\\THE DETERMINANTS OF GROWTH AND DEVELOPMENT OF KENYA'S INSURANCE INDUSTRY (1974-2004) "

BY

MESHACK O.^KIAYE

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UNIVERSITY OF NAIROBI
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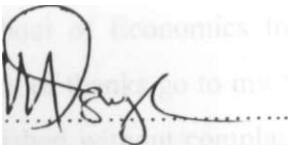
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Declaration

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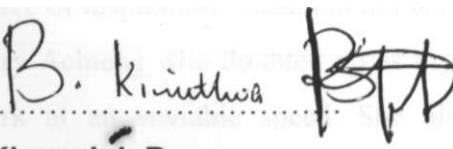
Signed ..~~.....~~...

Meshack O. Kiaye

Date ...^h.1^.1p.fe....

Approval

This research paper has been submitted with my approval as university supervisor.

Signed .....L.^.^.J^.M^L.

Dr Samanta, P.

Date

Signed ....

Mr. Kinyanjui, B.

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Dedication

1 his paper is dedicated to my two wives Mary Achieng Ogweno and I lellen Aoko Ogweno and all my children.

ABSTRACT

Kenya's insurance industry has been undergoing extremely fast growth since independence. This research paper examines the determinants of Kenya's insurance development measured by total premium volume. Several independent variables such as per capita GDP, the total population, per capita wage, per capita education expenditure and inflation rate have been examined. Others are private sector credit by non-bank financial institutions, imports, nominal interest rale and investment in fixed assets (gross fixed capital formation). Empirical studies indicate that some of these factors have determined the development and growth of insurance in other countries and therefore it is prudent to examine their effect in our economy as regards insurance development.

Ordinary Least Square estimation is used to estimate the effect of these variables on the growth and development of insurance in Kenya. This research used secondary data sourced from various statistical reports available from the Central Bureau of Statistics, and the Commissioner of Insurance's office. The sample period runs from 1974 to 2004.

Kenya's extremely fast development of insurance definitely mirrors the characteristics of the national economy as a whole. The study finds some significant results. Per capita GDP, as a measure of wealth for a given region, proves more significant to the development of insurance. Besides, the variables such as fixed assets investment (capital formation) anc^the number of telephones, which are for the first time incorporated as explanatory variables in empirical investigation, have a significant influence on Kenya's insurance growth and development. Kenya's insurance sector will keep growing for the near future mainly owing to her economic development.

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CHAPTER ONE
INTRODUCTION

1.1 General Background

Insurance premium growth is a clear indication of insurance industry   growth development in any region, country or continent. On worldwide basis, in 1994. the gross premium income totaled USD 1968 billion, a 3.5% growth. The growth rate in Latin America was 32.3%. Africa (7.9%). Oceania (4.6%), Asia (2.7%) and North America, 2.1%. The extraordinary growth in Latin America was due to monetary influences in Brazil. As for non life insurance there were stagnating premium rates and a weak demand and this dampened the premium growth. The growth rates halved in non life business from 4.6% to 2.3% due to crumbling or stagnating prices (USA and Britain) and also because of weak demand for additional cover i.e. there were quantitatively low developments which were unable to provide any noticeable impetus to premium volume e.g. Japan and Germany. However life business with an increase of 4.4% once again developed more strongly than the non-life operations. In USA attractive yields in other investment such as stocks, fixed accounts etc reduced the appeal for life insurance (Swiss Re Report: World insurance in 1994).

In 2000 insurance companies worldwide wrote USD 2444 billion in premiums translating into a 6.6% increase in premiums over 1999 when adjusted for inflation. Booming life insurance and first signs of recovery in non-life insurance were the drivers of this growth. Life insurance benefited a result of the shift from public to private pension provision. Non-life reported premium increases, but adversely affected by low prices as a result of premium rate erosion in previous year. The 62% of worldwide premium volume was attributed to life and 38% to non life insurance. Over nine tenths of premium derived from industrialized countries were on average 9.1% of GDP or USD 2384 per capita and per annum was spent on insurance. The Japanese spent the most per capita on life insurance, whereas in non-life the main buyers were the Swiss. In the Emerging Markets an average of just 3.2% of GDP or USD 42 per capita was spent on insurance.

During tlio same year, the worldwide life insurance companies also continued to benefit from their increasingly important role of private pension provision as well as the soaring demand for unit/index linked products on the back of the stock market boom. Outstanding growth rates were achieved in Europe: an average growth rate of 17% in Western Europe and 35% in Eastern Europe. Japan and Oceania reported urowth rates of below 2%Australia suffered a decline in growth, while the modest increase in Japan indicates a turn for the better. The upswing in life insurance premium was attributable to the single premium business that is very volatile and thus the growth in life insurance in future will be more erratic. Non-life insurance reported an inflation adjusted increase of 2.7%, a slight acceleration over the previous year. favorable economic conditions in 2000 and premium rate increase in some countries (such as the UK) contributed to growth. However growth rates in the markets-Japan, US, Germany and France-were considerably lower. Insurance premium in Japan fell once again. The earnings reported by the insurance industry remained lackluster despite their registering few losses in 2000.The combined ratio ([costs losses]/premiums)-the most important gauge of profitability in the insurance underwriting business-remained at a high 109% in Western Europe, and even increased further to 110% in the US. The non-life insurance in the Emerging Markets recovered from the 1998 Asian and Russian financial crises, with growth generally outpacing GDP: growth was also grater than the average during the 1990s.The China/Hong Kong/Taiwan region in particular recorded double digit growth rates. (Swiss Re: World Insurance Report in 2000).

In South Africa there are two insurance companies that account for almost half the premiums in general business sub sector while top life insurers control only about one-third of life premiums. The industry as a whole remain fragmented particularly the life division. But there is integration between banking and insurance companies that has really increased premium growth. In the year 2003, the total industry premium was USD 23,254millions.Out of this life and health segment contributed USD 20212million and USD 3,042million for property and Casualty insurance. In terms of

premium density. South African insurance industry has a density of USD500.09 per person, insurance penetration of 14.5% of GDP. The projected growth in 2004-07 was 10% per annum. The total investment assts of insurance industry as at 31 December ">002 was USD 77.9billion. (Business Monitor International Ltd: South Africa Insurance Report Q4 2004. pg 3)

In Kenva. according to the statistics of the Annual Report (2000) from the Commissioner of Insurance, the industry also generated a Gross Direct Premium income for the year 2000 amounting to Ksh.5.68 billion in long-term insurance against Ksh.4.98 billion in the previous year. The Gross Direct Premium under general business amounted to Ksh.15.19 billion in the year 2000 compared to the previous year's Ksh. 16.05 billion, a decline of 5.35% and representing 1.57% of the country's GDP during the same period. The major portfolio of business was from the following classes: Motor Commercial (Ksh.3.84 Bill.), Motor Private (Ksh.2.82 Bill), Fire Industrial (Ksh.2.19 bill) and Personal Accident (2.09 Bill). These classes amounted to 72.02% of the total Gross Direct Premium written in the market under general insurance business (Insurance Annual Report, 2000, pp 7). In the year 2002. the life insurance premium increased to Ksh.7.2 billion, contributing 0.69% to the GDP. Overall, in the year 2000. the premium income amounted to Ksk.20.867 billion equaling to 2.15% of the GDP in the same year. In the year 2004 the total business underwritten in the industry stood at Ksh.32 billion which was a 2.5% of the GDP. Out of this amount life insurance amounted to 9.7 billion, a mere 0.8% of the GDP.

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The insurance industry supports the Kenyan domestic economy in several ways. The industry gives loans and advances to the government through the treasury bills or bonds, and also the private sector. An analysis of loans and advances in respect of life business in 1995 to 2001 shows that the industry gave out Ksh.620 million in loans and advances in 1995 with the government taking the highest proportion. This figure increased to Ksh.l, 629 million by the year 2001.However general business gave out Ksh.l, 155 million compared to Ksh.436 million in the year 1995.The private sector enterprises that benefited are agriculture, real estate, electricity and water, NGOs,

transport and communication, financial institutions and private individuals. This clearly shows that the industry has been growing in terms of premium income.

1.2. The **Brief** History and Development **of** Insurance in Kenya

The concept of insurance and particularly "social insurance" programmes dealing with socio-economic problems had been around for a long time (Kenyatta. 1962). Members of a community pooled resources together to create "social insurance fund". The premium ranged from material to moral support or other payments in kind. From the fund "drawings were made out" to support the few unfortunate members exposed to perils (Azevedo. 1993). However the history of the development of commercial insurance in Kenya is closely related to the historical emancipation of Kenya as a nation (Throup, 1988).

With the conquest of Kenya as a British colony complete, settlers initiated various economic activities, particularly farming and extraction of agricultural products (I luxley, 1980). These substantial investments needed some form of protection against various risk exposures. British insurers saw an opportunity in this and established agency offices to serve the colony's insurance needs. Prosperity in these colonies justified the expansion of these agencies to branch offices with more autonomy and the expertise to service the growing insurance needs. By independence in 1963, most branches had been transformed to fully fledged insurance companies (Maxon, 1993).In forty years sin£e independence, Kenya's insurance industry has flourished, and by 2002 had 41 registered insurers, 15 transacting general insurance business, 2 transacting life business while 24 were composite insurers transacting both life and general business. Kenya's insurance industry leads within the East African Community (trading block of Kenya, Uganda and Tanzania) and is a key player in the COMESA region. The industry employs over 1000 people. The largest 10 insurers handle over 70% of motor business with a similar number handling well over 90% of the property business in the market.

