MIDLANDS STATE UNIVERSITY

FACULTY OF COMMERCE

DEPARTMENT OF BANKING AND FINANCE

RESEARCH TOPIC:

THE APPLICABILITY OF THE LIFE CYCLE HYPOTHESIS THEORY OF SAVINGS TO ZIMBABWE: POST DOLLARISATION

BY

NJABULO X MPOFU

STUDENT NUMBER R104178M

SUPERVISOR: DR L CHIKOKO

BF 406: FINAL DRAFT

This dissertation is submitted in partial fulfilment of the requirements of the Bachelor of Commerce Honours Degree in Banking and Finance in the Department of Banking and Finance at Midlands State University.

MAY 2014

GWERU: ZIMBABWE

APPROVAL FORM

The undersigned certify that they have supervised the student Njabulo Xolisani Mpofu. Dissertation entitled:**The Applicability of the Life Cycle Hypothesis Theory of Savings to Zimbabwe: Post Dollarisation**submitted in partial fulfilment of the requirements of the Bachelor of Commerce (Honours) degree in Banking and Finance at Midlands State University.

....

SUPERVISOR **DATE**

....

CHAIRPERSON **DATE**

....

EXTERNAL EXAMINER **DATE**

RELEASE FORM

NAME OF STUDENT: NJABULO XOLISANI MPOFU

DISSERTATION TITLE: The Applicability of the Life Cycle Hypothesis Theory of Savings to Zimbabwe: Post Dollarisation

DEGREE TITLE: Bachelor of Commerce in Banking and Finance Honours Degree

YEAR THIS DEGREE IS GRANTED: 2014

Permission is hereby granted to the Midlands State University Library to produce single copies of this dissertation and to lend or sell such copies for private, scholarly or scientific research purpose only. The author reserves other publication rights and neither the dissertation nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

SIGNED:

PERMAMENT ADDRESS: Plot 10 Sudan Street
Upper Rangemore
Bulawayo
Zimbabwe

DEDICATIONS

To my late mother Jane Mpofu, my father Nicoh Mpofu, my mom Dr. Flora Todlana, my brothers and sisters Nkanyiso, Nomagugu, Heather, Bhekimpilo and Nkosilathi, and the rest of the Hanyana-Mpofu and Ndlovu family thank you for all the support you have given me over the years and for shaping me into the man l am today. Words can't express my gratitude.

ACKNOWLEDGEMENTS

I would first of all like to thank the Almighty for watching over me and keeping me safe thus far. Above all for giving me a strong heart, patience and will to succeed no matter what life throws at me. It has been a long bumpy road filled with tears and laughter. I cannot count the blessing you have brought into my life. My sincere gratitude goes to my supervisor Dr. L. Chikoko for her patience, commitment, assistance and insightful contributions which lead to the success and timely completion of this study. I would also like to extend my gratitude to the Department of Banking and Finance for their assistance. To my parents l can't thank you enough for all the sacrifices that you have done for me to bring me to this far. 2007 and the years that followed were very tough and l will never forget the sacrifices that you made to bring me where l am today. I thank you for always reminding me that the only inheritance that l can get that no one will ever take from me is a good education. To mum Todlana thank you for all the advice and setting the ball rolling, this study wouldn't have been the same without your valuable insights.

To my best friends, Pholaniand Gugulethuthank you for constantly being the sober voices when l strayed away and for offering emotional support when times were hard. Most of all thank you for the memories. To my class with special mention to Menson, Amen, Hazel, Pamela, Promise, Eric and Tinotenda thank you for all the discussions, ideas and competition.

ABSTRACT

The purpose of this study was to provide banks, economic planners and policy makers with knowledge on individual's saving behaviour so as to assist them in framing appeals accordingly. To achieve this, the study sought to test the applicability of the life cycle hypothesis of saving to Zimbabwe. The life cycle hypothesis of saving is one of the well-known theories thatseek to explain individual's saving behaviour. The study was motived by the lack of depositor confidence and the challenge of accretive transitory deposits coupled by stagnant long term deposits which have faced the country since the introduction of the Multiple Currency System (MCS) despite money supply being on an upward trend. A coalesced of the comparative and survey research design, where data was collected from a sample of 512 respondents drawn from the general public in Bulawayo and Gweru was found to be the most appropriate. Quantitative and qualitative data was collected using a combination of questionnaires, interviews and secondary data from the 2012 national census and Poverty Income Consumption and Expenditure Survey (PICES) 2011/12. This data was analysed using a combination of MS Excel, Stata 12, thematic and content analysis. The results of the study revealed that the major motive for saving during an individual's working years is for the purchase or construction of land and housing. Saving for life after retirement was the fourth most common motive for saving coming after the saving for children's education and the precautionary motive. Furthermore, the results found that the primary source of income during retirement was business, professional and farming profits. In line with the life cycle hypothesis, income followed a 'humped' pattern peaking in middle age. However, income did not exceed consumption in the middle age contrary to the life cycle hypothesis. Moreover, the study revealed that age varies with asset holding in a 'wave' shaped pattern. Despite the actual results suggesting that the life cycle hypothesis is not applicable, the study found that if one goes by people's intentions and attitudes the life cycle hypothesis was applicable in Zimbabwe. Given that the life cycle hypothesis is not applicable in Zimbabwe, banks are therefore advised to frame appeals for the purchase or construction of land and housing for cohorts in the 25-44 year age group. Banks can frame appeals on retirement products to those approaching retirement as this motive only becomes dominant as people approach retirement. Lastly, the study recommends banks to raise awareness of 'pay yourself first' in addition to educating people how to save for retirement.

TABLE OF CONTENTS

LIST OF ACRONYMS

AUD	Australian Dollar
BWP	Botswana Pula
CYN	Chinese Yuan
DSU	Deficit Spending Units
EUR	Euro
GBP	British Pound Sterling
INR	Indian Rupee
JPY	Japanese Yen
LCH	Life Cycle Hypothesis
MCS	Multiple Currency System
PICES	Poverty Income Consumption and Expenditure Survey
RBZ	Reserve Bank of Zimbabwe
ROSCAs	Rotating Savings and Credit Associations
SSU	Surplus Spending Units
USA	United States of America
USD	United States Dollar
ZAR	South African Rand
ZIMSTAT	Zimbabwe National Statistics Agency

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

CHAPTER 1 : INTRODUCTION

1.1 Introduction

Financial institutions through financial intermediation play a pivotal and indispensable role of channelling surplus funds from savers who usually want to withdraw their money at short notice, to those with a deficit of funds who often wish to repay their loans over a long period (Casu, Girardone and Molyneux, 2006). It is through this transformation function that banks bridge the gap between surplus units and deficit units, allocating capital in a productive way to foster and sustain economic growth. However, the intermediary role of banks can only be effectively played in an environment epitomised by liquidity adequacy as most banking activities depend on a bank's ability to provide liquidity to its customers. In Zimbabwe since the adoption of the multiple currency system (MCS), banks have been subdued in their intermediary roles due to persistent liquidity constraints coupled with limited liquidity management instruments, funding sources and the absence of savings and a saving culture among depositors making liquidity risk difficult to manage. The study therefore seeks to test the applicability of the Life Cycle Hypothesis (LCH) in Zimbabwe so as to contribute knowledge on how to promote saving and a saving culture under the prevailing dollarised economic environment.

This chapter lays the foundation to the study by presenting a brief background to explain the origins of the research topic. In addition the chapter covers the problem statement, objectives, research questions and hypothesis of the study. Moreover, the chapter denotes the significance, scope, limitations and assumptions of the study. The chapter concludes by delineating the organisation of the study.

1.2 Background to the Study

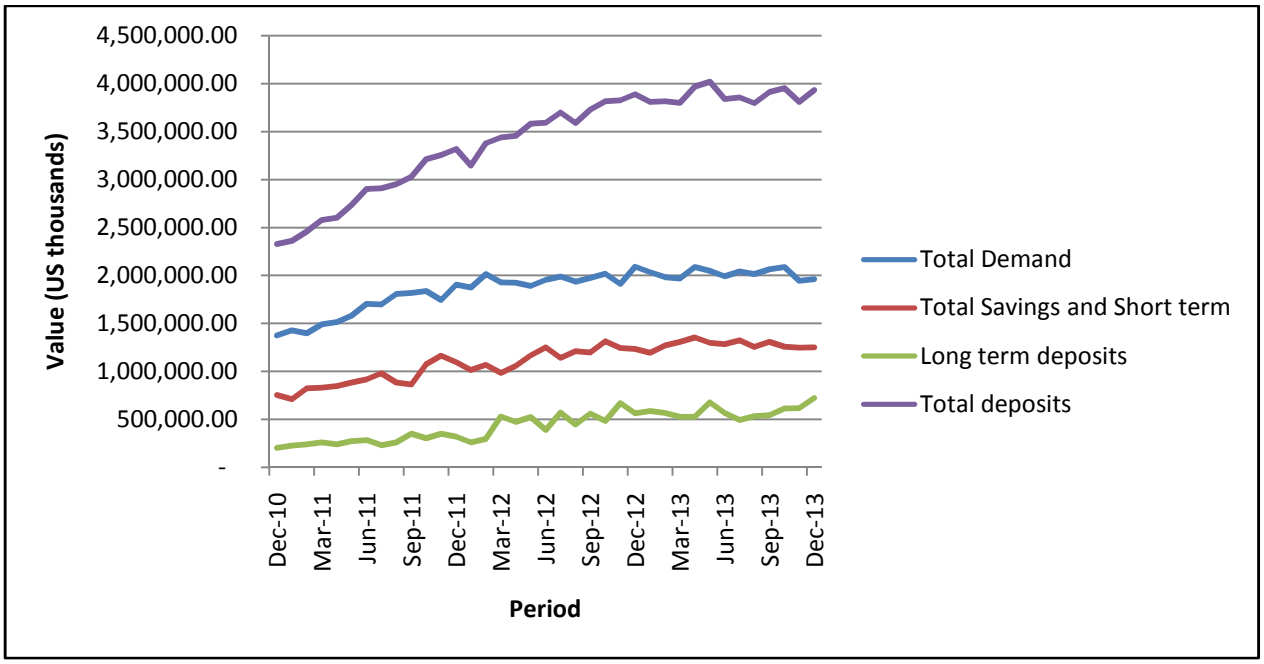
Following almost a decade of macro-economic instability and hyper-inflation, the government of Zimbabwe in February, 2009 adopted a MCS (Reserve Bank of Zimbabwe, 2009). The MCS allows trade to be conducted using major trading currencies, such as, the United States Dollar (USD), British Pound Sterling (GBP), South African Rand (ZAR), Euro (EUR) and the Botswana Pula (BWP), although, settlement in payment systems only takes place in United

States dollars (Ministry of Finance 2010, Reserve Bank of Zimbabwe 2010a). In addition to these currencies, the Reserve Bank of Zimbabwe in line with the Ministry of Finance, in January 2014, allowed individuals and corporates to open and transact using accounts denominated in the Australian Dollar (AUD), Chinese Yuan (CYN), Indian Rupee (INR) and Japanese Yen (JPY) in a bid to strengthen trade and investment ties (Reserve Bank of Zimbabwe, 2014). This system helped to restore price stability by stabilizing month-on-month inflation from unprecedented levels of above 231 million percent in July 2008 (Ministry Of Finance, 2010) to single digit levels, restart financial intermediation by enabling banks to resume their lending functions despite the low deposit base, and impose fiscal discipline in Zimbabwe.

Despite bringing sanity to the financial sector, the multiple-currency system brought several new challenges most importantly, the lack of depositor confidence due to loss aversion phobia after most people lost their life savings in banks during the multiple currency transition period (Chikoko, Le Roux and Dzingirai, 2013). The lack of depositor confidence has seen savings virtually disappearing from the banking sector as people prefer to keep their money under the mattress or other informal savings products. Statistics from the Finscope (2011) survey highlighted that more than 27% of the adult population kept their savings at home instead of using formal financial savings products while 41% of the adult population preferred to use informal mechanisms such as rotating savings and credit associations (ROSCAs) (16%) for managing their finances. Similarly, the Ministry of Finance (2014) pointed out that an estimated US$2 billion, roughly 20% of the economy's money supply was presumed to be circulating outside the formal banking system a clear indication of the lack of confidence in the banking sector. In addition, the same survey showed that an alarming 31% of the Zimbabwean adult population did not save in comparison to a meagre 17% that advocated saving using formal saving products from a bank, demonstrating the fact that there is a lack of depositor confidence in Zimbabwe.

