ingersoll (1983), and numerous other researchers, is an asset pricing model that explains the cross-sectional variation in asset returns or prices. Like the Capital Asset Pricing Model (CAPM) of Sharpe (1964), Lintner (1965), and Mossin (1966), the APT begins with an assumption on the return generating process: each asset return is linearly related to several, say k, common "global" factors plus its own idiosyncratic disturbance or characteristic risk; say t. In the case of Chepkube, such 'global' factors could include privileged information held by cartels, transportation and passage on either side of the border, and availability of commodities among others; whereas an asset's own idiosyncratic characteristic risk could be perishability. For example, locals in both Uganda and Kenya would buy maize harvested the same day for a premium owing to its freshness quality. Thus the longer the period to avail maize at the market; the greater would be the t value. If the t value is high, the item fetches a lower price, hence low return. Accordingly, since t is a monotonic function, there should be a statistically significant difference in returns between two commodities when the returns of the two are computed using even days in the sub-periods.

Based on the empirical evidence gathered so far, the APT cannot be rejected in favour of any alternative hypothesis, and the APT performs very well against the CAPM as implemented by S&P 500 value weighted, and equally weighted indices. Therefore, the APT is a reasonable model for explaining cross-sectional variation in asset returns (Chen, 1983).

The weak and semi-strong forms of market efficiency as well as inefficient markets provide opportunities for arbitrage at any market. In its simplest form, arbitrage is the practice where a trader buys a commodity, currency or any other financial instrument in one market and immediately sells it at a higher price to a ready buyer at another market, completing both ends of the transaction usually within a short period. For example, when a trader buys a bag of vegetables at KES 1,000 at 5.00am East Africa time at Wakulima market in Nairobi and sells at KES1, 300 to retailers at 7.00am the same day at South C shopping Centre in Nairobi, such a trader is an arbitrageur. Arbitrage actions continue until more traders participate and the prices adjust as market participants search for arbitrage profits. When such opportunities have been exhausted, commodity prices are said to be in equilibrium. In this context the definition of market efficiency is the absence of arbitrage opportunities, these having been eliminated by arbitrageurs (Brealy *et al.,* 2011; Roll & Ross, 1980; Van Horne, 2001).

Recent reports indicate that arbitrage profits at Chepkube are supported by cross border trade through smuggled items such as wines, spirits and cigarettes which are first exported to

Uganda, charged a lower tax than the Kenyan tax, and then re-imported into Kenya at a cheaper price than that in the local market at Chepkube (Kapchanga, 2009). The items are then re-sold at higher prices at Malaba, Kitale, Busia, Suam, and Bungoma towns and thus arbitrage profits are attained. Recent news of cartels dealing in commodities such as coffee and macadamia nuts across Kenya, Uganda and Tanzanian border point's results in arbitrage prices for the members of the cartels (Waitathu, 2014). The agricultural commodities are usually stolen from the factories or bought at cheaper prices by the cartels who control the prices. They then sell the items at a higher price which gives them excessive margins. Chepkube is one of these border points.

The APT presupposes taking positive expected returns from overvalued or undervalued securities in the inefficient market without any incremental risk and additional investments. It is a form of non-speculative, risk-free betting because it involves dealings where returns and prices are definite, fixed, and known. This concept is applicable in Chepkube in the cases discussed above. In practice, arbitrage consists of trading in two assets, with at least one being mispriced. The arbitrageur sells the asset which is relatively too expensive and uses the proceeds to buy one which is relatively cheaper. Under the arbitrage model, an asset is mispriced if its current price diverges from the price predicted by the model. Where an asset is relatively cheaper, an arbitrageur would short sell the package of commodities on hand, buy the mispriced asset with the proceeds, then sell the mispriced asset and use the proceeds to buy back the "portfolio" and pocket the difference (Van Horne, 2001). This practice is observable in commodity markets in Kenya like Chepkube.

Evaluation of Chepkube Market in the Light of EMH and APT
Chepkube market does not have all the information available to all the traders at all the time. The time-lag in availability of information places this market in the weak and semi-strong form of market efficiency since the traders reap from "new information" from the brokers. Therefore, the assumptions of an efficient market: large number of traders; free entry with minimal, if any, restrictions; unrestricted short sales; wide range of commodities; prices adjusting fairly quickly to old and new information being received; and traders acting as price takers; to a large extent hold true about Chepkube market, validated the Fama (1970) EMH theory. However, the empirical findings (Brealey, Myers & Allen, 2011; Fama, 1970, 1991; Malkiel, 2003; Ceccehetti, 2008), that market prices of individual commodities adjust very rapidly to new information, and hence assets and/or commodities are fairly priced, returns are unpredictable and traders are not able to earn superior returns were unsupported by this study findings as cartels control information to their benefit at the Chepkube market. Thus, the privileged monopoly of information by brokers makes them reap superior returns, which is against key tenets of market efficiency.

However, any advantage tends to be short-lived as people get to know the true position, and respond. This is consistent with the weak and semi-strong form of the market efficiency hypothesis (Fama, 1991); since as the adjustments accrue, brokers and middlemen would have benefited tremendously in an arbitrage scenario.

Where an asset is relatively cheaper, an arbitrageur would short sell the package of commodities on hand, buy the mispriced asset with the proceeds, then sell the mispriced asset and use the proceeds to buy back the "portfolio" and pocket the difference (Van Horne,

2001). This is the basic principle of what takes place under APT. The act of traders sourcing goods, selling them to retailers who then sell them at a profit in the same or alternative market; buying alternative package of goods to sell at a profit in their home or other markets, and so forth, are all acts of arbitrage in its simple form. Thus studies by Lintner (1965) and Mossin (1966) are supported by the research findings as traders in Chepkube do indeed exploit the basic principles under APT.

Conclusion
In conclusion, while EMH and APT have been developed in the context of stock, bonds, currency, and commodity portfolios, they generally apply in major markets like Chepkube in Kenya as discussed in this paper. Market players literally use EMH and APT concepts in their trading activities leading to vibrant rural-urban economic growth across all counties in Kenya.

Recommendation for Future Research
Limitation to the study is that it was a desk review and more information may have been obtained through interviewing on the ground. Further study for Eastern Africa countries should be carried out in line with the discussions in this paper to enable unbiased generalization of application of EMH and APT concept in Eastern African region markets.

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