The Gross Direct Premium income under general insurance business amounted to K.sh.15.19 billion in the year 2000 compared to the previous year's Ksh. 16.05 billion. The major portfolios of business was from the following classes: Motor Commercial (Ksh.3.84 billion). Motor Private (Ksh.2.82 billion). Fire Industrial (Ksh.2.19 billion) and Personal Accident (2.09) billion). These classes accounted for 72.02% of the total Gross Direct Premium written in the market under general insurance business (Insurance Annual Report, 2000)

1.3. The Structure of the insurance Industry in Kenya.

The insurance market is composed of the buyers and sellers (suppliers). The sellers are the insurance companies, reinsurance companies and lately the medical service providers that offer specifically medical insurance. The insurance companies are also categorized as composite, life or general. A composite insurance company is that which offers both life and general insurance. In the insurance market there are various types of insurance policies ranging from life-ordinary life and super-annuation to general insurance policies such as fire and accident, liability and marine insurance. The buyers in the insurance market are the individuals, firms, NGOs and government bodies. As regards market structure, there are certain features worth noting. One, there is free entry and exit from the industry. However the legal and statutory conditions have to be met. For a general insurance company, the paid up share capital is Ksh. 100 million while that for life business is Ksh.50 million. There are also many buyers in the market consisting of firms, individuals and government bodies. Unlike in perfect competition, the industry»is suffering from information asymmetry. Not every participant in the market has perfect knowledge of the market e.g. some buyers do not know where they can get cheapest rates for insurance covers. Even some insurance companies have more knowledge of the market than the others possibly because of their investment in research or competent personnel. There is also product differentiation that proves the fact that the insurance industry in Kenya exhibits the oligopolistic kind of market structure. There are few sellers (insurance companies) and many buyers (the insuring public, institutions, public enterprises, the government, etc. I he products are differentiated in terms of additional riders, excess, discounts,

deductibles and also in terms of renaming them e.g. the usual domestic package policy is renamed "Home safe Insurance" policy. Lastly, because of product differentiation, pricing is not standard. Different companies charge different rates   save for Public Service Vehicle insurance commonly known as Matatu insurance, which was standardized by the Commissioner of Insurance and the Association of Kenya Insurers (AKI). However this may not last since it seen by the players as interference in the pricing strategy and that it hurts competition.   In terms of product distribution, there are several insurance brokers, independent agents, tied agents and freelance agents who market and sell the insurance products. Banks do not participate in the selling of insurance products unlike in South Africa where this is the norm (banc assurance). Other players in the insurance industry are: risk managers, risk surveyors, marine surveyors, loss adjusters, loss assessors and claim settling agents.

In Kenya, there are two insurances that are compulsory as per the law. namely workmen compensation policy and third party motor insurance. During the year 2004. the number of licensed insurance companies decreased from 42 in 2003 to 41 in 2004, these included two reinsurance and 39 insurance companies. Other supporting institutions included insurance brokers (212), insurance agents (2004), risk managers (8). loss adjusters (17), loss assessors (208) and others such as insurance surveyors and one claim settlement agent.

1.4. Insurance and the Kenyan Economy

In East Africa and Kenyan particular insurance has played a pivotal role in economic development. In Kenya today, insurance is one of the most important industry in the financial services sector.   We have over 40 insurance companies, reinsurance companies, several insurance brokers, insurance surveyors, assessors and investigators all operating within the region. It is no doubt insurance has really contributed to the overall development of the country's economy.   Insurance contributes reasonably to our country's GDP. Insurance has played the following roles in the economy.

Mobilization of savings for investment; Insurance companies collect premiums in consideration for the cover they provide to the insured. This money is invested in various investment avenues open to them as per the statutory regulations. Insurance, through some of the life assurance products like endowment, whole life, school fees, and unit linked policies, personal and group pension schemes and other voluntary individual savings is a form of forced savings. We have several buildings in Kenya, which were put up from such insurance premium. A part from the life assurance savings we have the underwriting profit from general insurances including motor insurance, which are also invested by the insurance companies. It should be noted that in the \ear 2002, the total investments of the insurance industry at the end of the year amounted to 58.8 billion compared to 53.3 billion in the previous year. The total assets for the industry amounted to K.sh.72.4 billion. The insurance industry investment channels are: government securities, local authorities' securities, debentures, preference shares, ordinary shares, secured loans, unsecured loans, bank deposits and land and buildings.

Source of Government Revenue: The insurance companies have also contributed a great deal to the Exchequer in terms of the corporation tax on the profits. There are also some other levies which the insurance companies have to meet like trade licenses, renewal fees for registration etc. These companies also act like collection agents for the government for example they collect 0.2% of all premiums, which is used to facilitate insurance training in the country. This money goes direct to the College of Insurance. There is also premium tax and reinsurance premium tax which the insurance companies have to pay to the government. The premium tax is rated at 1.5% of the gross direct premium and reinsurance premium is rated at 5%.In the year 2000 the industry premium tax paid was Ksh.262.1 millions and the reinsurance premium tax was Ksh.54 millions. The government also borrows money from insurance companies through the issuance of treasury bills which the insurance companies invest most of their funds in. Actually it is mandatory for insurance companies to invest a greater percentage of their funds in treasury bonds.

Provision of employment opportunities: Insurance companies directly employ a good percentage of the Kenyan population. We have all cadres of employees performing different tasks in the insurance companies. In the year 2000 alone the insurance companies employed 4,204 people and insurance brokers employed 1.834 people. There are also many people who are indirectly employed by the insurance companies. These are people who are working in companies, which are directly affiliated to the insurance companies. The following are notable: Insurance agents. Insurance brokers and Independent Insurance Agents, Assessors. Risk Surveyors, Marine Surveyors. Insurance Investigators and Law firms. Most of these trades exist because insurance companies contract them for their specialized services.

Removal of Risk burden and business fear; Business enterprises are exposed to several risks such as fire, burglary. Hoods, loss of profits, earthquake and the like. The business people are not spared of this fear. The insurance companies have relieved them of this fear because the insurance policies cover losses occasioned by such risks and perils. Therefore they have the required peace of mind, which is a requisite for any successful businessman. Therefore many businesses have come up and this has contributed to the overall development of the Kenyan economy. This peace of mind is not only concentrated on the business people. Everybody who can buy an insurance policy has this peace of mind. We have several personal insurances such as personal accident, motor insurance, medical insurance, domestic package, fire and burglary, and life assurance policies such as endowment assurances, unit linked, annuities, education insurance plans, and whole life policies. These personal insurances have given the insured the peace of mind, which is necessary for a healthy population and workforce. In the transport industry the travelers are covered through the third party insurances for the matatus, buses, taxis, tour cars and private hire vehicles. The matatu industry has benefited a great deal from the insurance industry, which has always provided the required insurance and has paid claims for accident victims and also the vehicle owners have been compensated for the loss of their vehicles as a result of accidents or motor vehicle thefts.

Ilelpinu to maintain a surplus in the balance of trade; Balance of trade involves imports and exports of goods and services. Insurance companies import and export insurance services through re-insurance. This basically means that an insurance company can insure some of its risks that it has accepted with another insurance company called the re-insurer most of whom are in courtiers outside Kenya. This amounts to insurance importation that involves payment of the required premium in terms of foreign exchange. Our local insurance companies also accept reinsurance from other foreign countries and they are being paid in US Dollars. This improves our current account or balance of trade.

All this contribution from the insurance industry has come about because of the price the policyholders pay in return for the protection they get.

1.5 Problem Statement

The insurance industry has been facing competition from depository financial institutions such as banks, savings and credit cooperative societies and other financial institutions in the market. Another problem is the existence of fake motor insurance certificates circulating in the industry denying the insurance companies the premium income It is therefore important to know the factors that significantly determine the growth in premium income and thus the overall development of the insurance sector.

Life insurance premium has been growing at a lower rate as compared to non-life insurance. To achieve a^Jbalanced growth in the industry there should be more equal rates of growth and development in both the insurance sub-sectors. This has not been achieved due to factors that are the focus of this research. Just like in some countries low-level life insurance consumption has been attributed to low level of education or high illiteracy rate. Can this be a significant factor in Kenya? If so what steps can the policymakers take in order to raise the literacy levels of the populace?

I he insurance industry growth is very important to developing nations as it creates employment. In Kenya the insurance industry employs over 1000 people. The largest 10 insurers handle over 70% of motor business with a similar number handling well over 90% of the property business in the market.

The already achieved considerable development of Kenya's insurance industry and the forecasted great potential in the coming years needs to capture the interests of the academic staff. What factors behind are supporting the substantial growth in spite of the problems facing the industry? Whether the governing factors proved significant in ihe other countries also have effect in case of Kenya?

Furthermore, any ignorance of the background such as the enforcement of open-up policy, liberalization, and gradual participation in globalization, will necessarily lead to the failure in telling the truth of Kenya's insurance development. One of the evidence is the increasing degree of openness, which is often measured by foreign direct investment (FD1). Kenya, since 2000, has been one the recipients of FDI in the developing countries. More than Ksh.16 billion amount of FDI, in total, flowed into Kenya over the period between 2000 and 2003 (Economic Survey 2004, Ministry of Planning and National Development. Central Bureau of Statistics, Kenya). Thomas (2002: 415) states that: "As foreign investment flowed into a country, the demand for insurance protection grows. The economic growth spurred by foreign investment generates additional demand for insurance in the domestic economy."

Insurance is a sub sector in the financial sector in our economy besides banking and real estate. As an indicator of a growing economy each and every sector must participate in the financial and capital market. Our insurance industry has been a major
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participant in our capital market through the use of insurance premiums (mobilized savings). There are also some insurance companies that are quoted in our stock exchange e.g. the Pan Africa Insurance and Jubilee Insurance Holdings. It is because oi some of these reasons that this study is based on exploring the possible factors determining the development and growth of our insurance industry.

1.6. *Objectives*

(a) To identity the factors determining insurance industry growth and development in

Kenya.

(b) To estimate the size of the impact of the above determinants on the growth and

development of the insurance industry in Kenya.

 (c) To draw policy implications and recommendations based on the results of the

investigations.