Generally, since the introduction of the MCSbanks have been faced with the challenge of accretive transitory deposits and stagnant long term deposits despite money supply (broad money –M3) being on an upward trend as shown in the diagram below.

Figure 1.1: Monetary Aggregates



Source: Author's Compilation fromRBZ Monthly Economic Reviews (2010-2013)

The Ministry of Finance (2014) and Reserve Bank of Zimbabwe (2014) attributed this development to the lack of saving culture among the country's depositors. Chikoko and Le Roux (2012) found that in Zimbabwe savings deposits contributed only 7% yet current accounts which are transitory in nature contributed 67% of the total deposit base. Furthermore, the majority of depositors withdrew all their funds immediately after receiving their salary. In addition the Ministry of Finance (2014) noted that long term deposits contributed 15% of the total bank deposits. As a result of this transitory nature of deposits, the tendency is that it becomes difficult to manage liquidity risk. The Reserve Bank of Zimbabwe (2014) and similarly, the Ministry of Finance (2014) both appended that the predominance of demand and short-term deposits has constrained the banking sector's ability to provide effective financial intermediation to productive sectors; as it is through long term savings that long term facilities to the productive sectors of the economy are advanced.

To mitigate this challenge, Chikoko and Le Roux (2012) in line with the Reserve Bank of Zimbabwe (2012b) and the Ministry of Finance (2012) suggested the need for banks to come up

with innovative products that will optimistically attract long term saving, prospectively creating a saving culture. However, to design appropriate innovative products and policies which will effectively boost household savings in the economy, it is important for banks, economic planners and policy makers to have a better understanding and appreciation of the saving characteristics of households. One such a way of understanding the saving characteristics of households is through the LCH.

1.3 Problem Statement

Unfortunately, albeit bringing opportunities and sanity to the banking sector and economy at large, the introduction of the MCS ushered in a radically new environment characterised by volatile short-term deposits, loss aversion phobia and persistent liquidity shortages despite money supply being on an upward trend. These challenges have consequently, constrained the intermediary role played by banks as they match the maturity of their assets to liabilities in order to safeguard themselves against liquidity risk thereby unintentionally choking the economy which is in dire need of long term facilities. One then wonders if, the LCH of saving can be used to explain the saving behaviour of households in Zimbabwe and consequently to create savings products which will attract long term savings, successively creating a saving culture.

1.4 Objectives of the Study

The main objective of the study is:

- to test the applicability of the life cycle hypothesis theory of saving to Zimbabwe.

To achieve this main objective the study will pursue the following secondary objectives.

1.4.1 Secondary Objectives

The secondary objectives are:

- to assess the variation of income with age;
- to analyse the variation of asset holding with age;
- to establish the primary motive for saving during working years and,
- to ascertain the primary source of income during retirement.

1.5 Research Questions

The research questions are:

- What is the major motive for saving during an individual's working years?
- What is the primary source of income during retirement?

1.6 Hypothesis

In addition to the research questions, the two hypotheses to be tested are as follows;

Hypothesis (1)

H_0: age-income profile does not progress following a 'hump' shape.

H_a: age-income profile progresses following a 'hump' shape.

Hypothesis (2)

H_0: Individuals do not show a 'humped' pattern of asset holding.

H_a: Individuals show a 'humped' pattern of asset holding.

1.7 Significance of the Study

The banking sector plays a central role in supporting the attainment of economic growth by means of efficient allocation of resources through financial intermediation. That is, transferring resources from Surplus Spending Units (SSU's) to Deficit Spending Units (DSU's). It is important to note that this intermediary role can, only be effectively played in an environment epitomized by adequate sources of funds. Unfortunately, persistent liquidity challenges have gripped the financial sector and the country at large since the adoption of the MCS coupled with the limited liquidity management instruments and funding sources.

Casu, Girardone and Molyneux (2006) and Kahn and Wagner (2010) highlighted that when faced with liquidity challenges potential sources of funds for banks include deposit inflows from households, the redemption of investments, facilities from the interbank market or offshore lines of credit, investment of more capital by the shareholders and lastly, accommodation from the Central Bank through the lender of last resort facility. However, given the subdued activity in the interbank market, risk aversion by shareholders, limited financial instruments to liquidate and access to affordable external lines of credit in conjunction with an undercapitalised Central Bank; deposit inflows from households have become the most viable source of liquidity despite

being limited owing to the lack of a saving culture in the economy and their transitory nature. Conjointly, banks' ability to provide effective intermediation to productive sectors of the economy has been constrained as banks advance short term loans to match the tenor of their deposits.

Against this background, the significance of the study is to provide knowledge on the motives for saving and the behaviour of different age groups in order for banks, economic planners and policy makers to frame appeals accordingly. This knowledge about saving preferences will assist banks in the development and implementation of savings products that will optimistically attract long term savings from the US$2 billion estimated to be circulating outside the formal banking system prospectively creating a saving culture.

In addition, the study aims to provide additional evidence that will assist to settle the controversy concerning the validity and explanatory power of the LCH by adding new insights to the pool of available literature. Several empirical tests of the LCH have been contradictory in many aspects rejecting the theory.

Finally, although extensive empirical tests of the LCH have been conducted using data from the United States, the United Kingdom, Japan, China, Ghana, Nigeria and Kenya to the researcher's knowledge one study has been done in Zimbabwe. Therefore the study aims to close this gap by adding to the pool of available literature in the subject area. The study also aims to determine whether the theory is applicable in an African society particularly Zimbabwe's, with a different culture, set of values, family set-up and monetary system.

1.8 Scope of the Study

The study will test the theory at a microeconomic level using cross-sectional data as extensive empirical tests and literature have been done from a macroeconomic perspective, ignoring the heterogeneity in consumers.Respondents for the study will bedrawn fromZimbabweans over the age of 20 residing in Bulawayo and Gweru in line with the Poverty Income Consumption and Expenditure Survey (PICES) 2011/12 age categories so as to facilitate comparison.

1.9 Limitations of the study

- One of the major limitations of the study is that while empirical tests relied heavily on secondary data from official household databanks to conduct their tests. In Zimbabwe, official household databanks for individual households were unavailable, but only time series data on national aggregate saving, mostly analysed using macro-econometric models premised on the assumption that all households are the same. To mitigate this limitation, the study made use of sample surveys to obtain information required to test the hypotheses.
- The study had no way of valuing respondent's assets and relied on the judgement of the respondent to give the best estimate about the current market value of their assets. In spite of this, the researcher assumed that the estimates are indicative of the relative net worth of the different age groups of the population.

1.10 Assumptions of the Study

The study will be carried out under the following assumptions:

- there is an estimated US$2 billion circulating outside the formal banking system.
- data contained in the Zimbabwe Population Census 2012 is indicative of the current demographic structure.
- respondents will give a fair value of their assets at current market prices.
- the MCS will continue for the duration of this study as this affects respondents saving behaviour.
- respondents over the age of 65 years have retired.

1.11 Definition of Terms

Asset holding – this refers to the durable goods and real and financial assets an individual or household holds less debts. Asset holding, net worth and saving will be used interchangeably in this study.

Banks – refers to commercial banks.

Saving – the act of depositing money into commercial banks for a specified period to earn interest.

Saving culture – the act of depositing money into commercial banks at regular intervals to earn interest.

Savings – funds that are deposited into commercial banks for a specified period to earn interest.

1.12 Summary and Organisation of the Study

The main aim of the chapter was to introduce the study and provide an overview of the study. This was set against a background of loss aversion phobia and volatile deposits which have challenged the banking sector since the introduction of the multiple currency system. In line with this background, the objective of the study is to test the applicability of the LCH theory of saving to Zimbabwe, successively to provide knowledge which will assist banks in the development and implementation of savings products that will optimistically attract long term savings, prospectively creating a saving culture.

The rest of the study is organised as follows: Chapter two will review literature on the life-cycle hypothesis from various promulgated sources such as text books, journals and other published research, evaluating the tests which can be used to test the applicability of the hypothesis. Chapter three describes the methodology used to collect and analyse data. Chapter four analyses the data collected in the study before presenting the results through the use of graphs, tables and diagrams. Finally, chapter five concludes the study by providing a summary of the study in addition to the conclusions, recommendations and suggestions for future research.

CHAPTER 2 : LITERATURE REVIEW

2.1 Introduction

This chapter analyses literature from various promulgated journals, text books and other published research work on savings behaviour and the LCH. In the first section, thechapter will review the various definitions of savings, in order to be clear on the various forms of saving income. There after the chapter will discuss the importance of saving so as to lay a conceptual framework for the LCH before introducing the subject matter in section 2.4. Under this section the chapter will review the basic premises of the LCH in addition to the problems inherent in the methods that have been used to test the LCH. These problems include the definition of the household head and the focus on households. Thereafter, the chapter will discuss the divergent theories that have been brought forward due to the mixed support received by the LCH over the years, namely the precautionary and bequests motive before concluding with a summary of the salient points of the chapter.

2.2 Definition of Saving

In economics saving is traditionally defined as disposable income minus consumption expenditure. However, studies focusing on saving behaviour have used several different forms of saving income to define saving. Lihiku (2006) grouped these forms of saving income into three options, namely formal, semi-formal and informal savings. Formal saving consists of saving in financial assets with banks, while semi-informal saving is saving with a non-bank financial intermediary such as an insurance company. Hannig and Wisniwski (1999) highlighted that informal saving on the other hand could take many different forms. These included lending to friends and family till a future date to earn interest or keeping assets like animals, precious metals, durable goods, real estate and saving with informal financial institutions like rotation saving and credit associations. Although, there are three options of saving income most studies looking at saving behaviour and particularly the LCH have focused on formal savings neglecting the fact that rational savers hold a portfolio combining different saving instruments from all possible avenues of saving. In addition studies focusing solely on formal savings in developing countries poses a bias against the LCH as studies have shown that people in Africa save in informal savings in addition to formal savings (Lihiku 2006; Bendig, Giesbert and Steiner 2009;

Abdelkhalek, Arestoff, El Mekkaoui de Freitas and Mage 2010; Stenga 2010; Niculescu-Aron 2012 and Donkor and Duah 2013).

2.3 The Importance of Saving

The importance of household saving has been widely articulated in various studies in both developed and developing countries due to the present weight of the household sector in total saving (Issahaku 2011, Nwachukwu and Odigie 2011, Donkor and Duah 2013, Kudaisi 2013 and Chikoko et al. 2013).According to Rose (1986) cited in Donkor and Duah (2013) savings are the main determinant of the cost of credit based on the law of scarcity. When deposits are low banks may pay higher interest on deposits so as to attract long term savings. As these banks are pricing loans they will consider their cost of funds, the higher the cost of funds, the higher the cost of credit. If the cost of credit is too high this will successively lower the demand for credit as it may be unsustainable for businesses and individuals to borrow at this rate. This will in turn negatively affect commercial banks' profits as loans dominate most banks financial assets and generate the largest share of operating income.

Secondly, a lack of savings can lead to undue reliance on external sources of financing to cover domestic investment and consumption demand. According to Donkor and Duah (2013)a high level of national savings can increase the amount of national resources available to finance the government's public sector borrowing requirement in turn reducing reliance on offshore sources of financing. In addition governments may use national savings to improve the welfare of its citizens (Chikoko et al., 2013).However, in many instances countries with low domestic savings must borrow offshore to finance their domestic demand, which often results in a debt service burden as these funds come with stringent conditions and depending on a nation's country risk, the interest rate charged may be punitive.

Lastly,modern growth theories have recognised savings are the principal determinant of economic development and growth through their critical role in capital formulation (Nwachukwu and Odigie 2011, Agrawal and Sahoo 2009, Donkor and Duah 2013, Chikoko 2013). This is attributed to the fact that savings are the main source of funds for credit, which is used to finance investments. This is truein cases like Zimbabwe's where domestic savings cannot be

supplemented with reliable steady offshore lines of credit. As a result countries with superior savings often have more funds for investment at their disposal which in turn leads to faster capital accumulation and faster growth. This is in line with the World Bank (1989) report which highlighted that third world countries with higher growth rates were those with superior saving rates.