1.7 *Significance of the* Study

The research contributes literature in the main aspects as follows. First of all. some variables, such as non-bank financial institutions loans to private sector and imports volume are for the first time to be introduced in the econometric analysis on insurance consumption. Also population count is firstly used to explain the development of Kenya's life insurance. Additionally, the investment in fixed assets (Gross Fixed Capital Formation) is never incorporated as an independent variable in the previous research on property insurance expenditure. In prior studies the variable education has been measured using student enrollment for University education. This study will look at education using the government expenditure on education. This will clearly make it easier to draw conclusions and come up with policy recommendations as regards education and insurance growth and development.

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I his research will be very important to the policy makers, the insurance industry stakeholders and other bodies or organizations as the major macroeconomic factors affecting the development, consumption or growth of both long-term and general insurance will be determined.

CHAPTER TWO
LITERATURE REVIEW

2.1 Theoretical literature review

The starting point for any theoretical approach to explaining demand for life insurance is the consumption theory in its various forms. Other factors are also of importance, but this concern the supply-side influences on the activities of the markets for life insurance products.   Macroeconomic literature distinguishes various consumption theories that focus on incomes, price and interest levels and the population structure as important determinants for consumption. This includes in particular the Keynesian consumption hypotheses (absolute and relative income hypotheses), from which permanent income hypotheses (Friedman, 1957) and the life cycle hypothesis, which can be traced back to Modigliani (1963), must be distinguished. The traditional approaches of consumption theory are extended by theoretical approaches to explaining life insurance demand, which take into account not only income parameters and prices but also factors such as uncertainty about lifetimes and personal risk aversion. Concluding a life insurance contract, with the associated obligation to make regular payments, reduces the individual's or a family's ongoing ability to consume during the earning phase. Voluntarily foregoing current consumption is here aimed at achieving regular or a higher income in the retirement phase or of safeguarding the beneficiaries' (e.**g.** surviving spouse or children"sO future ability to consume.

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Keynesian Consumption Theory.

Keynes came up with consumption function that plots real consumer expenditure against real income He observed that as incomes increase people tend to spend a decreasing percentage of income or save an increasing percentage of income.

C=c(y).

The slope of this function is the marginal propensity to consume (MPC) which is less than the average propensity to consume (APC). If the ratio c/y falls as income raises, the ratio of the increment to c to the increment to y, c', must be smaller than c/y.

The Ando-Modigliani Life Cycle Hypothesis

According to this hypothesis, the typical individual has an income stream that is relatively low at the beginning and end of his life, when his productivity is low and high durum the middle of his life. On the other hand, the individual might be expected to maintain a more or less constant, or perhaps slightly increasing, level of consumption throughout his life. The constraint on this consumption is that the present value of hi total consumption does not exceed the present value of his total income. This model suggests that in the early years of a person's life he is a net borrower. In the middle years he saves to repay debt and provide for retirement. In the late years he dissaves. Regarding insurance, an individual buys an annuity policy to provide for his retirement in the later years. An annuity is that life policy which makes periodic payments per month or as may be designed after its maturity. As the model postulates a person saves during his middle years. Savings take various forms including life or endowment assurance policies that are bought purely for savings purposes. The life-cycle hypothesis is closely related to the theory of work-leisure choice, which has been widely applied in the retirement literature. In the theory of work-leisure choice, individuals are assumed to maximize their utility derived from the consumption of goods and services, as well as from leisure. However, the consumption of goods and services requires income that, in turn, must be generated by earnings or savings. In this context, the retirement decision is based on the tradeoff between the utility gained from leisure time spent in retirement and the consumption of goods and services. Since retirement usually implies a substantial reduction of, or total absence of, wage income, the retirement decision is based on the point where an individual's savings accumulation has reached the level where it is sufficient to support the levels of consumption and leisure that maximizes his or her utility.

Yaari (1965),

in his life-cycle approach explicitly considers the uncertainty about lifetimes. He shows that given the uncertainty about the individual's death (or accident in case of motor/property insurance) and the desire to leave adequate income for dependants buying a life policy enhance the lifetime utility. Hakanson (1969) and Fischer (1973) corroborate this cardinal theoretical finding. The

importance of bequest motive is discussed in literature especially in connection with the quantitative significance of intergenerational transfers. Bernheim (1991) studies the strength of the bequest motive in a theoretical setting. He is able to demonstrate that a significant part of overall savings is motivated by the desire to provide security for surviving dependants. Pissarides (1980) extends upon Yaari's analysis (1965) by making allowance for the retirement phase in addition to bequest motive. In his model approach, he shows that life insurance is theoretically able to absorb all fluctuations in lifetime incomes, so that consumption and bequest become independent of when the income is generated.

Lewis (1989) defines life insurance demand as a function of the probability of primary income earner's death, the present value of consumption by the beneficiaries, the relative risk aversion of the beneficiaries, the household's net wealth and the price of insurance. Specifically he derives demand for life insurance as a maximization problem of the beneficiaries, the spouse and the offspring of the life insurance policyholder. Deriving utility maximization by both spouse and offspring separately and assuming no bequest motive by the policyholder and an isoelastic utility function, Lewis shows that the total life insurance demand can be written as follows:

$$(1 - lp)F = \max \{[1 - lp/l(1 - /;)]^{1/6} \ TC - W.O)$$

Where / is the policy loading factor-the ratio of the costs of insurance to its actuarial value-, p the probability of the primary wage earner's death, F the face value of all life insurance written on primary wage earner's life, 5 a measure of the beneficiaries' risk aversion, TC the present value of consumption of each offspring until he/she leaves the household and the spouse over his/her predicted remaining life span and W the household's net wealth. Life insurance demand increases with the probability of the primary wage earner's death, the present value of beneficiaries' consumption and the degree of risk aversion. Life insurance demand decreases with the loading factor and the household's wealth.

Permanent Income Hypothesis (Friedman Approach)

This approach is based on the assumption of individual consumer utility maximization that gives the relationship between an individual's consumption and present value. Friedman's permanent income is shown as:

$$y'_P = r.PV'$$

This is the permanent income from the consumer's present value that includes human capital-the present value of his future labor income stream. The approach further assumes that the consumer wants to smooth his actual income stream into a more or less Hat consumption pattern. This gives a level of permanent consumption. c'_p that is proportional to y'_p. $c'_p =_k y_p$

I "he individual's ratio of permanent consumption to permanent income, k^1 depends on the interest rate-the return on saving. These two theories of consumption yield smoothing consumption via capital markets and suggest that the demand for life insurance and annuities can further smooth consumption.

Absolute and Relative income Hypothesis

The model developed by Duesenbcrry in 1949 and it differs with two approaches discussed elsewhere in this paper. The first hypothesis postulates that consumers are not so much concerned with their absolute level of consumption as they are with their consumption relative to the rest of the population. The Ando-Modigliani and Friedman models are based on the solution to the problem of consumer choice where the individual tries to maximize $U = U (C_o,...C_t,....C_T)$ subject to the present value constraint. In that case only the absolute level of individual's consumption enters the utility function. However the relative approach has the utility function as:

$$U = U(C_o/R_o,... C_t/R_t,... .C_T/R_i)$$

Where R's are the weighted average of the rest of the population's consumption. I his says that utility increases only if the individual's consumption rises relative to the average. Therefore the individual's propensity to consume (c/y) or MPC will depend on his position in the income distribution. A person with an income below the average will tend to have a high MPC because he is trying to keep up to a national average consumption standard with below average income.

Duesenberry's second hypothesis is that present consumption is not inlluenced merely by present levels of absolute and relative income, but also by levels of consumption attained in previous periods. This assumption suggests that the aggregate ratio of savings to income depends on the level present income relative to previous income.

Mathematically.

sy =ao + aiy/ y.

Where, y is the real disposable income. As present income rises relative to its previous peak, s/y increases and vice versa. Converting   this to a consumption function by observing that y is disposable income, c/y =1 -(s/y) C/y = (l-a$_0$) - aiy/ y.

As income grows previous peak income will always be last year's income.

These consumption theories of absolute and relative income infer that the demand for insurance increases with income on an absolute or relative basis.

Based on the expected utility paradigm, the insurance demand theory suggest that such factors as individual's income and wealth, the price of insurance, the individual's degree of risk aversion, and the probability of loss decide the individual's insurance purchase.

The conventional expected utility theory.

In discussing the expected utility theory, it should be borne in mind that a rational consumer or individual faced with risk has certain options. The risk, which is defined as the probability of loss, can be transferred, assumed and can also be spread. It is this risk transfer option where insurance comes in. Insurance is a risk transfer mechanism. A risk averse individual   will chose insurance when faced with a risk.

The theory of the demand for insurance has been based on expected utility theory and an assumed preference for certain losses over uncertain ones of the same expected magnitude (e.g. Friedman and Sacage, 1984, Arrow, 1963)

 The expected utility theory assumes that a consumer's utility, U, is a function of disposable income, Y. Assuming a health insurance context, there is probability, p,

that a consumer become ill and spend L on medical care. Alternatively the consumer **could** purchase lull insurance coverage for the actuarially fair premium (premium **equals loss)** of **P=** pL for which the consumer would receive a payoff transfer, **1.** if ill For simplicity, assume that I=L. thus expected utility without insurance is:

$EU_U=(1-P)\ U(Y)+pU(Y-L)$.

With insurance the expected utility is:

$EU, = (1-p)U(Y-P)\ t\ pU(Y-L+I-P)\ =U(Y-P)$.

If marginal utility of income is diminishing, the consumer is better off paying P for insurance and avoiding the risk of loss, L. Thus, the expected utility -maximizing consumer would purchase insurance coverage for these expenditures if $EUi > EU_U$.(the expected utility with insurance is greater than expected utility without insurance).Therefore according to the expected utility theory the purpose of any insurance policy is to convert an uncertain, but potentially large, loss into a certain, small loss. Such a conversion benefits the consumer if greater losses cause progressively larger declines in utility (that is there is diminishing marginal utility of wealth). For a risk averse individual the expected utility of wealth is less than the utility of expected wealth given a non-zero risk. i.e.

$E\ (U(w)< U(E(w)$.