A study by Donkor and Duah (2013) in Ghana observed that there is a positive relationship between the amount of loan given and the deposits that the bank had. In addition, Donkor and Duah (2013) observed that 93.87% of the changes in the types of loans given could be explained by changes in deposits. Based on Donkor and Duah's (2013) observations it then follows that for a country to increase its levels of investment and in turn economic development it must intensify its saving mobilization. Before this can take place, institutions and regulatory agents who influence the decisions of households, firms and governments must put in place a culture of saving. This requires national economic planners to understand the nature of national saving behaviour so as to design policies that promote saving and investment. However, to design and implement saving instruments and policieswhich will effectively stimulate saving, economic planners need to know the primary motive for saving. This knowledge will assist economic plannersto frame appealsaccordingly. One of the well-known theories that seek to explain individual's saving behaviouris known as the life cycle hypothesis.

2.4 The Life Cycle Hypothesis

Motivated by the discoveries of Kuznets (1946), the life-cycle hypothesis was first advanced by Modigliani and Brumberg (1954) in a bid to explain Kuznets seemingly contradictory findings. Using longitudinal data from 1869 to 1938 Kuznets (1946) observed that the saving rate in the United States of America (USA) remained stable even though people's incomes increased significantly during this period. This implied that the saving rate was constant with economic development over long periods of time.Explaining Kuznets contradictory findings, Modigliani postulated that …… "on average, income tends to dry up well before the termination of life and the preferred allocation of resources over life will typically call for a rate of consumption, after this drying up, on a scale commensurate with earlier consumption. Under these conditions, households must, on average save in the earlier part of their life in order to accumulate a stock of

wealth which will eventually be used to support consumption through dissaving in the later part of their life" Modigliani (1966, p.163). This theory became known as the life-cycle hypothesis.

Basically, the LCH states that consumers seek to smooth out consumption over time, by saving during their working years, so as to finance consumption during retirement when income has declined and maintain the same standard of living as that enjoyed during their working years. Therefore, the broad pattern of the life-cycle will see an individual accumulating wealth with age up to retirement and then dissaving it during retirement to finance their expenditure when income has dried up. Based on this theory Modigliani and Brumberg (1954) and Ando and Modigliani (1963) postulated that the primary motive for saving during an individual's working years is to finance life after retirement.The savings accumulated then become the primary source of income during retirement as an individual's income would have dried up. This could be in the form of property income (rent, interest and dividends)or drawing down of saving deposits (Horioka, 1984). In addition Modigliani (1986) appended that pension benefits accruing to the retired should not represent income earned, but rather a drawing down from the pension wealth accumulated up to retirement. Based on Modigliani (1986) pension benefits similarly represent the drawing down of mandatory savings accumulated during an individual's working years. In addition, to pension benefits, property income and drawing down of saving deposits individuals in developing countries may also rely on the proceeds from the sale of livestock as their primary source of income as this similarly represents the dissaving of accumulated savings.

Basically, this means that if an individual failed to save or invest during their working years for the period after retirement they will have no income. Hence to guard against the situation where they have no income to finance consumption individuals make provision during their working years for the period after retirement. Horioka (1984) described this as the basic premise of the LCH.

Empirical studies have differed on why consumers feel the importance to save for retirement. Earlier studies by Keynes (1936) cited in Mankiw (2002) argued that when people decide how much to consume and how much to save, they consider both the present and the future. The more consumption they enjoy today, the less they will be able to enjoy tomorrow. Therefore, in

making this trade off, households looked ahead to the income they anticipated to receive in the future and to the consumption of goods and services they hoped to be able to afford. Basically this implies that when individuals in their working years look ahead to the period after retirement when income has dried up, they will save a portion of their income now so that they are able to consume the same goods and services in retirement as those enjoyed during their working years. This theory by Keynes (1936) is consistent with later studies by Jappelli (2005) and Deaton (2005) that attributed the motivation to save for retirement to the fact that households seek to maintain, more or less the same standard of living after retirement to the one they enjoyed during their working years.

Other theories have, however,attributed the need to save for retirement to the lengthening life span of consumers (Lydall, 1955). These theories argue that the lengthening life spanhas made consumers more conscious on the importance of saving part of their current income, for use in their old age. With the improvement in living conditions, medical breakthroughs and fewer wars consumers now expect to live till retirement and in many instances several years after.Households as a result may feel the need to make provision for the lengthening life span by saving for retirement especially in the absence of pension reforms and support from their children.

Komiya (1966) in dissent argued that saving for retirement was a weak motive for saving from a sociological view point given that in non- western countries, the best way traditionally to prepare for a comfortable life after retirement was not to save but to bear a sufficient number of children, or to raise adopted children. In turn these children would look after them when they have retired. In line with Komiya (1966), Horioka (1984) presented empirical evidence showing that contrary to the west (USA and Europe) reliance on support from one's children was greater in Japan and Thailand as a striking 15.6% attested to relying on support from their children as their primary source of income after retirement. This was in comparison to 0.3% and 1.0% in the USA and Europe respectively, who attested to relying on support from their children as their primary source of income (Horioka, 1984). Based on these results Horioka (1984) suggested that the life cycle hypothesis is perhaps more applicable in the USA as opposed to non-western countries which rely on family support to a far greater extent.

Later studies by Deaton (1990) showed that because households in developing countries were large compared to those in the USA and Europe, there was a greater tendency for several generations to live together. Deaton (1990) argued that for such households there was no need to save for retirement as resources were shared between workers and dependents, and ownership was passed from parents to children.In line with Deaton (1990), Spio and Groenewald (1996) found strong evidence in South Africa that the need to save for retirement was less necessary as a result of strong family ties.Recent studies have attributed this to the fact that determinants of savings in developing countries differ from those in developed countries (Spio and Groenewald, 1996; Bendig et al. 2009 and Stenga, 2010). Due to thiscontroversysurrounding the LCH,Nwachukwu and Odigie (2011) appended that the LCH mirrored what happens in developed economies with little or no regard for the distinguishing features of developing countries especially those in Africa. In light of this Donkor and Duah (2013) affirmed that theories of saving were created with developed countries in mind.

In line with Deaton (1990), Spio and Groenewald (1996), Nwachukwu and Odigie (2011) and Donkor and Duah (2013) the need to save for retirement in developing countries especially Africa is a very weak motive due to the extended family system andhouseholds strong reliance on family. In African tradition depending on the tribe, it is normally the responsibility of the last born son to stay behind and look after their elderly parents. Other tribes may have the first born son moving in and looking after their elderly parents. Conversely, the parents may move in with their first born son. It is in rare circumstances that they stay with their daughters. In anticipation of this family support young households may not feel the need to save for retirement instead they may feel the need to save in their children so that their children are better able to look after them when they retire. Spio and Groenewald (1996) referred to this as 'saving through children hypothesis'. Despite this evidence, we cannot completely discard the retirement motive given that regardless of their age, individuals show some elements of saving for retirement. For example given that people do not expect to retire one day and have their income dry up, they would not buy houses or other assets as they could simply rent them for the rest of their lives assuming there was no economic benefit from buying the house.

At the macroeconomic perspective the LCH has been used in developed and developing countries to make advanced predictions about the economy as a whole in addition to explaining the diversity in saving rates.At macro level, the LCH maintains that the major determinants of the saving rate are the growth rate of income (per capita income) and the age structure of the population (Agrawal and Sahoo, 2009). According to Modigliani (1966) in a stationary economy with a constant population and productivity, the aggregate saving rate would be zero as the positive saving of the younger households, in their accumulation phase, would be precisely offset by the dissaving of the retired households drawing down their earlier accumulation. However, if income was let to grow as a result of population growth or growth in per capita income the aggregate saving rate would be positive in the absence of bequests.

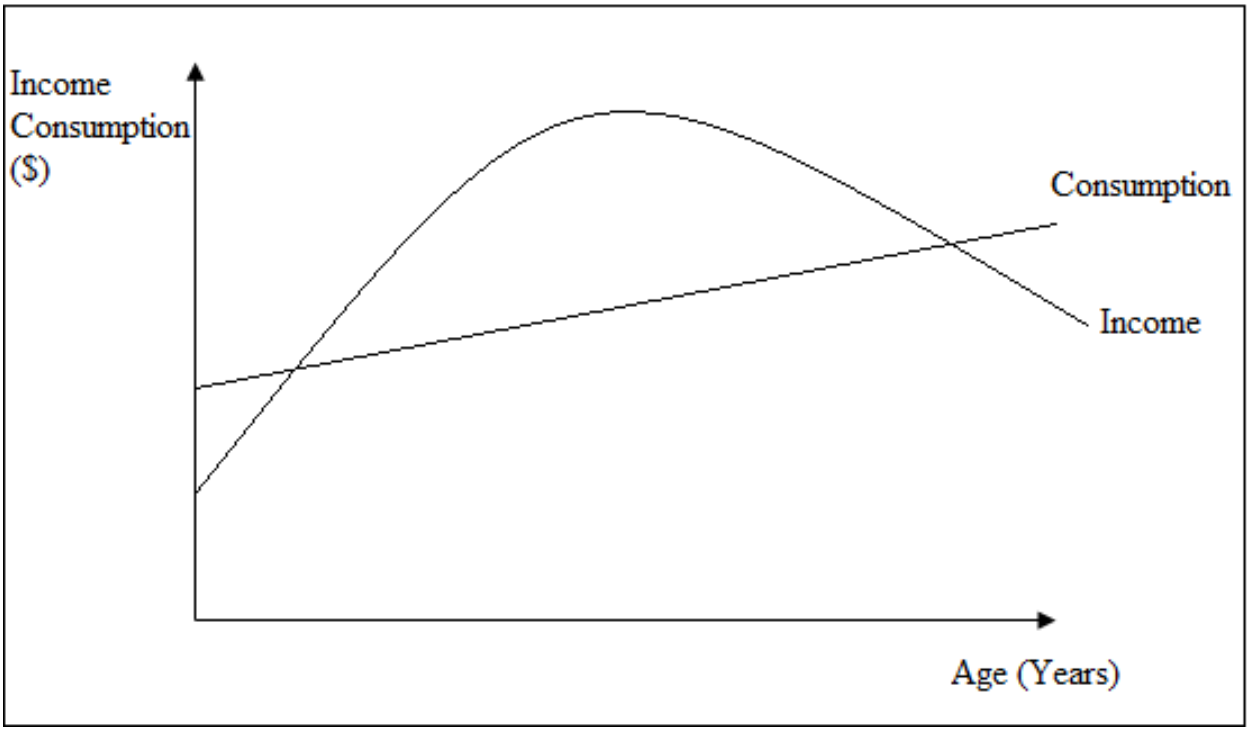
Basically, population growth has got an effect ona country's saving rate through its impact on the ratio of younger households in their accumulation phase to older households in their dissaving phase. An increase in population growth is expected to increase the saving rate as more households in the accumulation phase will be saving compared to the older households who will be dissaving. However, if a country's population growth declines this has the effect of decreasing it's saving rate as the savings of the younger households in their accumulation phase will be outweighed by the dissaving of older households in their dissaving phase. Similarly,achange in productivity can have an effect on a country's saving rate. Assuming the population is constant (no growth), an increase in the average income earned at each age and consequently an increase in aggregate income tends to result in a positive saving rate.This can be attributed to the fact that each successive cohort will enjoy higher life earnings than the preceding ones, as such enjoying a better standard of living. It then follows that each successive cohort will save more than the preceding ones so that they are able to enjoy a higher standard of living in their retirement compared to the currently retired households belonging to a less affluent generation.

2.4.1 The Variation of Income with Age

The LCH postulates that individual's or household's income goes through a cycle as they pass from youth to middle-age, on to old age. Emerging from adolescence, a young adult starts off by going to college or getting some form of training before commencing work. When he starts working his income at first is usually lower than what he will receive later in life, but as he

grows in skill and experience he begins to earn more until some stage where he reaches a peak after which his income begins to fall. Lydall (1955) attributed this decrease in income to the decline in skill, strength, or the onset of periods of illness and unemployment. Eventually as the individual retires income dwindles and he begins to live off wealth accumulated during his working days. This is shown in the diagram below.

Figure 2.1: Variation of Income with Age



Source: Author's Compilation adapted from Lihiku (2006)

The graph shows that at various stages of the life cycle an individual is faced with the puzzle to ensure that present consumption does not exceed income. When income is less than consumption, the individual can either borrow to finance consumption or consume past saving. This decision will depend on the stage of the life cycle the individual is in. When an individual is young without inheritances the only feasible solution may be to borrow to finance consumption when it is greater than income. These borrowings will be serviced in the middle years when an individual's income exceeds consumption. Mbuthia (2011) attributed this increase in income to the fact that during the early years of life, individuals tend to build up their human capital by

investing in education and formal training, hence increasing the probability of higher earnings later in life. Mbuthia (2011) added that by middle age individuals would have built enough human capital hence the reason why income peaked in middle age surpassing consumption. According to Deaton (1993),Spio and Groenewald (1996),Lihiku (2006) and Mbuthia (2011) it is in middle age that individuals save and accumulate assets to consume during retirement, hence savings are positive.

In the later stages of the life cycle when consumption is greater than current income instead of borrowing to finance consumption individuals can consume savings accumulated during their working years so as to smoothen out consumption. Lihiku (2006) appended that this graph shows that even in the absence of time preferences and interest rates, individuals would still borrow and save as they were motivated to save by the desire to even out lifetime consumption expenditure streams. However, the ability of households to smooth out income is dependent on individuals having access to credit or some saving to finance extra expenditure when incomes are low (Ando and Modigliani, 1963). In addition, Mbuthia (2011) argued that income should exceed consumption in the middle age or during the working life to smooth out consumption.

As such numerous studies have affirmed that one of the crucial tests of the LCH is to ascertain whether individuals show a "humped" pattern of income (Lydall 1955; Danziger, van der Gaag, Smolensky and Taussig 1982; Horioka 1984; Hayashi 1986; Shibuya 1987; Modigliani 1988; Deaton 1991; Borsch-Supan 1992; Weil 1994; Butelmann and Gallego 2001and Cagetti 2003).Earlier studies by Lydall (1955) using micro data from the Institute of Statistics at Oxford found that as people grow older their income tends to increase, up to a certain point, after which it began to decline. Despite this, Lydall (1955) was unable to determine the exact point at which income reached its maximum.In line with Lydall (1955),Kelley and Williamson (1968) highlighted that most cross-section studies on household income from developed European and North American countries showed a hump shaped path over the earning span. That is rising sharply to a peak around the 35-54 age range after which it declined moderately thereafter.Later studies by Weil (1994) observed that the broad pattern of income resembled a hump-shape over the course of the life cycle rising rapidly from youth, peaking somewhere in middle age and then declining significantly after retirement. Similarly Jappelli (2005) observed that income increased

significantly with age peaking around 50 years and then declining rapidly after the age of 55. He argued that this reflected the very young age at which some pensions have been awarded in Italy. Despite empirical studies affirming that income follows a hump shape over the course of the life cycle peaking somewhere in the middle age, they have generally been unable to agree at the exact age income peaked. This can be attributed to the various country specific factors that determine cohorts' income.

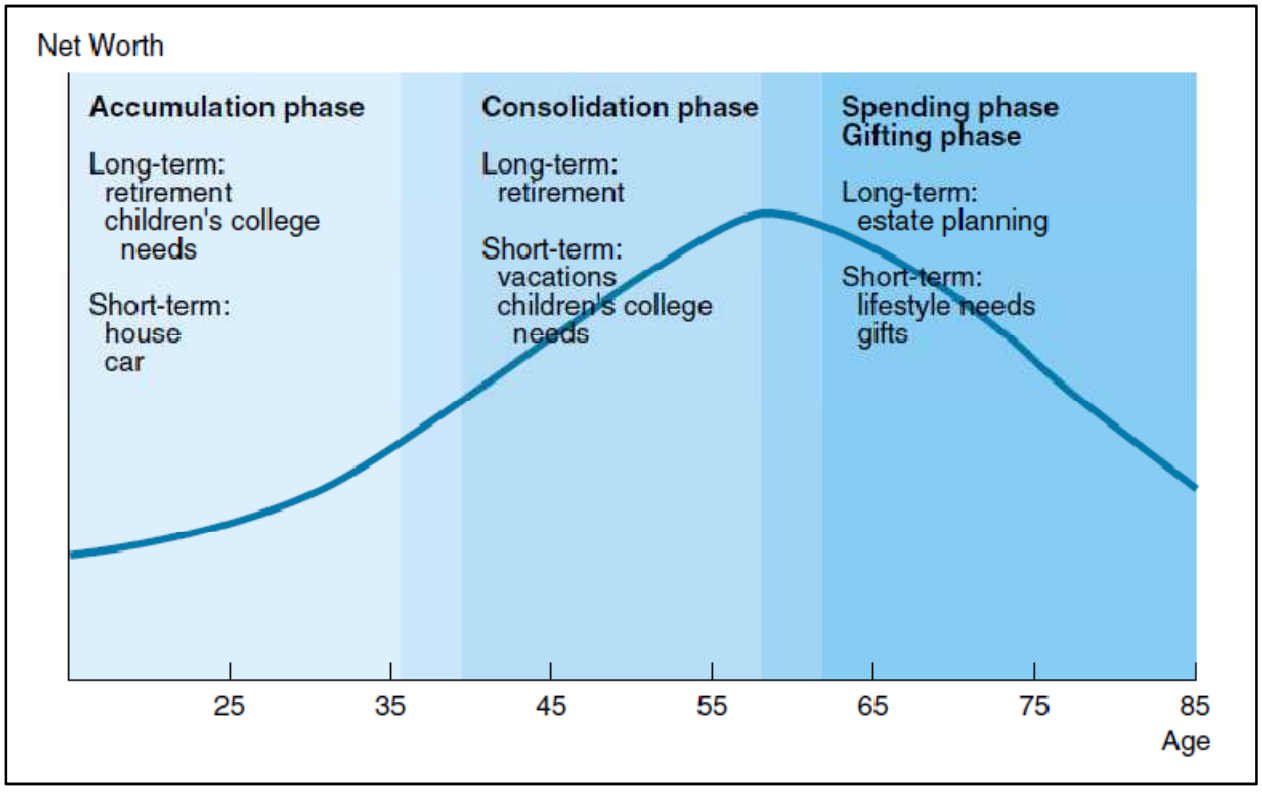
On the other hand, Romer (2001) and Lihiku (2006) argue that because of the low average income and high dependency ratios in developing countries it likely that middle aged cohorts save very little. Lihiku (2006) argued that apart from having low income middle age cohorts in Africa and other developing countries had the burden of looking after children and the elderly. Basically, this has an effect of increasing the family size or dependency ratio which several studies have found to have a negative impact on the saving rate (Agrawal and Sahoo 2009; Abdelkhalek et al. 2010; Issahaku 2011). This can be attributed to the fact that as the dependency ratios increases consumption would in turn increase as the household spends more money on food, clothes, education and utilities.

However, using a logit model to determine the micro econometric determinants of saving behaviour in Zimbabwe, Chikoko et al. (2013) in contrast to empirical studies by Agrawal and Sahoo (2009), Abdelkhalek et al. (2010) and Issahaku (2011) found that an increase in the household size increased the household head's probability of saving.In addition Chikoko et al. (2013) observed that an increase in the number of people employed in the household reduced the probability of the household head saving.However, it is expected that as the number of people employed in a household increase, the household's consumption expenditure will be spread across more people as a result the income of one person will not be completely exhausted by consumption. Ideally, this is supposed to increase the probability of the household head saving.In accession, Lihiku (2006) added that the middle age group in most cases was in the process of acquiring real assets like houses, cars and other real assets as a result were likely to save very little.

2.4.2The Variations in Asset Holdings with Age

One of the basic premiss of the life cycle hypothesis is that individuals asset holding or net worth follows a 'hump' shaped pattern as individuals move from youth to old age. However unlike income, asset holding is postulated to peak at retirement before consumption is greater than income after which it is contended to decline significantly as households dissave the wealth they accumulated during their working years to finance their consumption. Reilly and Brown (2006) affirmed that individuals go through a life cycle moving from the accumulation phase to the consolidation phase and finally the spending and gifting phase.

Figure 2.2: Variation of Asset Holding with Age



Source: Reilly and Brown (2006, 37)

According to Reilly and Brown (2006) individuals in the early-to-middle years of their working careers are in the accumulation phase. Basically individuals in this phase have negative to low net worth as they are either in school or in debt because of car loans and past college loans. Referring back to figure 2.1 individuals in this stage have negative to low net worth because at

this stage consumption is greater than income as a result individuals depend on borrowings to finance their consumption. These borrowings will be repaid in the middle years when income exceeds consumption. Similarly Chikoko et al. (2013) maintained that individuals in this stage tend to have low asset holding as they have relatively low levels of income and high expenditures due to household formation.

When individuals have moved past the mid-point of their working years they are argued to be in the consolidation phase (Reilly and Brown, 2006). Basically at this stage as highlighted in figure 2.1 individuals income will be greater than consumption in additionthey would have repaid the loans they acquired in the accumulation phase. Given that income is greater than consumption at this stage individuals will save for various short term and long term objectives which may include vacations, children's education and retirement. Asset holding is postulated to peak at this stage reaching its maximum at retirement (Chikoko et al, 2013).

Lastly, according to Reilly and Brown (2006) when individuals retire they enter into the spending and gifting phase. Basically in this stage individuals rely on pension benefits and prior investments as their primary source of income as a result their asset holding is expected to decline significantly. Similarly, Chikoko et al. (2013) appended that individuals in this stage dissave their accumulated assets, which are entirely exhausted at death. However, Reilly and Brown (2006) contended that individuals do not dissave their assets significantly in this stage as they want to maintain a significant reserve for uncertainties, in addition to providing financial assistance to relatives or friends.

In line with this empirical studies have affirmed that a critical test of the LCH consists of ascertaining whether individuals show a 'humped' pattern of asset holding, saving during their working years and dissaving during retirement (Dazinger, van der Gaag, Smolensky and Taussig, 1982; Horioka, 1984; Bernheim, 1984; Ando, 1985; Hayashi, 1986; Dekle, 1988; Weil, 1994; Butelmann and Gallego, 2001; Cagetti, 2003; Jappelli, 2005). As a result of this non-linear relationship between asset holding and age, various models testing the LCH have included the variables age and age-squared as it allows them to capture the effects of this relationship. (Lihiku 2006; Mbuthia 2011; Abdelkhalek et al. 2010; Kibet, Mutai, Ouma, Ouma and Ownor 2009 and

Chikoko et al. 2013). In several cases empirical studies have adopted on a linear savings function as it allows them to test whether there is any relationship between the variables in subject, assuming causality (Rogg 2000; Kibet et al. 2009; Issahaku 2011 and Chikoko et al. 2013).

However, in many instances, the results of empirical studies have been contradictory presenting problems for the LCH. Earlier studies by Lydall (1955), Horioka (1984), Hayashi (1986) and Shibuya (1987) found that the mean asset holdings of households did not decline significantly after retirement despite income following a 'hump' shaped pattern suggesting that the LCH has little applicability. A recent study by Bendig et al. (2009) in line with earlier studies observed that there is no significant correlation between the age of the household head and savings in Ghana. Similarly, Issahaku (2011) using a linear savings model in Ghana observed that although there is a positive relationship between age and savings, age did not have a significant effect on saving. In a study of household saving behaviour in Morocco Abdelkhalek et al. (2010) observed that although savings exhibit a hump-shaped relationship with respect to agethe results were not statistically significant in any localities.Using a logit model to come up with a savings predicting model Chikoko et al. (2013) observed that contrary to the LCH,age reduces the probability of the household head saving in Zimbabwe.In the same study Chikoko et al. (2013) using a Poisson regression model observed that age squared was not significant in explaining individuals' saving behaviour in Zimbabwe. These observations suggest that the life cycle hypothesis is not applicable as it postulates that saving varies with age. However, this failure to observe the existence of the LCH can be attributed to the focus on formal savings by empirical studies which pose a systematic bias against the LCH by understating the saving and dissaving of households.

In line with the LCH a study by Lihiku (2006) observed that the age of the household has a negative and significant relationship with savings in Malawi. Similarly, Kibet et al. (2009) using a linear savings function adapted from an empirical model by Rogg (2000) found that age has a negative influence on savings in Kenya, showing that savings diminish with age as households grow towards and beyond retirement. In line with Lihiku (2006) and Kibet et al. (2009), Rehman, Bashir and Faridi (2011) observed that household savings had a negative relationship with age squared in Pakistan affirming that asset holding follows a hump shaped pattern.