As a general rule in risk theory, uncertain prospects are worth less in utility terms even when the expected tangible payoff are the same. A utility maximizing consumer will purchase insurance if the expected utility of wealth with insurance is greater than the utility of expected wealth without insurance. Wealth has a diminishing marginal utility. Hence its losses cost more utility than equivalent monetary gains. A risk averse person is therefore better off with a given amount of wealth with certainty than the same amount of wealth in expectation but with variance around this quantity.

In addition to bequest motive, personal risk aversion is a further important factor in determining the individual and aggregate consumption and savings behavior of

economic units. In their work. Kami (1985) and Zilcha (1986) develop yardsticks for measuring risk aversion and investigate its implications for life insurance. They show analytically that an individual with a higher risk aversion generates more demand for insurance than that with a lower risk aversion.

2.2 Empirical literature review

Mantis and Farmer (1968) examine the determinants of America's life insurance demand, measured by total sales per year over the 1929-1964 periods, which may be one of the earliest empirical studies in this field. According to Zietz (2003), twenty-six academic empirical studies examining the determining factors associated with a consumer's life insurance demand had been published. Five categories of parameters including demographic, macroeconomic, socio-psychological. institutional, and insurer-side variables are investigated to be the governing factors for the life insurance coverage. The literature specifies that disposable income, the inflation rate, financial development, social security, and some population variables such as young dependency, aged dependency, birth rate, educational level, life expectancy, are verified as the robust explanatory variables for the life insurance consumption.

DePamphilis (1977) formulates a model framework that assumes that the development of premium income is positively dependent on incomes and negatively dependent on the insurance business in force. The basic model is supplemented by price, interest rate and^ocial transfer variable to make allowance for the cyclic effects that became apparent in time series studies. In his model framework which covered the period between 1952 to 1974 in US, he came up with findings which indicate that the premium incomes are positively (negatively) correlated with disposable income (consumer price index); social transfer payments are identified as substitutes for private life insurance and higher interest rates reduce growth in premium volume.

Wacon (1980) studies the factors determining the aggregate premium volume from new business in United Kingdom for the period 1946 to 1968. As regards the

dependent variable, a distinction is made between demand and supply, while premiums are broken down according to motives "protection" and "saving." In •iddition to a constant and prices for the two kinds of insurance, a set of exogenous demand and supply variables is used in model equations, of which they are four in •ill All four equations are estimated simultaneously with the aid of two-stage LS-method. In some versions an adaptive expectation model is integrated into the model to make allowance for anticipated inflation as an explanatory variable. The results show that income elasticity, average income tax and unemployment rate are all positively related to the premium income. Prices have got no significant influence on demand, the income variable by far being the most important explanatory factor.

Schwebbler (1984) and the GDV (1983) analyzed the factors influencing life insurance demand in Germany in the period 1965 to 1980.As their indicators for demand they use the growth rates of premium volume, sums insured under the new business in force and the sums insured under new business. The departure point for the multiple regression analysis is a factor analysis that serves to identify groups of variables and to reduce the high number of separate influencing factors to the essential minimum. The findings identify three groups of influencing factors: the macroeconomic situation (economic growth, unemployment rate and price inflation), income trends (disposable income, private savings rate and private consumption) and socio-psychological indicators. These determinants explained 90% of the variation in the respective demand indicators.

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Beenstock et al. (1988) proves the influence of income on the property-liability expenditure. Browne et al. (2000), verifies that income, wealth, the percent of a country's insurance market controlled by foreign firms, and the form of legal system in the country all have a significant effect on demand for insurance. As our interest lies in the determinants for Kenya's insurance consumption as a whole, we follow Browne et al. (2000) that the governing factors for corporate demand for insurance are the same as the individual.

1 ruett and Truett (1990) analyze the determinants of insurance demand on the basis of average time series for Mexico and US in the period 1960 to 1982 (1964-1979 for Mexico). As for the indicator for life insurance demand for the US. they use average spending on life insurance products per family, in Mexico life insurance in force in relation to the working population. The study results indicate that the demand for insurance is dependent on average age of the population, education and real per capita income.

Browne and Kim (1993) investigate the determinants of life insurance demand that explain the variation within a sample of 45 countries. The theoretical start point for the empirical analysis is again Lewis's model (1989). Both the premium volume and also the insurance density are used as indicators for demand. A log linear model is estimated for the two time points 1980 and 1987 with the aid of least squares (LS) method. Explanatory variables in the regression are the proportion of younger people in the population, Islam as a professed religion, incomes, social security, the anticipated inflation rate, education levels, the average life expectancy and the price of insurance. The regression analysis significantly verifies most of the signs as theoretically expected only the proxy variable for life expectancy yields no significant contribution to explaining the demand for life insurance.

Lang (1995), in his analysis for Germany, uses the results of the consumer expenditure survey (EVS) performed in 1988.With the aid of an income tax simulation he calculated the potential and actual tax benefit achievable through saving in endowment assurance. The principal findings of the regression analysis shows that the budget elasticity of saving in endowment policies declines significantly with the rising budget and the occupational category to which the household belongs has a major influence on the amount of savings in endowment policies among other remote factors.

Outreville (1996) studies the correlation between premium income and the level of development of the financial market. He found that the premium income is positively

and significantly dependent on income and on the development of the local financial market. The analysis is based on a sample of 48 developed countries for 1986.Premium income is analyzed as a function of the influencing factors GDP. real interest rate, anticipated inflation, life expectancy at the time of birth, development level of financial market and a dummy variable for activities by foreign companies in the home market. The premium income and Gross Domestic Product arc used in per capita terms, the regression equations are estimated both in linear and also in log linear form with the aid of Ordinary Least Square method. The results show that the development of life insurance premiums is significantly positively dependent on income and the development of the financial market structures have a significant negative influence on international premium development. The correlations of anticipated inflation and life expectancy are in line with the theoretical considerations. There is no evidence of a significant influence of real interest rates or a dummy variable for the activities by foreign firms in the home market.

Muller (1998) explains life insurance in Germany on the basis of economic and psychological factors. He studies the determinants of aggregate life insurance demand on the one hand and those of specific life insurance products "capital-forming life insurance", "endowment insurance", "term life insurance" and "annuity insurance" on the other. As indicators for respective demand, the multiple regression approaches use the sum insured under new business ands the number of new policies. The empirical analysis cover the period 1975 ton 1996 and uses both quarterly and annual data. The results show that 88 % of the demand for capital forming life policies (indicator: sums insured) can be explained by means of the ratio of net to gross income, the number of the unemployed, anticipated opportunities for future savings, private sight deposits and a dummy variable for the first quarter of • 995 (introduction of compulsory long-Term care insurance in Germany). 83% of endowment assurance demand (indicator: sums insured) can be explained on the basis of the ration of net to gross income, individual's assessment of his or her personal financial position in the past, the sight deposits of private individuals, expectations of future price trends and a dummy variable for the 1st quarter of 1995.

In contrast to the macro economic studies aforementioned, micro econometric studies focus on explaining how the individual households decide how they spend their income. The portfolio decision in favor of life insurance products depends e.g. on the returns offered by alternative forms of investment like shares and stocks, savings account deposits, fixed deposits, term deposits, cooperative shares and to the tax incentives available to the purchasers of life insurance. How preferential tax treatment can influence saving by means of life insurance products has up to now been the subject of only a few empirical works.

Walliser and Winter (1998) investigated the quantitative importance of tax influences and of the bequest motive to demand for life insurance in Germany. The empirical analysis driven by a life cycle model postulates three reasons for buying a life insurance product: to enhance bequethable wealth; tax advantages over other forms of saving; and the saving motive, which is modeled by allowing for lump sum payments as well as regular annuity payments. Like Lang (1995), the study uses the consumer expenditure survey (EVS) performed by the German Federal Statistics Bureau as its database. In the first stage of microeconomic analysis, life insurance demand is estimated on the basis of a probit regression, i.e. the dependent variable takes the value of 1 if the household holds one or more insurance policies, and otherwise the value is zero. The explanatory variables included age. net income, and various proxies for lifetime income, number of children, family status and average tax rate. The probability of buying a life insurance policy shows a non-linear dependence on age and net 'earned income. In line with theoretical considerations, the bequest motive is corroborated; married persons and families with children are more likely to take out insurance policies. The assumption that tax incentives have a positive influence on demand is confirmed. A higher average tax rate increases the probability of owning a life policy. A second stage in the analysis studies whether the right hand variables of the probit regression can also explain the face value of insurance. With the aid of a tobit regression that takes into account the fact that the variable to be explained cannot be observed in every household, tax incentive effects

•md the bequest motive are shown to have a significant influence on the face value of insurance.

Zhuo (1998) adopts three models to test the determinants of China's life insurance consumption. Using cross-sectional data for all provinces (29 observations) except Tibet for the year of 1995, his study finds that per capita GDP, young dependency rate are the significant determinants. He then employs the national time-series data for the period of 1986- 1995 (10 observations) and just per capita GDP proves significant, which is also the only significant determinants in his third model based on the cross-sectional data for 14 large cities in China. The model approach uses the aggregate life insurance premiums (sum of premiums from endowment and annuity insurance) per capita and the separate payments as dependent variables. The GDP per capita is positively correlated both with the aggregate life premiums and also with the two types of insurance observed. The dependency ratio of children likewise has a significant influence on demand for life insurance policies, and particularly endowment policies. Both the dependency ratio of the elderly and the size of social insurance, and also the indicator for human capital, yield no significant contribution to explaining the regional variation in insurance premiums.

Beck and Webb (2002) investigate the determinants of life insurance demand in a panel of 68 countries over a period from 1961 to 2000.In the first stage of the study: eight five-year averages are analyzed. Random effects and fixed effects models are used for the econometric estimates of the yardstick for measurement of life insurance demand (insurance penetration insurance density and business in force in relation to GDP). The per capita income level, inflation, the ration of the elderly to the working population and the indicator for the development of the banking sector are robust explanatory variables for the international and intertemporal variation of insurance penetration, insurance density and life insurance business in force in relation to GDP. However, religion and institutional factors also account for some of the international variation.