2.5 Problems Inherent in Methods Used to Test the Life Cycle Hypothesis

Panoptic studies have presented several reasons as to why the elderly do not dissave to the extent predicted by the hypothesis when using micro data. These reasons will be discussed in turn below.

2.5.1 Definition of Household Head

Firstly, the data was broken down by the age of the household head, where the household head is defined as the household member with the highest income, not as the household head as shown on the family register (Horioka, 1984). The problem with this definition is that it may not capture a true representation of all the elderly individuals as a small proportion of the elderly will qualify as household heads. This can be attributed to the fact that the elderly in developing countries often live with their eldest child or in intergenerational households, and are likely to be retired or earning less than their children. Basically this may lead to a selection bias as the individualsselected may not be the actual household heads but simply the highest earners in the household. This is especially the case in African households where there is an extended family system which results in intergenerational households. An individual might find himself looking after his parents. However that individual does not become the head of the household because they make the highest income as this honour is bestowed to the oldest male member of the family. In addition Danziger et al. (1982) contended that defining the household head as the household member with the highest incomecould result in a selection bias as, the elderly the study observed saving may be the unrepresentative survivors of a larger group who now live in nursing homes or as dependents in households headed by their children or relatives.

On the other hand, Hayashi (1986) argued that this definition poses a sampling bias, as the older household heads of extended families may still dominate their sons in terms of income. As a result, the income and saving (or dissaving) of the younger individuals would not be captured in the study thereby preventing the objective consideration of the life-cycle hypothesis. A solution to this would be to study the behaviour of individual's as opposed to that of the household head. In addition as much as the number of members in the household can affect and influence an individual's saving, an individual may still choose to save a portion of their income for their own personal reasons, hence the need to study an individual's behaviour.

2.5.2 Focus on Households

Secondly, the data from household databanks pertained to households rather than to individuals. As a result, Horioka (1984) argued that the data may not be accurate because it includes the income and saving of other household members. The problem with this is that it may distort the dissaving shown by the retired elderly household head as the retiree's dissaving is offset by the saving being done by other household members. Swartz, Danzinger, and Smolensky (1984) cited in Dekle (1988) suggested that unconstrained by income, the elderly preferred to be independent. As such looking at households posed a selection bias as the retired elderly living in intergenerational families may not be counted in the sample, while whose who were counted as the elderly represented the rich minority who could afford to be independent. In addition, given that the elderly in developing countries often live in intergenerational households', studies pertaining to households pose a net wealth bias as the elderly often imposesubstantial costs on the younger family which would go unaccounted for if the study focused on households. It then follows that in order to observe the parent's dissaving of wealth holdings these costs have to be accounted for as part of the parent's consumption by focusing on individuals rather than households. Similarly, Dekle (1988)appended that the failure to account for these costs as consumption of the elderly living in intergenerational households would result in 'net wealth biases'implying that there is less chance of observing dissaving by the elderly if studies focus on households.

2.6 Divergence of the Life Cycle Hypothesis

The LCH has over the years received mixed support empirically in microeconomic studies due to its inaptitude to support the basic premise of the hypothesis. Numerous studies against this background have brought forward extensions to the original hypotheses postulated by Modigliani and Brumberg (1954) to elucidate this divergence (Davies 1981; Bernheim 1984; Hubbard 1984; Skinner 1988; Deaton 1989; Deaton 1990; Deaton 1991; Weil 1994; Butelmann and Gallego 2001; Cagetti 2003; Mody, Ohnsorge and Sandri 2012 and Niculescu-Aron 2012)

2.6.1 Precautionary Motive for Saving

In early studies to provide an explanation why the LCH fails to explain the situation in developing countries Deaton (1989), Deaton (1990) and Deaton (1991) suggested that when

faced with borrowing constraints and the case of small uncertain and unstable incomes the basic premise for holding assets becomes precautionary. Deaton (1990) argued that this was because individuals were willing to give up large amounts of current consumption where possible so as to prepare for possible disasters, even if those disasters were few and far between. Deaton (1990) added that because income in developing countries was derived mainly from agriculture it was inherently uncertain due to the possibility of extended droughts. In line with this Deaton (1990) suggested that the primary motive for saving was for precautionary reasons as in such periods (drought and famine), assets could be converted to food. Against this background, Deaton (1991) argued that, societies in which borrowing constraints and higher levels of income variance are common, saving rates were prone to be higher. However, this is far from the truth in societies such as those in developing countries where there is high income uncertainty due to reliance on agriculture coupled by political and economic uncertainty in addition to limited lines of credit. Given these conditions we should have higher saving rates in developing countries but this is not the case.

In line with Deaton (1989), Deaton (1990) and Deaton (1991) later studies by Cagetti (2003) added that because households were subjected to several risks such as fluctuations in earnings, deterioration in health and other inconceivable circumstances, often with limited or no markets to insure themselves against these risks. Households needed to have contingency plans to self-insure themselves against these risks. Mody et al. (2012) appended that one way households could self-insure themselves was through the accumulation of a buffer stock of wealth. In rural areas this often takes the form of maize stored in silos harvested from the previous season. Household use this maize to smooth out and stabilize their consumption in the face of these risks. It is the hopes of households that these stocks will carry them through to the next agricultural season.

However, given that income in developing countries is derived from agriculture and faces uncertainty due to the possibility of extended droughts, disease and pest outbreaks this type of insurance is unlikely to safely insure the household. Under such settings even if there are multiple earners in the household and buffer stocks of wealth these will not provide much protection as all the earners are dependent on local agriculture. This results in the buffer stock

being quickly decumulated as households try to smoothen out the effects of the drought or famine.

Recent studies by Mody et al. (2012) have similarly suggested that the precautionary motive is still valid in explaining the primary motive why people save. According to Mody et al. (2012) one of the reasons people save for precautionary reasons is because interest rates for borrowing are uncertain and in many instances may be punitive so in order to minimise their costs households may forego high current consumption and save. This could be particularly true in developing countries like Zimbabwe where the cost of credit is unrealistically high. Given that households may be unable to afford these interest rates or find them unsustainable. They may decide to save now to prepare for any outcome (such as the death or urgent operation of a close family member) that would have otherwise required them to borrow money. However, the implication of this reason is that savings are positively correlated with interest rates on borrowings. The effect of this implication is that countries where there is high borrowing rates should consequently have higher saving rates than other parts of the world with lower saving rates. However, this is not the case.

Early studies by Davies (1981), Hubbard (1984), Bernheim (1984) and Weil (1994) suggested that people may save for precautionary reasons due to uncertainty and perpetuation of the span of life. This was after their studies observed that although the average wealth for couples did not decline significantly, the average wealth among elderly singles declined significantly. Later studies by Cagetti (2003) attributed this to the fact that it was high likely that one spouse may die before the other, as such saving decisions were made considering the welfare of the surviving partner. In line with the precautionary motive for saving a recent study by Niculescu-Aron (2012) argued that households in the basic LCH model base their decisions on future events (such as their future income, their time of death and interest rates) which were assumed to be known. However, in reality these future events were uncertain and individuals would want to provision for this uncertainty. Basically, as a result of this uncertainty of life, risk aversion and the fear that the surviving spouse may run out of wealth could force couples to save more even during retirement. This could explain why single individuals ran down their accumulated wealth significantly in comparison to couples.

2.6.2 Bequests Motive for Saving

In an endeavour to solve the puzzle why the retired elderly do not dissave significantly in some cases exhibiting positive saving, studies have presented an extension to the original LCH theory advanced by Modigliani and Brumberg (1954). Hayashi (1986) and later studies by Fan (2006) postulated that bequests and not the life-cycle motive for saving is the paramount motive for saving. Hayashi (1986) based this postulation on his conclusion that the LCH does not apply in Japan, after observing that the elderly in Japan do not dissave their assets during retirement leaving substantial bequests to their children. Despite this, Shibuya (1987) argued that this observation does not reject the applicability of the LCH in Japan. Shibuya (1987) argued that since the elderly were typically supported by their children during retirement, the LCH should not be rejected on the basis of bequests. Shibuya (1987) added that since the elderly live with their children, in essence they were borrowing from their children to finance their living expenses during retirements. Bequests at the time of death could be seen as a way of repaying their children for looking after them during retirement. Thereby explaining why the elderly do not dissave. In line with Shibuya (1987)'s conclusions, Dekle (1988) using the 1979 Prime Minister's Office Opinion Survey on inheritance observed that 78.3 percent of the elderly left all their bequest to the child who took care of them. Dekle (1988) attributed this to the social convention in Japan where the elderly bequeath almost all their wealth to the child who takes care of them.

On the other hand, Fan (2006) observed that households with higher life income saved more in order to leave more bequests to their children, who were likely to receive lower incomes than they did. This can be attributed to the fact that parents by instinct want the best for their children and in addition want the family name to survive even after their death. So to secure their children's future who may receive a lower income than they did and secure the family name parents may save to leave behind bequests to their children.

Despite this, the bequests motive of saving has over the years received a lot of criticism. Earlier studies by Modigliani (1988) argued that the retired elderly do not spend all their accumulated wealth due to uncertainty in relation to the age of death and health expenditures. As a consequence bequests represent unintended inheritances as people elude the possibility of dying

with a negative net worth. In line with Modigliani (1988) later studies by Jappelli (2005) maintained that given life's uncertainties, bequests represented unintended legacies from the holding of wealth for precautionary reasons by the risk-averse elderly. Jappelli (2005) argued that given the perpetuation of the span of life, the elderly preferred not to run down their assets to zero in order to self-insure against the possibility of the surviving partner running out of wealth. In addition, Jappelli (2005) echoed Dekle (1988) and Modigliani (1988) affirming that the lack of dissaving did not prove the existence of the bequest motive citing that the elderly may be holding their wealth intact against the risk of unanticipated medical expenses or living an unexpectedly long life, as such bequests represented unintended inheritances. In an earlier study Modigliani's (1988)argued that if the true bequest motive held, then retired households with living children should have more wealth and save more than childless ones. Contrarily, Modigliani (1988) found that, those with children had less wealth. This observation was in line with Projector and Weiss (1964) who found that only 3% of the population in the USAsavedto provide an estate for the family.

2.7 Summary

The focus of this chapter was to give an in-depth analysis of the various promulgated literature and studies on the LCH. In order to provide a conceptual framework, the chapter began by reviewing the various forms of saving income namely formal, semi-formal and informal savings, in addition to highlighting the importance of household saving. Basically, the importance of household savings emanates from the fact that savings are the main source of funds for financial institutions and have been recognised as the principal determinant of economic development and growth through their critical role in capital formulation. Given the importance of savings the chapter subsequently explored one of the well-known theories that seek to explain household saving behaviour.

The theory known as the LCH, postulates that the main reason households save during their working years, is to finance life after retirement when income has declined significantly. Their main intention being to smooth out consumption and maintain the same standard of living as that enjoyed during their working years. Taking the form of pension benefits, property income,

proceeds from the sale of assets and drawing down of saving these accumulated savings become the primary source of income during retirement.

Furthermore, the chapter discussed the various tests to determine the applicability of the LCH. These consist of ascertaining whether average income follows a 'hump' shaped pattern peaking in middle age where it is theorised to exceed consumption before decreasing due to the decline in skill, strength, or the onset of periods of illness, unemployment and retirement. As a result of this decline in income, an individual's asset holding is similarly theorised to be hump shaped peaking at retirement before declining significantly as households dissave the wealth they accumulated during their working years to finance their consumption. Other tests include establishing the primary motive for saving during an individual's working years and their primary source of income after retirement.

Given the failure of panoptic studies to observe the dissaving of the elderly as postulated by the LCH the chapter reviewed the problems inherent in the methods used to test the applicability of the LCH. These problems include the definition of the household head and the focus on households which result in selection and net worth bias respectively. Lastly, the chapter looked at the divergent theories namely the precautionary and bequests motive brought forward to elucidate the inaptitude of microeconomic studies to support the basic premise of the LCH.

The next chapter focuses on the research methodology and delineates the methods used to carry out the research. The chapter also addresses how these methods will be tested for validity and reliability before discussing how the data will be analysed and presented in chapter for.

CHAPTER 3 : RESEARCH METHODOLOGY

3.1 Introduction

This chapter maps out the methods utilised in the study to test the applicability of the life cycle hypothesis theory of saving to Zimbabwe. The chapter looks at how the research was designed and outlines the methods of data collections while highlighting why each method was appropriate for the study. Furthermore, the chapter provides an overview of how the sampling frame was defined and sampled in order to come up with a sample that can mirror the whole population. Moreover, the chapter will address how the data collection methods were tested for validity and reliability before providing a schematic of how data will be analysed and presented in chapter four.

3.2 Research Design

In order to determine the applicability of the life cycle hypothesis, a blend of the comparative and survey research design using cross sectional data was considered to be the most suitable. The comparative research design was employed as it allows the saving behaviour of cohorts to be compared at different stages of the life cycle. The study will compare the income and asset holding of cohorts who are between the age of 20 and 65 to those who above the age of 65 given that the age of retirement in Zimbabwe is 65. In addition, the study will use cross tabulations to compare the asset holding of cohorts who have retired and those who have not reached retirement age. This will enable the researcher to assess the variation of income and asset holding with age. Furthermore, a survey research design was employed in order to establish the primary motive for saving and the major source of income during retirement, in addition to ascertaining whether the branching life cycle hypothesis theories are applicable in Zimbabwe.

3.3 Research Population

The population in the study comprised of Zimbabweans who are 20 years and older residing in Bulawayo and Gweru in line with the Poverty Income Consumption and Expenditure Survey (PICES) 2011/12 age categories so as to facilitate comparison. According to the Zimbabwe National Statistics Agency (ZIMSTAT) 2012 national census, Bulawayo and Gweru have a population of 653,337 and 157,865 respectively. This gives the study a sampling frame of 811,202 people. The population for the semi-structured interviews will similarly consist of

individuals drawn from the general public in Bulawayo and Gweru so as to uncover motivations and attitudes that may not have been covered in the survey questionnaire.

3.4 Research Sample

In order to produce a representative sample which mirrors the major characteristics of the sampling frame, the study employed quota sampling to draw respondents for the survey questionnaire. Given that the study seeks to determine the variation of savings behaviour with age respondents were selected into the sample on the basis of age and gender. To do this the researcher made use of the 2012 national census to determine what proportion of each gender fell into different age groups in each city. This enabled the researcher to collect a sample with the same proportions as the national population.

The advantages of quota sampling are that it is easier to implement than random sampling methods and it does not require a sampling frame. However, the disadvantage of this sampling design is that there is a possibility of bias creeping in as some units in the population may have a higher chance of being selected or not selected.

Based on Saunders, Lewis and Thornhill (2011), the minimum sample size required to achieve a 95% confidence level with a 5% margin of error for a population of 811,202 (653,337+157,865) was estimated at 384. Given that a 100 per cent response rate is unlikely, a provision to ensure sufficient responses for the margin of error was created. Given that the survey will be administered face to face the researcher expected a response rate of 75%. As a result the actual sample size required was calculated to be 512. This sample size was split between Bulawayo and Gweru according to the weights of their population so as not to distort the distribution of the population between the cities.

In accession, the study used judgemental sampling to draw interviewees from the sampling frame who the researcher judged to be suitable respondents for the study or looked most helpful. However, the interviews did not have a predetermined sample size; instead interviewees were interviewed until the researcher began to obtain the same responses from different respondents.

3.5 Data Collection Methods and Instruments

The study relied on two research instruments to collect primary qualitative and quantitative data, that is, a survey questionnaire and semi structured interviews. In addition the study made use of secondary data from the 2012 national census and PICES 2011/12 to collect data on the variation of income with age.

3.5.1 Primary Data

The study collected raw primary data from the general public using survey questionnaires and semi-structured interviews respectively. Given the absence of official household data banks in Zimbabwe, a survey questionnaire was circulated to a sample drawn from the general public. The main purpose of using questionnaires' is to obtain information that is not already available in written or computerised form. After collecting data using survey questionnaires, interviews were carried out with the general public in Bulawayo and Gweru in order to complement the survey questionnaires. This enabled the researcher to have an appreciation of the primary motive why people saved during their working years and the primary source of income during retirement.

3.5.1.1 Survey Questionnaire

The study used one set of questionnaire to elicit specific information from the sample of respondents who were still working and those who were retired. This enabled the researcher to compare the responses between the two subgroups as they were presented with the same questions in the same order. In addition, the questionnaires contained closed-ended questions so as to allow easier coding and aggregation of the responses. Basically the questionnaire sought to address the following issues: the various types of assets people are saving in at various stages of the life cycle, the primary motive for saving during one's working years and lastly, the primary source of income during retirement.

The advantage of using questionnaires is that it allows the researcher to establish rapport and motivate respondents. This will enable the researcher to increase the likely response rate and clarify any doubts that the respondent might have. However, the disadvantage is there is a greater possibility of bias, as the researcher or other environmental variables may influence the way the respondent answers. To mitigate this response error, the researcher provided a ballot box so that

respondents can fold and cast their questionnaires. This created a sense of confidentiality among the respondents.

3.5.1.2 Semi-Structured Interview

In order to complement the survey questionnaires, the study employed semi-structured interviews with the general public to fill the gaps left by questionnaires in addition to validating the findings from questionnaires. The advantage of using interviews is that they often try to uncover underlying motivations and attitudes that may not have been covered in other primary data collections such as questionnaires. However, the disadvantage of interviews it that it may be harder to compare responses obtained, as participants may use different terms or expressions to explain the same phenomenon.

Before conducting the interviews the researcher pre-tested the entire interview process and analysis through the use of peer reviews from friends and colleagues. After which the researcher was also interviewed by his peers using the same interview schedule. This allowed the researcher to determine how long it takes to conduct the interview and which parts of the interview are ambiguous. Moreover, it allowed the researcher to practice questioning in order to build skills, awareness and improve performance.

When conducting the interviews the researcher made use of a predetermined list of themes and questions to be covered in addition to a developmental approach where each interview builds on ideas derived from previous interviews held with other interviewees. This allowed interviews to achieve a cumulative effect. In accession the sequence of questions to be covered was varied depending on the flow of the conversation with the researcher probing points of interest so as to gather in-depth responses that reflect the underlying motivations and attitudes of the interviewee. On average the interviews lasted 10-15 minutes and were recorded in instances where the interviewees provided their consent. In instances where the interviewees didn't provide their consent the researcher jotted down the salient points of the interview.

3.5.2 Secondary Data

In addition to primary data the study relied on external secondary data from the 2012 national census and PICES 2011/12. This data assisted in partly answering the research objectives consequently reducing the need for primary data. Basically it is often more cost and time effective to analyse secondary data before collecting primary data, as it provides background information that can be used for the study thereby reducing the amount of primary data that the researcher would have to collect. In addition the use of secondary data can provide comparative data with which sample surveys can be compared against to assess the representativeness of the total population. However, the disadvantage of using secondary data is that it may not be up-to-date. In Zimbabwe, a census is carried out every 10 years as a result the latest census data available was reported in 2012. However, the researcher assumed that the data contained in the 2012 census is indicative of the current demographic structure.

3.6 Validation and Reliability Tests

In order to assess the validity and reliability of the research instruments, the researcher first consulted with friends, colleagues, people of diverse opinions and experts, such as the supervisor to assess the clarity of instructions and questions. This enabled the researcher to refine the research instruments by making some minor changes to the wording and sequence of questions so that they evoke the same meaning intended by the researcher. In addition to ensuring that questions are relevant, do not suggest particular answers that the researcher wants and flow from one question to another. Moreover, the researcher carried out a pilot study in order to determine which questions respondents felt uneasy to answer and to assess the capability to analyse the data obtained. The above mentioned steps enabled the researcher to evaluate the research instruments face, content and construct validity. To test for reliability the questionnaire and interview guide were embedded with questions to test for internal consistency.

3.7 Data Presentation and Analysis Plan

The study will make use of both qualitative and quantitative data analysis techniques. Quantitative data from questionnaires will be analysed using statistical analysis in Stata 12 and MS Excel in order to produce probabilistic and statistical estimates of numerical values. These will be presented using a series of cross tabulations, graphs and charts to facilitate comparison

between cohorts at various stages of the life cycle. Moreover, the study will employ the chi-square test to determine the probability that there is a relationship between asset holding and age. Qualitative data from interviews will initially be transformed into an analysable form by summarising the recordings into a transcript. Subsequently the data will be analysed using content analysis. This method focuses on observing the frequency of specific words or phrases in the transcript. In addition to content analysis the study will also rely on thematic analysis. This is a qualitative data analysis technique in which the researcher develops a coding system peculiar to them, based on a coding protocol. This data will be presented and analysed separately in chapter four.

3.8 Summary

This chapter presented the methodology used to test the research questions and hypothesis developed in chapter one. The study undertook a coalesced of the comparative and survey research design in order to compare the behaviour of cohorts before and after retirement in addition to explaining why cohorts displayed certain behaviour. The research population comprised of the general public in Bulawayo and Gweru. Furthermore, the study employed quota sampling to draw a sample of respondents for the survey questionnaire and judgemental sampling to select interviewees from the sampling frame. Initially data was collected using a questionnaire from the general public. After which to complement the questionnaire, information was collected from the general public using a semi-structured interview. The chapter also gave an overview of how the research instruments were tested for reliability and validity before outlining how the data collected will be analysed and presented in chapter four.

CHAPTER 4 : DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter will focus on the presentation, interpretation and analysis of the data collected in the study. The results will be systematically presented according to the research methodology devised in chapter three and in the sequence of the research questions and hypothesis outlined in chapter one. Stata 12 and Microsoft Excel were used to aggregate responses from questionnaires and perform statistical analysis. These responses will be presented using a series of cross tabulations, graphs and charts. In accession content analysis and thematic analysis were used to analyse the qualitative data from interviews.

4.2 Analysis of Response Rates

From the 512 questionnaires that were distributed using quota sampling, a total of 483 questionnaires were returned. However, 36 questionnaires were partly filled out or unreliable and were therefore not suitable for use. This resulted in 447 usable questionnaires or a response rate of 87.3%. According to Saunders et al. (2011) in order to mirror a population of 811,202 with a 95% confidence level and 5% margin a sample minimum sample size of 384 is required. Since the usable responses were above the minimum sample size of 384 as suggested by Saunders et al. (2011) the sample was considered a statistical representation of the sampling frame.

4.3 Demographic Characteristics of Respondents

The descriptive statistics of the sample were obtained from tabulations and summary statistics using Stata 12. The results are presented below in table 4.1. The results show that, on average the age of respondents was 41.5 years with a standard deviation of 14.6 years. This shows that the majority of respondents were still in their working years or accumulation phase. Furthermore, given that the majority of respondents were 38 years old, which is in the middle age, there is high potential for savings mobilisation in Bulawayo and Gweru, as savings are hypothesized to be positive in this stage. According to the life cycle hypothesis, savings are positive in the middle age as income is expected to be greater than consumption (Ando and Modigliani, 1963).

Table 4.1: Descriptive Statistics of Demographic Characteristics

Variable	Observation	Mean	Std. Dev.	Min	Median	Max

Age	447	41.5127	14.62274	20	38	77
Income	447	$560.0734	$664.2859	$0	$400	$5000
Expenditure	447	$426.1479	$351.3794	$25	$377.50	$2000
Savings	447	$142.5728	$626.1183	-$1500	$70	$4500
Dependents	447	3.48062	2.152601	0	3	11
Household Size	447	5.027972	1.930852	1	5	11
Children	447	2.525	1.868799	0	2	9

Source: Raw Data

The average income for the sample was $560 with the majority of the respondents earning an income of $400. Comparison with the Poverty Income Consumption and Expenditure Survey (PICES) 2011/12 which reported the average income in Zimbabwe to be $298.33 shows that the average income of the sample is not representative of the total population. This isunlikely to seriously affect the researcher's appreciation of the variation of income,as the study will complement primary data from the survey with secondary data from the PICES 2011/12. In addition the study observed that the average amount of expenditure was $426.15 with the majority spending $377.50. Given that this is less than income there is potential for savings mobilisation as cohorts are not exhausting all their income on consumption. The average saving level for the respondents was $142.57 with the majority saving $70. The low saving rate can be attributed to low incomes coupled by high consumption as a result of the large households the majority of which had 5 people. In addition the lowest saving level was -$1500 with the highest saving level reached being $4500. Chikoko et al. (2013) attributed this high negative saving level to the dependency of respondents on borrowings and social club activities.