Iappelli and Pistaferri (2002) attempted to test empirically the economic theory that portfolio decisions are dependent on disposable income of the household and on the remaining returns after taxes. The authors did this by investigating in their analysis the effects produced on the portfolio decisions of private households by a change in the tax framework for life insurance policies. The tax reform of 1992-1994 in Italy, which forms the basis of the study, abolished tax incentives benefits for life insurance policies bought by households with high marginal tax rates and introduced tax advantages for life policies bought by households with low marginal tax rates. As a result, the relative profitability of life policies by comparison with other financial investments was reduced for the rich and increased for the poor, while for middle-income groups it remained unchanged. The study covered the years 1989 to 1998 allowing the effects of the tax reform on portfolio decisions of various households to be investigated in detail and the household panel drawn up by the Bank of Italy was used as the database. In line with the strategy of the study, the regressions were performed not only for the various time periods, but also for various household groups that differ according to whether or not they are affected by the tax reforms. Probit and tobit regressions are used to investigate on the one hand the probability of a household investing in life insurance policies (probit regressions) and on the other hand the amount invested (tobit regressions). The specifications for the different regressions comprise, among other features, dummies for the various age groups, dummies for various education levels, indicators for gender, family status, number of children and a number of income variables. Neither the tobit nor the probit regressions provide evidence of any tax effects. All in all the authors find no statistically significant portfolio effects resulting from a change in tax incentives for life policies.

Hwang and Gao (2003) introduce four variables of income, inflation, urbanization and education to examine their influence on the life insurance consumption over the period of 1986-96. GDP per capita, urbanization, and educational level are found significant and positive, while the influence of inflation shows not significant. Lately in 2005, Hwang and Greenford (2005) use variables including income, education,

social security, social structure, one-child policy, price of insurance, economic development to try to explain the development of life insurance from the perspective of comparison among China mainland. Hong Kong and Taiwan. Their study expresses that real GDP per capita, education level, social structure measured by agricultural population ratio of total employed affect the insurance consumption in a significant and positive way. whereas one-child policy is significantly negative.

Many theories suggest that market imperfections motivate corporate to take out policy for loss protection (Smith, 1986; Grace and Rebello, 1993; MacMinn, 1987; Skogh, 1989).

In contrast to life insurance, the empirical studies on property-liability insurance consumption are less extensive (Beenstock el at., 1988; Zietz, 2003). Many prior researches focus their interests on the corporate demand for insurance (Core, 1997; Davidson lll et al,, 1992; Meyers and Smith, 1990; Amory, 1999; Zoo. 2003; Zoo et al,, 2003).

2.3 Overview of literature review

As can be noted from the literature review several factors influence the demand for insurance. The notable ones are population, interest rates, inflation, Gross Domestic Product, income tax, alternative investment returns, social security, disposable income, education, type^f policy and price among others. Most of the reviewed studies were based on life insurance demand and consumption and the variables above were estimated accordingly. No much emphasis was made on non-life insurance consumption. It is for this reason and the fact that non-life insurance premium by far exceeds the life premium in Kenya that this study becomes very significant. The study also introduced the two variables; the gross fixed capital formation and private sector credit by the non-bank financial institutions, which were ignored by previous studies. The variable, imports, used in this study as a proxy for foreign direct investment was also ignored in prior studies. Its measurement will also

nive an insight on the impact of imports on both lite and general insurance development in terms of premium volume, premium density and premium concentration. It is this knowledge gap that the current study aims to bridge.

CHAPTER THREE
METHODOLOGY

3.1 Analytical   background

This study derives from the formal model developed by Lewis (1989) to measure life insurance demand. According to Lewis (1989) life insurance demand (LD) is a function of several variables such as the probability of primary income earner's death (P), the present value of consumption by beneficiaries (TC), the relative risk aversion of the beneficiaries (S). the household's net worth (W) and the policy-loading factor (L). The following is the model he used to measure life insurance demand:

LD=F (P, TC, S, L. W)

An individual would buy a life insurance policy because of the benefits endowed in them. It can be used as a savings device or one would like to leave money to his dependants upon death. The premium paid builds to so many billions. Several enterprises are exposed to a lot of risks such as the risk of fire, floods, theft etc. It because of this fact that makes firms buys certain types of insurance policies.

3.2 Model   specification

This study aims at assisting us to understand the determinants of growth and development of insuraffte industry in Kenya. In particular the study test the hypothesis that insurance growth is not only related to per capita GDP but also to other long run explanatory variables. The study also establishes the casual relationship between the insurance growth and the long run explanatory variables. To empirically test these determinants the study specifies a growth of the insurance industry function where the total premium volume is used as measure of the growth and development of the insurance industry. This measure is related to several long run explanatory variables.

The mathematical formulation of the model is specified below as

TOTPREM =f (PCGDP. POP, CAPF, PCEDXP. 1N1-L, LEND, TELUNT. CRED)..(1)

The empirically testable model is expressed below as;

$LTOTPREM = a_0 + a, LPCGDP + a_2 LCRED + a, L LEND + a_A LINFL + a.LCAPF + a_b LPCEDXP + a_7 LP OP + a_s LTEL UNIT + U$

Where;

 TOTPREM =Total Premium volume

POP -Total Population

PCGDP = per capita GDP

 CAPF = Gross Fixed Capital formation

PCEDXP = Per Capita Education Expenditure

INFL = Inflation

CRED = Non Banking Sector Credit

LEND = Lending rates

TELUNT = Number of telephone units used

3.2.1 Variables used in the model.

In this section the operational use of the variables of the model are explained and hypothesized. The interrelationships as indicated in the model arc also discussed. This is done for the sake of measurement of the variables and hypothesis.

I. Total Premium volume (TOTPREM)

Total Premium volume represents total insurance premiums written in a given region/country and is a major indicator of the importance of the insurance industry in the economy of that region/country, which is popularly adopted as the dependent variable in prior empirical studies. Insurance density is calculated by dividing direct gross premiums by the population and represents average insurance spending per capita in a given region/country, which is often used as the dependent variable in the

previous studies. Insurance penetration is the ratio of direct gross premiums to GDP. indicating the relative importance of the insurance business in the given economy, which is less frequently used in the prior research. This research at the same time employs the premium volume, insurance penetration and premium density as the dependent variable that represents the growth and development of the insurance industry during the sample period.

Independent Variables

For the independent variables, we introduce the following indicators, which are supposed to determine the development of insurance industry. The independent variables common for both life and property are composed of total population, per capita GDP, wage level, private savings deposit, education expenditure, and inflation. In addition, such variables as Gross Fixed Asset Formation and imports are special for non-life insurance. These variables are as discussed below;

2. Total Population (POP)

Mantis and Farmer (1968) use population as an independent variable to explain the life insurance demand in U.S for the period of 1929-1964. Schlag (2003) also tells that the size of population determines the operating background, that is to say. the size of market, for the life insurance industry in the long term. Besides, size of population is often an element for the potential of Kenya's insurance market, life insurance in particular (Lai. 2002; D'arcy and Xia, 2003).

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3. Per capita GDP (PCGDP)

We adopt the per capita GDP to represent the level of regional economic development and expect it has positive effect on life insurance consumption, as quite a number of researches proved. From the perspective of property insurance, previous studies consistently verify GDP among the most important determining factors for the insurance consumption (Beenstock et al., 1988; Browne et al., 2000; Outreville. 1990a; 1990b).

4. Gross Fixed Capital formation: Investment in fixed assets (CAPF)

The variable has a direct impact on production power, urban infrastructure and. in particular, it has an impact on property. We introduce this variable to measure the potential of the local economy and examine whether it influences the demand for non-life insurance. Positive result is expected in this research

5. Per Capita Education Expenditure (PCEDXP)

The individual's high education attainment determines his or her level of risk aversion (Schlag, 2003). leading to higher probability to buy life insurance as Kami and Zilcha (1985; 1986) suggests. Pratt (1964). Arrow (1971), and Szpiro (1985) show that in theory the more risk averse an individual is, the higher the amount insured. We adopt the variable, measured by government expenditure on education per million population, to investigate its influence in our sample and a positive relationship is expected in both lines of insurance, non life and life.

6. Inflation (INFL)

Inflation is the general rise in price levels in a country during a given period of time. When there is inflation, the prices of goods and services will be high meaning that people will have less disposable income. We expect inflation and its volatility to have a negative relationship with life insurance consumption. As life insurance products typically provide monetary benefits over the long term, monetary uncertainty has a substantial negative impact on these products' expected returns. Inflation can also have a disruptive effect on the life insurance industry when interest rate cycles spur disintermediation. These dynamics make inflation an additional encumbrance to the product pricing decisions of life insurers, thus possibly reducing the supply in times of high inflation. During high inflation individuals will spend most of the money on consumption of consumer goods. Savings and investments will be down and so this will have a negative effect on the insurance premium growth.

7. Non- Banking Sector Credit (CRED)

We expect banking sector development to be positively correlated with life insurance consumption. Well functioning banks may increase the confidence consumers have

in other financial institutions e.g. life insurers. They provide insurers with an efficient payment system such as debit cards; credit cards (master Card, Visa electron. etc).Outreville (1996) finds a significantly positive relationship between the financial development and life insurance penetration. We use non-bank institutions credit to the private sector as an indicator for banking sector development. This will also capture the effect of credit or loans to the private sector on the insurance consumption. The non bank credit to the private sector captures the loans and advances given out to the private sector by building societies such as Family Finance, the defunct East Africa Building Society, Equity Building Society, etc, cooperative societies, agricultural credit organizations such as Kenya Farmers Association, Agricultural Development Corporation (ADC) just to mention a few.