Furthermore, the results of the study revealed that on average respondents looked after 3 dependents. Amongst the respondents, the highest number of dependents a respondent had to look after was 11 with the largest household observed having the same number of people. The high number of dependents and large households indicates the existence of intergenerational households and extended family arrangements. In accession, the results revealed that the majority of the respondents' households had 5 people of which 2 were children. Comparison with the 2012 census shows that the sample mirrors the sampling frame as the 2012 census reported the average household size in Bulawayo and Gweru to be 3.9.

4.4 The Primary Motive for savingduring an Individual's Working Years

The table below shows the percentage of respondents in each group during their working years that cited each motive as their primary motive for saving.

Table 4.2: Motives for Saving by Age Group

	Age									
Motive for saving	**20-24**	**25-29**	**30-34**	**35-39**	**40-44**	**45-49**	**50-54**	**55-59**	**60-64**	**All**
	%	%	%	%	%	%	%	%	%	%
Illness and other unexpected emergencies	4.65	10.87	10.29	14.81	16.67	23.81	22.58	25.00	26.92	15.69
Life after retirement	0.00	2.17	5.88	7.41	7.14	19.05	32.26	37.50	38.46	13.03
Children's education	6.98	13.04	19.12	18.52	26.19	21.43	19.35	16.67	11.54	17.29
To leave a legacy for my children	0.00	8.70	11.76	12.96	14.29	11.90	16.13	12.50	15.38	11.17
Purchase or construction of land and housing	11.63	32.61	33.82	25.93	19.05	9.52	0.00	0.00	0.00	18.35
Purchase of consumer durables (e.g. TVs, radios, etc.)	37.21	21.74	8.82	9.26	9.52	0.00	0.00	0.00	0.00	10.90
Travel & other leisure activities	13.95	6.52	0.00	5.56	2.38	2.38	6.45	8.33	7.69	5.32
No specific purpose but for a feeling of security	16.28	4.35	5.88	5.56	4.76	4.76	3.23	0.00	0.00	5.59
Other	9.30	0.00	4.41	0.00	0.00	7.14	0.00	0.00	0.00	2.66
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Raw Data

The results of the survey show that for all age groups in their working years, saving for life after retirement is the fourth most common response (13.03%), coming after saving for the purchase or construction of land and housing (18.35%) and children's education (17.29%). Saving for illness and other unexpected emergencies which represents the precautionary motive was the third most common response with 15.69%. Breaking down the results by age groups reveals considerable variations in the ranking of these motives.

From the results of the survey we can observe that saving for the purchase or construction of land and housing is dominant in the early years of an individuals working years peaking at the 30-34 year age group (33.82%) after which it significantly declines to 9.52% in the 45-49 year

age group. The reason why the motive to save for housing peaks around the 30-34 year age groups is because cohorts in this stage are in the accumulation phase of the life cycle or household formation stage. According to Reilly and Brown (2006) individuals in this stage have the immediate need to accumulate assets which may include making a down payment for a house.However, as individuals move through the life cycle this motive becomes less important. Respondents attributed the need to save in real estate to the lessons from the hyperinflationary environment and MCS transition period where people lost all their life savings in banks and other financial institutions. In addition, respondents cited uncertainty about the future monetary developments coming from rumours about the return of the Zimbabwean dollar as the reason for saving in real estate. As a result of this loss aversion phobia people are afraid of saving with financial institutions instead preferring to save in real estate as it can adjust to any monetary system without a significant loss in value.

The results also reveal that saving for children's educational expenses is one of the major motives for saving for most of an individual's working years with the exception of those in 20-24 age group. The results of the study show that this motive maintains it dominance for most of an individual's working years peaking at the 40-44 year group (middle years) before declining in the late fifties, when most of the children would have finished their schooling. This is in line with Reilly and Brown (2006) who appended that individuals in their middle age were in the consolidation stage as such one their primary motives for saving was to meet their children's education needs.

Turning to the motive to save for illness and other unexpected emergencies, the results of the survey reveal that the precautionary motive is important for all age groups with the exception of those in the 20-24 age group. This low percentage in the 20-24 age group can be attributed to the fact that cohorts in this age group are still dependents and may not feel the need to save for illness and other unexpected emergencies. However, as the results of the study reveal, this motive becomes more dominant as cohorts grow olderand more mature.Respondents argued that because of the uncertainty of pay days for several companies and unstable incomes they were often forced to save so as to provision for any unexpected emergencies. This in line with Deaton (1991) and Cagetti (2003) who affirmed that, when subjected to several risks such as the

fluctuations in earnings and other inconceivable circumstances the motive for holding assets becomes precautionary.

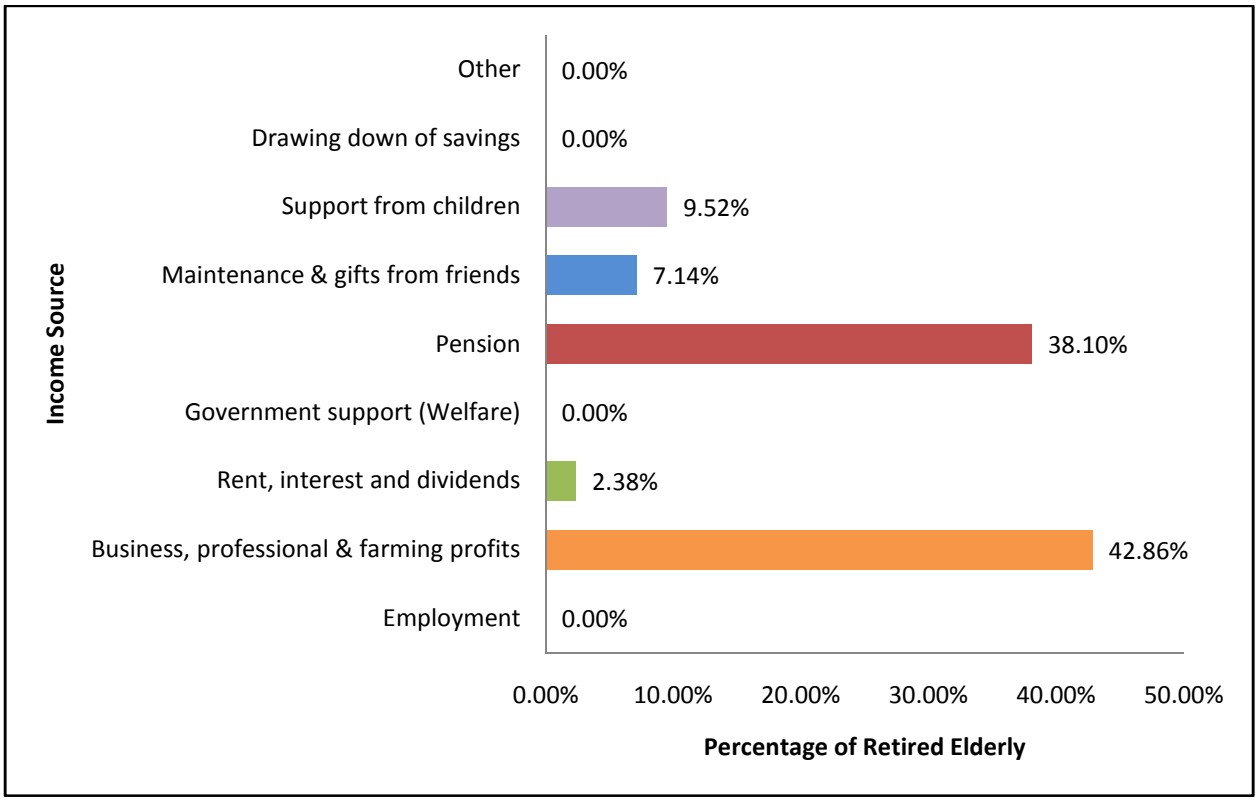
Lastly, the results of the study indicate that saving for life after retirement is unimportant in Zimbabwe during most individuals early working years, only becoming dominant in the 50-64 year age group just before cohorts retired. With the exception of those approaching retirement respondents attributed this to the fact that they were still trying to recover from the effects of dollarisation so as to get back on their feet. As a result they were not yet thinking about retirement, however, the current instinct was to save to ensure survival and survival of the family name through investment in their children's education. It then follows with the exception of those approaching retirement that saving for life after retirement is a secondary motive. This result is similar to Butelmann and Gallego (2001) and Cagetti (2003) who found that although retirement concerns were present throughout an individual's life, they became more important with age as individuals' prepare to retire.

A synopsis of the primary motive for saving during one's working years, suggests that while the life cycle motive for saving in Zimbabwe is present, it is not the dominant motive for saving. This is attributed to the fact that people cited more urgent motives such as their children's education andthe purchase or construction of land and housingrespectively as their primary motive for saving. However, although not dominant during one's early working years the life cycle motive becomes more dominant for cohorts nearing retirement as fears of how they are going to meet their living expenses during retirement settle in.

4.5 The Primary Source of Income after Retirement

One of the basic premises of the LCH is that after retirement the elderly rely on savings accumulated during their working years as their primary source of income. Figure4.1 below present's data from the survey on the percentage of retired elderly citing each source of income as their primary source of income.

Figure 4.1: Primary Source of Income after Retirement



Source: Raw Data

Focusing on figure 4.1 the results of survey reveal that a greater percentage of the elderly in Bulawayo and Gweru rely on business, professional and farming profits (42.86%) as their primary source of income, followed by pension income (38.10%) and support from children (9,52%). The forth source of income the elderly relied on is maintenance and gifts from friends (7.14%).

In contrast to the LCH, a small percentage of the elderly relied on rent, interest and dividends (2.38%) and drawing down of savings (0.00%) which according to Horioka (1984) represents the drawing down of savings accumulated during one's working years. Respondents attributed this to the fact that they lost their life savings due to hyperinflation and the transition from Zimbabwean dollar to the MCS. In addition, the study observed that because people were not taught how to plan for retirement, even though some cohorts had accumulated a substantial amount of assets at retirement these savings where quickly exhausted. This forced the elderly to

rely on business and farming profits in addition to pension and support from their children respectively as their primary source of income.

However, this observation does not affirm that the elderly do not draw on their savings as their primary source of income. According to Modigliani (1986) pension benefits accruing to the retired should not represent income earned, but rather a drawing down from the pension wealth accumulated up to retirement. Based on Modigliani (1986), the results of the study show that although drawing down of savings accumulated during one's working years is present in the elderly age groups, these savings are, however, not the primary source of income during retirement. This is contrary to the basic premise of the life cycle hypothesis, suggesting its limited applicability in Zimbabwe.

4.6 Attitudes towards the Financing of one's Living Expenses during Retirement

To further clarify the life cycle hypothesis from a different angle the study sought to understand people's attitudes toward the financing of one's living expenses after retirement. These attitudes are presented in table 4.3 below.

The results in the table below are intriguing owing to earlier evidence that suggested the limited applicability of the LCH. This observation suggests that the LCH is applicable if tests go by people's intentions or attitudes rather than their actual behaviour. These results support the findings by Horioka (1984) who argued that many people intended to finance their living expenses after retirement with their own savings or felt that it is the most desirable state of affairs but, after reaching retirement age, found that their savings were insufficient and forced them to rely on support from their children, public pensions, and other sources of income. In addition, contrary to literature from developing countries, the study observed that in Bulawayo and Gweru there is waning reliance on family support whether one focused on actual results or attitudes. Respondents attributed this to the possibility that their child could marry a person who is against the idea of looking after their parents. To provision for this respondents argued that one should be financially independent and save for retirement.