8. Number of telephone units used (TELUNT)

This variable can serve as a proxy of the living standard for a given region; it can also reveals the conditions of the local communication channels as well as the power of information transmission in the city in question. Communication convenience has so far never been included in the analysis of the demand for insurance. Wc. here, incorporate it into our regressions to represent the sales condition in the current Kenya. The saying that insurance is sold not to buy is very popular in insurance industry. It is the very case in Kenya because of the low awareness of insurance even among well-educated population. To contact the potential clients easily with low cost is crucial for salespersons to sell policy. Number of telephones used therefore can indicate the level of sales condition, to a great extent. The positive effect is therefore expected.

9. Lending rates (LEND)

Interest rates are the main determinants of the savings and investments.

Researchers have no common opinion about the relationship between savings and demand for life insurance. Rose and Mehr (1980) believe that savings will reduce the life insurance coverage because of it being a protection deductible for surviving dependents. However, Headen and Finley (1974) argues that, on the perspective of

increasing household assets resulting from savings, savings may play a pushing role in life insurance demand. Some other scholars also suggest that the level of savings tells the private household's propensity to save, and therefore also the background condition for the life insurance industry (Schlag. 2003). Schwebler (1984) and Beck and Webb (2003) prove the significant and positive influence of savings on life insurance demand. This study used the lending rate to capture the savings and therefore negative influence of lending rate on insurance demand is expected.

3.3 Estimation   techniques

Equation (2) is estimated by ordinary least squares (OLS). A specification associated with error correction modeling (ECM) is applied. By using cointegration and error correction model, the study established both the short run and long run equilibrium. The appropriate stationary tests for stationarity of all the variables used were performed to ovoid spurious regression results. When the variables were not stationary at levels, they were differenced to achieve their stationarity. Cointegration test for series with higher order of integration was performed.

3.3.1 Stationarity test

It is known that most macroeconomic time series data are non-stationary. That is, are likely to be a trended or integrated and as per definition, the variables may have a mean that changes with >»me and a non-constant variance. This means that working with such variables in their levels will give a high likelihood for spurious results and furthermore no inference can be made since statistical tests like the f-distribution or t-distribution are invalid. So the first step is to test whether the variables are stationary or to test the level of integration through unit root tests.

It has been argued that Dickey-Fuller (DF) test fails to take into account possible autocorrelation in error process. The ordinary least squares (OLS) estimates of the variants of the DF tests will be inefficient if the error term is autocorrelated. As a solution to this problem, this study employed the Augmented Dickey-Fuller (ADF) test of the following form;

$$= 0_O + yT + M\text{-}v,, + P, \overset{"}{\underset{i}{}} + \bullet$$

Where **y, p_o, fi_i and $/3_l$** are parameters estimated.

The ADF tests the null of non-stationarity against alternative of stationarity. The test stops as soon as one is able to reject the null of a unit root.

3.3.2 Cointegration analysis and error correction mechanism

If a variable contains a unit root then it is nonstationary and unless it combines with other nonstationary series to form a cointegration relationship, then the regression involving the series can falsely imply the existence of a meaningful economic relationship. The variables are said to be cointegrated if a linear combination of these variables assumes a lower order of integration. These variables must always be of the same order. When cointegration is established, the relationship between the independent and the dependent variables will be most efficiently represented by an error correction model (see Engle and Granger, 1987). The error correction specification facilitates the analysis of the short run effects on the dependent variable and also suggests the speed of adjustment to long-run equilibrium. This study applied the Augmented Dickey Fuller (ADF) test to the residuals of the statistic cointegration (long run) regression rather than the levels of the series. Following the work of Engle and Granger (1987) the cointegrating regression is specified as;

The residual of the equation **$e,$ = (.y, $-a_0\text{-}a_i z_l$)** is simply the 1(1) series. The residuals from the linear combination of nonstationary series were themselves stationary, hence the study accept that the 1(1) series is cointegrated and the residuals from the cointegrating regression is a valid error correction term which is then built into an error correction model (ECM).

3.3.3 Granger Causation

If cointegration is established then we estimate ECM. Granger (1998) pointed out that if pair of series is co-integrated, then there must be granger causation in at least one direction. Causality, in the Granger sense, is said to occur between groups of given stochastic variables only if the past predicts the present or the future and given relevant information, adding more information improves the predictability of some certain outcome (Ndung'u, 1996). This study used Granger Causality Tests to perform test for causation between a financial intermediation variables and real growth rate of GDP.

3.3.4 Diagnostic tests

Diagnostic tests are typically used as a means of indicating model inadequacy or failure. For example, in the case of a linear regression model which is estimated by OLS. a series of diagnostic tests could be used to indicate whether any of the assumptions required for OLS to be the best linear unbiased estimator (BLUE) appear to be violated. These assumptions include a serially uncorrelated and homoscedastic error term, absence of correlation between the error term and the regressors and correct specification of the model. Applied econometric work can be viewed as consisting of a number of steps, including specification of the model(s), estimation and model evaluation. Diagnostic testing plays an important role in the model evaluation stage of econometric studies (Otto, 1994). This study carried various diagnostic tests including AR for autocorrelation residuals, the ARCH for heteroscedastic errors, formality test for the distribution of the residuals and the RESET test for the regression specification. In addition the CUSUM test for stability is carried.

3.4 Data type and source

Time series data is used for analysis. The data consist of yearly observations of Non bank commercial credit to private sector, total premium volume, telephone units, lending rate, inflation rate, investment, imports and GDP among others. These data are published in the Insurance Annual Report (various issues), Analytical Report on

Mortality, Economic Survey (various issues). Statistical Abstracts (various issues) and other Statistical reports. There are obtained from Central Bank of Kenya. Others were obtained from Central Bureau of Statistics and are published in the yearly economic survey. The sample runs from 1974 to 2004 for all the data.

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CHAPTER FOUR
EMPIRICAL FINDINGS AND DISCUSSION OF RESULTS

4.0   Introduction

This chapter presents the analysis of the empirical results of the study. The chapter commences with the descriptive statistics, which gives the normality test of series used in the analysis among other statistics. Then time series properties of the variable and the regression analysis proceed. Granger causality and the diagnostic tests respectively are presented at the end of this chapter.

4.1   Descriptive   statistics

Before embarking on the details of empirical issues, it's important to examine whether the data exhibits normality. Many economic data are skewed (non-normal), possibly due to the fact that economic data have a clear floor but no definite ceiling. Also it could be the presence of outliers. The table 4.1 gives the summary of the descriptive statistics of the data in this study. The normality test shows that total premium volume, total Population. Per capita GDP. Per Capita Education Expenditure, Non Banking Sector Credit. Lending rates, number of telephone units used and Gross Fixed Capital formation are normally distributed while Inflation is not normally distributed. This is likely to ensure the normality of the residuals forming the long run relationship. However, it's clear that the logarithmic transformation has reduced nbn-normality effect.

Tabic 4.1: Summary of descriptive statistics

	I TOTI'RI M	UK/OOP	I.PITDXP	IXRED	I.CAPF	LPOP	LTELUNT	I.INFL	LLEND
Mean	8 1.1	8 88	6.23	9 33	10.41	3.09	12.65	2.41	2.85
Med	8 59	8 84	6 27	9.63	10 41	3.1	12 86	2 45	2.71
Max	10.25	10 56	7 86	10.64	11 84	3.5	14 01	3.83	4.28
Mm	5.87	7.23	4.59	6 89	8.31	2.56	II 39	0 47	2.08
Std	1 395	1.057	1 056	1 141	1 129	0.273	0.835	0 67	0.502
Skew	-0.338	0.181	0 033	-0 839	-0212	-0 408	-0.043	-0 882	0 698
Kurt	1.86-1	1.712	1 711	2 501	1 725	2.102	1 809	5 066	3.32
J-Be	2 259	2312	2.151	3 957	2.331	1.901	I 841	9 527	2.651
Prob	0.323	0.315	0 341	0 138	0 312	0.387	0.398	0.009*	0.266
Obs	31	31	31	31	31	31	31	31	31

Notes: *Reject hypothesis of normality at 1% level

The descriptive statistics among others do give guide on which of the equations is more able to yield better results and highlight on possible problems to encounter. However there is need to supplement the statistics by more incisive quantitative analysis such as the correlation matrix. The correlation matrix is an important indicator, testing the linear relationship, among the explanatory variables. The matrix also helps to determine the strength of the variables in the model, that is, which variable best explains the relationship in the total premium volume equation. This is important and helps in deciding which variable(s) to drop from the equation. The table 4.2 presents the correlation matrix of the variables at levels.

Table 4.2: Correlation matrix at levels

	LTOTPREM	LPC'GDP	LPCEDXP	LCRED	LCAPF	LPOP	LTELUNT	LINFL	LLEND
LTOTPREM	1								
LPC'GDP	0.97	1							
LPCEDXP	0 97	0 99	1						
LCRED	0 87	0.77	0 81	1					
LCAPF	0 98	0 98	0.98	0 87	1				
LPOP	0.97	0 96	0 96	0.87	0 96	1			
LTELUNT	0 87	0 94	0.94	0.74	0.9	0.89	1		
I.INFL	-0 31	-0.35	-0.33	-0.11	-0.3	-0.24	-0.3	1	
LLEND	0 69	0.6	0 63	0.85	0 72	0.37	0.54	0.07	1

The table above shows that there is relatively high positive correlation between total premium volume and total Population, Per capita GDP, Per Capita Education Expenditure. Non Banking Sector Credit, Lending rates, number of telephone units used and Gross Fixed Capital formation. Only Inflation has negative correlation with total premium volume. There is high correlation between the variables indicating serious problem of Multicollinearity.

4.2   Time series properties

Non-stationarity of time series data has often been regarded as a problem in empirical analysis because working with non-stationary variables lead to spurious regression results from which further inference is meaningless. The First step was therefore to test for stationarity of the variables. The convectional Dickey-Fuller (DF) and Augmented Dickey-Fuller (ADF) tests were used to test for stationary of the series. The results for unit root testing of the variables in levels are presented in the table 4.3.

Table 4.3 Unit root tests

VARIABLE	DF	ADF(2)	ORDER OF INTEGRATION
LNTOTPREM	-10.04	-5.0644	1(1)
LNPCGDP	-7.6043	-5.5503	1(2)
LNPCEDXP	-4.1643	-4.4898	1(1)
LNCRED	-10.141	-7.4858	1(2)
LNCAPF	-6.7733	-7.6745	1(2)
LNPOP	-5.852	-3.9624	1(1)
LNTELUNT	-6.2986	-3.7471	1(1)
LNINFL	-6.8559*	-4.3189	1(1)
LNLEND	-12.076	'-4.5081	1(2)

CRITICAL VALUES FOR AD AND ADF
1%=-4.2826 5%=-3.5614

The results show that no variable is stationary at levels. The variables total premium volume, total Population, Per Capita Education Expenditure, number of telephone units used are stationary after first differencing while the Non Banking Sector Credit, Lending rates, Gross Fixed Capital formation and Per capita GDP were found to be stationary after second differencing.

The next step after finding out the order of integration was to establish whether the non-stationary variables at levels are cointegrated. Differencing of variables to achieve stationarity leads to loss of long-run properties. The concept of cointegration implies that if there is a long-run relationship between two or more non-stationary variables, deviations from this long run path are stationary. To establish this, the Engel-Granger two-step procedure was used to generate residuals from the long-run equation of the non-stationary variables, which were then tested using the DF and ADF tests. The result of cointegrating regression are given below in Table in 4.4

Table 4.4: Cointegrating regression reporting the long run relationship

Dependent Variable: LNTOTPREM				
Included observations: 30 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.01232	1.358834	2.952772	0.0074
DLNPCGDP	0.869348	0.370724	2.644995	0.0142
DLNCRED	8 01E-07	1.80E-05	0.044462	0.9649
DLNCAPF	2.14E-05	1.05E-05	2.02860	0.0548
LNPOP	4.77461	0.471646	10.1233	0.0000
LNTELUNT	013638	0159661	0 85419	0.4022
LNPCEDXP	1 1204	0.50405	2.22206	0 0386
LNINFL	-0.32224	0.112624	-2.86127	0.0091
DLNLEND	-0.0007	0.005108	-0.13703	0.8922
R-squared	0.661316	Mean dependent va		8.519957
Adj. R-squared	0.549008	S.D.dependent var		1 333982
Log likelihood	-1.919638	F-statistic		78.10216
D-W stat	2 072821	Prob(F-statistic)		0.00000

The error term is ECT and is derived from the above cointegrating regression and expressed as;

ECT =LNTOTPREM -4.01232 -0.869348'DLNPCGDP - 8.01 E-07*DLNCRED - 2.14E-05*DLNCAPF - 4.77461*LNPOP - 0 13638*LNTELUNT - 1 1204*LNPCEDXP+ 0.32224*LNINFL + 0.0007*DLNLEND

The long-run relationship for growth and development of insurance industry is thus:

LNTOTPREM = 4.01232 + 0 869348'DLNPCGDP + 8.01 E-07*DLNCRED + 2.14E-05*DLNCAPF + 4 77461'LNPOP + 0 13638*LNTELUNT + 1 1204*LNPCEDXP - 0.32224*LNINFL - 0.0007*DLNLEND

The residuals were found to be stationary at 1% and 5% levels of significance for both tests. Below are the results for stationarity test for the ECT.

ADF Test Statistic	-2.8949
1% Critical Value*	-2.6522
5% Critical Value	-1.954
10% Critical Value	-1 6223

Consequently, an error correction formulation was adopted

4.3 Error Correction Modeling

After accepting the co integration, the next step was to re-specify the equation (9) to include the error correction term (ECM). This term captures the long run relation. It reflects attempts to correct deviations from the long run equilibrium and its coefficient can be interpreted as the speed of adjustment or the amount of disequilibrium transmitted each period to growth. The results of the error correction model are presented in table 4.5 below.

Table 4.5: Error correction model reporting the short run relationship

Dependent Variable: DLNTOTPREM

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.54911	7.810021	3.01524	0.0071
DDLNPCGDP	0.35285	0.152215	2.31833	0.0031
DDLNCRED	-0.01251	0.05657	-0.22118	0.8273
DDLNCAPF	0.06610	0.033429	1.97750	0.0627
DDLNLEND	r -1.13323	12.09221	-1.01982	0.3206
DLNPOP	'2.10297	3.063181	0.68653	0.5007
DLNTELUNT	0.00504	0.001883	2.68120	0.0148
DLNINFL	-0.83515	0.295833	-2.82306	0.0041
DLNPCEDXP	1.01455	0.359714	2.82044	0.0012
ECTF(-1)	-1.12004	0.504057	-2.22206	0.0386
R-squared	0.62128	Mean dependent va		18.037
AdJ.R-squared	0.44189	S.D.dependent var		10.005
Log likelihood	-2.6647	F-statistic		23.463
D-W stat	2.08749	Prob(F-statistic)		0.0010

Model tests
ARCH F=I.9I3|0.1779]   AR-2   F= 1.6924 [0.212071
Normality CHI 2=1. 1822(0.55081   RESET F=2.7493[0.I 137]
CUSUM 5% LEVEL   WHITE TEST F=4.87 [0.115|

All the variables considered in the determination of the insurance industry growth in Kenya have been found to be the way they were hypothesized. The results show Non Banking Sector Credit. Lending rates and total Population are weakly exogenous to total premium volume whereas Per Capita Education Expenditure, number of telephone units used. Gross Fixed Capital formation, inflation and Per capita GDP are not. The coefficients of Per Capita Education Expenditure, number of telephone units used. Gross Fixed Capital formation, inflation and Per capita GDP are highly statistically significant. There is positive effect of capital formation and per capita GDP on insurance growth. A 1% rise in capital formation and per capita GDP leads to 0.06% and 0.35% rise in the insurance growth respectively.

In this study, per capita GDP that represents the level of regional economic development has a positive effect on insurance consumption. This result is consistent with the work of (Been stock et al.. 1988 and Browne et al., 2000). Gross fixed capital formation has a direct impact on production power, urban infrastructure and, in particular, it has an impact on property ownership. With increased capital formation people have high demand for non-life insurance. This positive result is as was expected.

The per capita education expenditure has a positive impact on insurance growth. An increase of 1% per capita education expenditure promotes insurance growth by 1.01%. The individual's high education attainment determines his or her level of risk aversion, leading to higher probability to buy life insurance. This result agree with Pratt (1964) theory that the more risk averse an individual is, the higher the amount insured.

The telephone units consumed are positively related to the insurance industry growth. A unit increase in telephone consumption increases the insurance growth by 0.005%. Telephone consumption reveals the conditions of the local communication channels as well as the power of information transmission in a region. Communication convenience increases the sales condition in the current Kenya. The saying that

insurance is sold not bought is very popular in insurance industry. It is the very case in Kenya because of the low awareness of insurance even among well-educated population. Avenues making it easy to contact the potential clients easily at low cost are very crucial for salespersons to sell an insurance policy.

As expected, the inflation is negatively related to the growth of insurance industry. An increase in inflation by 1% reduces the insurance industry growth by 0.83%. When there is inflation, the prices of goods and services will be high meaning that people will have less disposable income. As life insurance products typically provide monetary benefits over the long term, monetary uncertainty has a substantial negative impact on these products' expected returns. Inflation can also have a disruptive effect on the life insurance industry when interest rate cycles spur disintermediation. These dynamics make inflation an additional encumbrance to the product pricing decisions of life insurers, thus possibly reducing the supply in times of high inflation. During high inflation individuals will spend most of the money on consumption of consumer goods. Savings and investments will be down and so this will have a negative effect on the insurance premium growth. This result agrees with the work of Browne and Kim (1993).

These results confirm that capital formation, inflation, per capital education expenditure, per capita GDP as well as the telephone consumption as major determinants of the growth and development of insurance industry in Kenya.
r .

The lagged error correction term (ECT) included in the model to capture the long-run dynamics between the co integrating series is correctly signed (negative) and statistically significant. The coefficient indicates a speed of adjustment of 112% from actual growth in the previous year to equilibrium rate of insurance growth. This is high and implies that the deviations from the long run equilibrium path are corrected in one period

4.4   Granger   causation

Granger causality tests between total premium volume, the proxy for the growth and development of insurance industry and its determinants, were performed. Table 4.6 reports the test results.

The result suggests that there is unit-directional static relationship coming from determinants such as the non-financial bank credit, capital formation and per capita education expenditure to the growth and development of insurance industry. This implies that there is unit-directional causality from these determinants to growth of total premium volume that is the proxy for insurance industry growth. The test also shows that there is dual causality between the population and the total premium volume. These results are expected and are as per the way they were hypothesized

Table 4.6: Granger Causality Test

Pairwise Granger Causality Tests		
Null Hypothesis:	F-Statistic	Probability
LNPCGDP does not Granger Cause LNTOTPREM	0.95533	0.39884
LNTOTPREM does not Granger Cause LNPCGDP	1.31861	0.2862
Null Hypothesis:	F-Statistic	Probability
LNCRED does not Granger Cause LNTOTPREM	3.58365	0.04347
LNTOTPREM does not Granger Cause LNCRED	1.55888	0.23094
Null Hypothesis:	F-Statistic	Probability
LNCAPF does not Granger Cause LNTOTPREM	5.35068	0.01198
LNTOTPREM does not Granger Cause LNCAPF	1.6837	0.20689
Null Hypothesis:	F-Statistic	Probability
LNTELUNT does not Granger Cause LNTOTPREM	6.43524	0.00579
LNTOTPREM does not Granger Cause LNTELUNT	2.12573	0.14127
Null Hypothesis:	F-Statistic	Probability
LNLEND does not Granger Cause LNTOTPREM	0.8493	0.44017
LNTOTPREM does not Granger Cause LNLEND	0.30647	0.73888
Null Hypothesis: * .	F-Statistic	Probability
LNPOP does not Granger Cause LNTOTPREM	4.1057	0.02927
LNTOTPREM does not Granger Cause LNPOP	3.00736	0.06832
Null Hypothesis:	F-Statistic	Probability
LNPCEDXP does not Granger Cause LNTOTPREM	2.73167	0 08534
LNTOTPREM does not Granger Cause LNPCEDXP	1.19974	0.31871

4.5   Diagnostic   tests

The diagnostic test outcomes are satisfactory-that is AR for autocorrelation residuals, the ARCH for heteroscedastic errors, normality test for the distribution of the residuals and the RESET test for the regression specification. In addition to the above tests. CUSUM test was done. The test obtained revealed that the parameters were stable and model can be used for forecasting at 5% level.

CHAPTER FIVE
SUMMARY, CONCLUSION AND POLICY RECOMMENDATIONS

5.1 Summary

This paper has examined the determinants of growth and development of the insurance industry in Kenya over the period 1974-2004. Using an OLS estimation method, several factors are identified as having a significant effect on growth and development of the insurance industry. Policies that would succeed in addressing these factors and efficiently providing for them would contribute significantly to the growth of the insurance industry in Kenya. The estimated parameters had the expected signs and are all significant. The results obtained in the preceding chapter shows that. Gross fixed capital formation, per capita GDP, inflation, per capita education expenditure and telephone consumption have the expected and significant impact on the total premium volume: the proxy for the growth and development of the insurance industry.

Number of telephone units used affects the premiums in a significant and positive way for the whole sample for the Kenya. The coefficient is positive and statistically significant for the expenditure in the whole sample. The result verifies our expectation that the improvement in communication will encourage the sales of insurance policy in Kenya and therefore promote growth of insurance industry. That is to say, insurance is ejf?y to sell in the regions with more telephones and the sales condition is also a robust explanatory variable for the development of insurance.

The investment in fixed assets is. in statistics, significant and positive for measures of insurance development in the whole sample. This is in harmony with our expectations that more fixed investment in a previous period forecasts the increase of total premiums later. The fact that the importance of fixed investment in the overall economy varies from region to region in Kenya provides a possible explanation for the results. The finding is also important to forecast the growth of insurance sector for the country.

The coefficient of per capita GDP is by and large positive and significant in the regressions with total premium as dependant variable. This is also in harmony with the results from previous studies on insurance consumption in China (Hwang and Gao, 2003). It proves the conclusion that insurance sector will significantly benefit from the dramatic increase of the national economy. In particular, the effect of per capita GDP is significant suggesting that the rise of per capita GDP is actually a fundamental factor for the development of insurance in less developed regions.

Per capita education expenditure is positive and significant in the whole sample in which the total premiums volume is used as a dependent variable. This not only proves the theory (see for instance. Kami and Zilcha, 1985; 1986) and our hypothesis that education attainment is positively related to insurance development, but also supports previous empirical findings (Beck and Webb. 2003). The result indicates that, in Kenya, individuals with higher educational attainment are more likely to buy-insurance.

5.2   CONCLUSIONS

Kenya is in the midst of the transition from planned to market economy, from closed economy to open economy. On the other hand, Kenya is also an economy with big regional difference. Determinants of Kenya's extremely fast development of insurance will definitely mirror the characteristics of the national economy as a whole. This study, relying on data for the whole country from 1974 to 2004, examines the determinarffs of Kenya's insurance growth and development. The study finds some significant results. Per capita GDP, as a measure of wealth for a given region, proves more significant to the development of insurance. Besides, the variables of fixed assets investment and number of telephones that are for the first time incorporated as explanatory variables in empirical investigation, verify their significant influence on Kenya's insurance growth and development. There is a weak relation between lending rates and insurance development because of the low level of life insurance consumption in Kenya. Education expenditure by the government impacts positively and significantly on insurance growth. Inflation has been found to

impact negatively on insurance development and therefore price stability will no doubt promote insurance growth in Kenya. In summery. Kenya's insurance sector will keep growing for the near future mainly owing to her economic development, low level of inflation, literacy level and efficient and effective means of communication (cheap fixed line telephones, cheap mobile phone rates and cheap postal and internet services)

5.3 Policy implications

Growth and development of Kenya's insurance sector is important for future mainly owing to her economic development. Addressing factors affecting insurance sector is crucial. Improvement in the means of communication such as fixed telephone lines, mobile phones and internet will no doubt lead to increased insurance consumption and thus insurance growth. Policy approaches should be geared to strengthening the legal infrastructure, in order to lower costs and risks associated underwriting.

There is need for macroeconomic stability, the establishment of conditions that favor the private investment and adequate insurance supervision that will enhance stability of the sector, crucial for achieving of positive results from insuring process. Macroeconomic stability necessitates consistent macroeconomic policies and in particular financial sector policies.

High inflation has been found to be drawback to insurance industry growth and development. The policymakers should therefore institute macro economic policies that are geared to keepin^nflation at favorable levels.

Government expenditure in education should be increased so that we can attain high literacy level that is very important in insurance consumption. There should also be policies aimed at educating the public on the importance of insurance and especially life insurance that is still very low in Kenya.

Lastly, in order to achieve growth and development of the insurance industry in Kenya, there should policies that are aimed at increasing economic growth as this factor, measured by the per capita gross domestic product in our study, was found to be very significant.

5.4 Limitations of the study and areas for further research

The study has been successful in obtaining its objective. However, the use of aggregate data from CBS and some government publications was noted to be giving conflicting figures for the same variable thereby data lacks relevance and reliability. Different data sources give different data for the same variable. To maintain consistency, the study relied on the data published by the government press.

To judge the growth and development of the insurance industry, data are needed on the market structure, insurance concentration, entry of foreign insurance companies, legal and regulatory framework, underwriting practices and payment systems.

Also the role of the foreign financial systems cannot be ignored for development of the domestic financial system. Hence the analysis on insurance growth and development ought to be extended to incorporate the important linkages between domestic and foreign markets. The level of capital market development in a country is a pointer to the level economic development. It is therefore very important for a study to be undertaken on the role played by insurance industry in Kenya's capital market development. Another area of possible research is the life insurance sub sector. Life insurance premiums are low in Kenya compared to South Africa. What are the factors behind this low consumption rate? Is it the literacy level, insurance awareness level, outdated life insurance products, poor distribution channels or ineffective government [fSlicies?

A balanced insurance development involves growth and development in both life and non life insurance.

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Appendix

Data used in analysis

YEAR	TOTPREM	PCGDP	CRED	CAPE	POP	LEND	PCEDXP	IN HI.	IEI.UNT
1974	354.4	1386 8	987.2	4075 2	12 9	8 0	98 9	16.3	117827 0
1975	4069	1534 4	1073 2	48508	139	8 0	103 8	178	1266110
1976	510 5	1846(1	1409 4	58396	13.8	10.0	116 8	100	136510 0
1977	531 0	2288 6	1771 8	7773.8	143	10.0	134 2	12.7	142723 0
1978	753.8	2263 4	2405 6	10280.2	15.8	100	138 8	126	154915 0
1979	1195 2	2260.2	2934.9	10809 0	15.7	10.0	163 2	8 4	8X3060
1980	1273 8	2579.4	41360	12450.6	16.7	11.0	174.7	12 8	94428.0
1981	1586 8	2678.4	52088	14508 2	17.3	14 0	228.1	12.6	97428 0
1982	20589	2978 2	6710.2	13364.0	21.5	16.0	192.5	223	97071 0
198.1	2121 9	3228 8	7978 4	14349 4	21.2	15.0	208.1	14 6	115433.0
1984	53999	3712 0	10323.6	16143 0	19 5	14 0	267 1	9 1	127610 0
1985	1463 2	3989 2	12290.4	17607 8	202	110	326.0	10 7	3583304
1986	2820 7	4389.0	12858 2	23164.4	211	14.0	375.8	10.5	291627 0
1987	3757.0	4901.6	13961.0	25734 8	218	14 0	389.4	8.7	316050.0
1988	4905.1	5191.6	17595.0	27500.0	224	15.0	449.2	12.3	337006.0
1989	4396 5	6892.0	21216 5	33156.3	214	15.5	527.2	13.5	3X31 16 0
1990	5873.2	7562 0	28474 2	40560.0	22.2	19.0	620.3	15.8	401697 0
1991	64589	8334.0	31960 4	426708	24 5	29.0	589.6	196	430073.0
1992	7493 8	8719 0	353506	43776.8	25.2	30.0	678 8	295	430090 0
1993	10104.4	10394.0	36074 6	75616.4	26.0	72.0	823.1	46.0	445673.0
1994	12873.2	12212.8	40309.4	99542.2	26.7	30.9	1059 0	28 8	469141 0
1995	14621 2	14149.4	41626 2	98441.7	25.2	33.1	897.3	1.6	485X760
1996	15850 3	16992.0	37091.0	104081.6	26.3	34 6	1056.5	9 0	497002 0
1997	18398 5	19820 6	27752.8	107276.5	27.1	30.4	1332.1	112	506932 0
1998	19380 7	213224	287260	1 12863.6	279	27.1	1729 7	6.6	542595.0
1999	21032.2	25202 7	268500	112961.2	29.5	25.2	1690.4	5.8	562182.0
2000	20867 6	32771 4	25965.0	116365.5	29 5	19.6	1847.5	10.0	1208800 0
2001	23196 4	33742 9	16382 0	1237X4 8	30.4	19 5	2142 3	5.8	1068200.0
2002	25912 4	33186 3-	17223 0	124313.2	313	183	2580 7	2.0	1069022.0
2003	28100.5	35491.5	1*5181 0	136566.9	32.2	13.5	2506.7	9.8	1070033.0
2004	28190.0	38392.7	14881.0	138967.4	33.2	13.0	2418 5	116	1070320.0

TOTPREM = Total Premium

PCGDP = per capita

PCEDXP = Per Capita Education

CRED = Hon Ranking Sector

TELUNT = Number of telephone units used

POP = Total Population

CAPF = Gross Fixed Capital formation

INFL = Inflation

LEND = Lending rates

'-NYA1TA   MEMORIAL.
> I6RARV