Table 4.3: Attitudes toward the Financing of One's Living Expenses during Retirement

Attitude	Percent
View 1: One should prepare for retirement during their working years and not depend on their family, social security or others to finance their living expenses after retirement	80.54
View 2: One should **solely** depend on family members to finance their living expenses after retirement	4.70
View 3: One should **solely** depend on social security (i.e. pension) to finance their living expenses after retirement	10.74
No answer	4.03
Total	**100.00**

Source: Raw Data

4.7 The Variation of Income with Age

To complement primary data from the survey, the study used data from the 2011/12 PICES on individual income and remittances to assess the variation of income with age. The data is presented below:

Table 4.4: Mean Monthly Income by Age Group

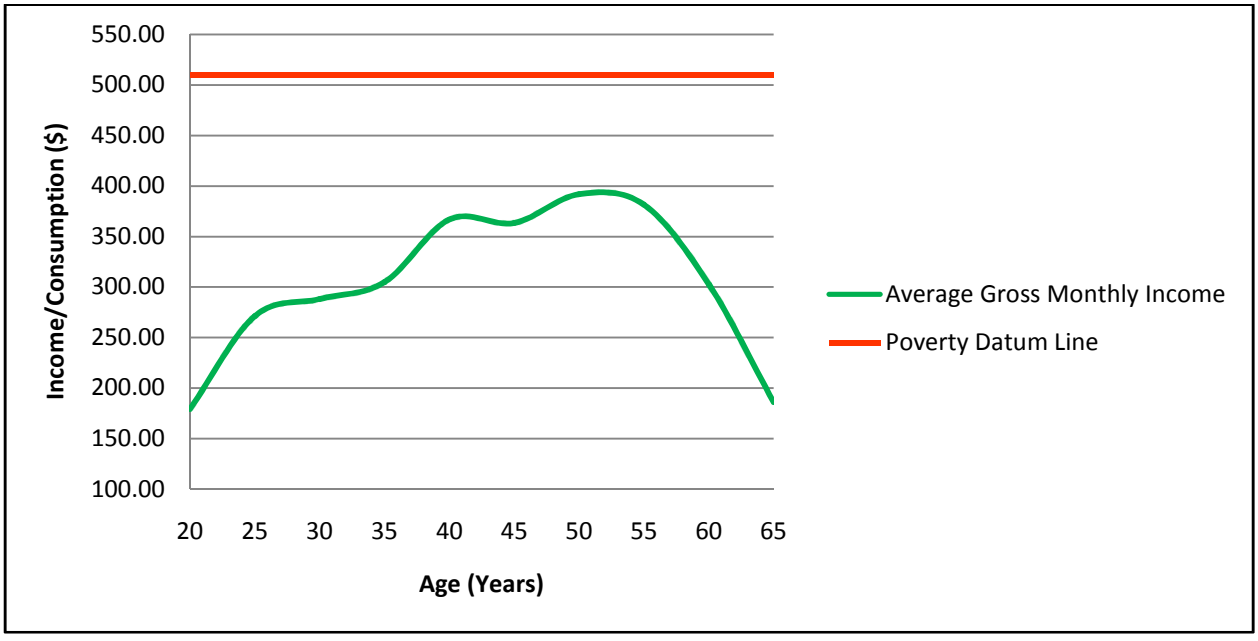
	Age Group										
Sex	**20-24**	**25-29**	**30-34**	**35-39**	**40-44**	**45-49**	**50-54**	**55-59**	**60-64**	**65+**	**Total**
	$	$	$	$	$	$	$	$	$	$	$
Male	165.67	267.42	286.33	334.5	392.33	402	443.42	409.83	335.42	193.92	313.25
Female	202.42	278.33	292	236.83	304.33	286.42	277.17	320.08	218.67	157.17	266.17
Total	**179.17**	**271.08**	**288.08**	**304.67**	**366.92**	**363.42**	**391.83**	**381.5**	**302.42**	**186.17**	**298.33**

Source: Poverty Income Consumption and Expenditure Survey (PICES) 2011/12

Data from the 2011/12 PICES shows that as people grow older income increases with age up to the 50-54 year age group after which it begins to decline. In addition the data shows that in Zimbabwe the average gross monthly income ranges from $179.17 in the 20-24 year age group

to $391.83 in the 50-54 year age group. The low incomes in the 20-24 year age group can be attributed to the fact that many individuals in this group are not formally employed and still in college or getting some form of training. Furthermore, cohorts in this age group will have little experience and skills. However, as an individual grows in experience, education and skills their income begins to grow until somewhere in middle age where it peaks after which it begins to fall. Lydall (1955) attributed this decrease in income to the decline in skill, strength, or the onset of periods of illness and unemployment. It is important, to note that income declines significantly from $391.83 in the 50-54 year age group to $186.17 after the age of 65, which is the retirement age in Zimbabwe. This is in line with the life cycle hypothesis which postulates that individual's income goes through a cycle as they pass from youth to middle age and on to old age. Given that income goes through this cycle individuals will seek to smooth out their consumption by saving during their working years to finance consumption after retirement when income has fell significantly.

Figure 4.2: Mean Monthly Income and Poverty Datum Line by Age Group



Source: PICES 2011/12

In addition the life cycle hypothesis postulates that income will be greater than consumption in middle age as individuals would have built up enough skill and experience to increase the

probability of higher earnings. As a result it is theorised that in this stage savings will be positive as cohorts will be saving and accumulating assets to consume during retirement. However, comparison of the PICES 2011/12 report and the poverty datum line shows that average income does not exceed consumption in Zimbabwe during an individual's middle years as theorised by the life cycle hypothesis. The poverty datum line in Zimbabwe for an average family of 5 people was estimated by ZIMSTAT (2014) to be $510.18. This evidence suggests that there is low potential for savings mobilisation and limited applicability of the LCH in Zimbabwe, as cohorts in the middle age group which are theorised to exhibit positive saving instead have a shortfall as their income is less than their consumption. According to Mbuthia (2011) in order for individuals to smooth out consumption, income should exceed consumption in the middle age or during the working life.

4.8Association between Age and Net Worth

Before analysing data on the variation of asset holding with age the study sought to test whether there is a statistically significant association between age and net worth. To do this the study employed the Pearson chi-square test with the following hypothesis:

H_0: there is no statistically significant association between age and gender.
H_a: there is a statistically significant association between age and gender.

Given that the variation of asset holding with agehad 72 degrees of freedom; the critical value at a 95% confidence interval was estimated at 92.80827. The results of the Pearson chi-square test ($\chi 2$= 336.0367) showed that the variation between age and net worth was too great to be explained by chance alone as the chi-square was greater than our critical value. Therefore H_0 wasrejected and H_a accepted. This observation is in line with Lihiku (2006) who found that the age of the household had a significant relationship with savings in Malawi.

4.9 The Variation of Asset Holding with Age

One of the possible tests of the life cycle hypothesis consists of ascertaining whether individuals show a 'humped' pattern of asset holding. To test this, the study computed the distribution of respondents according to their net worth using mean values of the principal components of net worth and presented the results in table 4.5, figure 4.3 and Appendix D respectively.

Table 4.5: Distribution of Net Worth within Age Groups

	Age group										
Net worth	**20-24**	**25-29**	**30-34**	**35-39**	**40-44**	**45-49**	**50-54**	**55-59**	**60-64**	**65+**	**All ages**
	%	%	%	%	%	%	%	%	%	%	%
Negative	5.66	6.25	4.35	0.00	0.00	0.00	0.00	0.00	12.50	0.00	2.80
Zero	32.08	25.00	0.00	5.56	0.00	0.00	0.00	0.00	12.50	7.14	8.88
Below $1000	33.96	12.50	13.04	0.00	7.14	7.14	10.00	25.00	25.00	21.43	14.72
$1000-4999	16.98	37.50	30.43	27.78	35.71	7.14	0.00	0.00	12.50	7.14	20.33
$5000-9999	5.66	12.50	8.70	16.67	28.57	0.00	10.00	0.00	0.00	0.00	9.11
$10000-14999	0.00	0.00	13.04	11.11	7.14	0.00	0.00	0.00	0.00	14.29	5.61
$15000-19999	5.66	0.00	0.00	5.56	0.00	7.14	10.00	0.00	0.00	7.14	3.50
$20000-24999	0.00	0.00	4.35	0.00	0.00	14.29	0.00	0.00	12.50	14.29	4.21
Above $25000	0.00	6.25	26.09	33.33	21.43	64.29	70.00	75.00	25.00	28.57	30.84
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

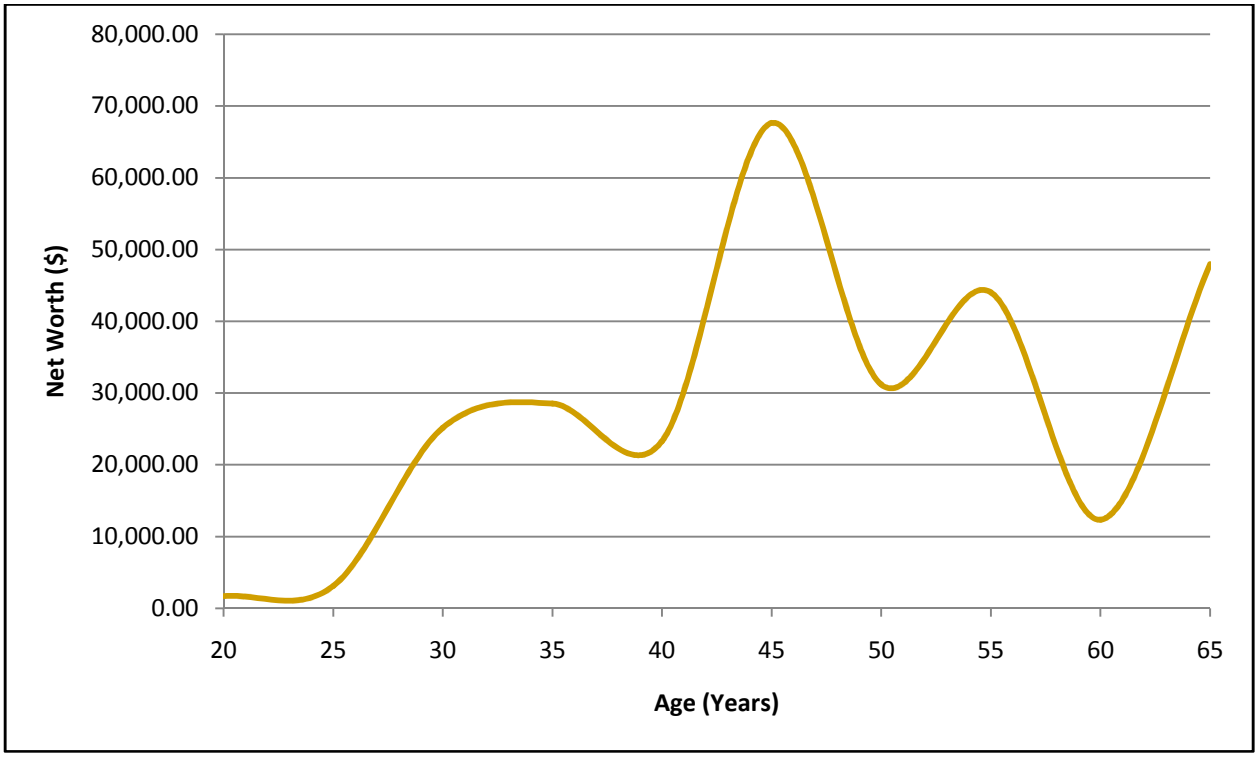
Source: Raw Data

Pearson chi2 (72) = 336.0367 Pr = 0.000

Turning to the frequency distributions in table 4.5 it can be observed that in the first age group about 37.74% of the respondents had no net worth or a negative amount of net worth, with the majority of respondents in this group having a positive net worth less than $1000. In addition the study observed that as cohorts' senesce there is an increase in the percentage of cohorts with a substantial amount of assets with this percentage peaking in the 55-59 year age group (75.00%). However as cohorts reach the penultimate group the proportion of respondents who have substantial amounts of assets begins to decline. Of interest the study noted that 12.50% and 7.14% of the respondents in the 60-64 and 65+ year age group respectively had no net worth.

This result is in line with the life cycle hypothesis which postulates that mean asset holding should decline significantly after retirement. Despite the fact that some respondents show a significant decline in asset holding the percentage of respondents who had zero net worth is too modicum to accept the life cycle hypothesis.

Figure 4.3: Mean Net Worth by Age



Source: Raw Data

Turning to figure 4.3, the study observed that contrary to empirical studies, net worth in Zimbabwe follows a wave shaped path. In addition the study observed that the average level of wealth does not decline after retirement, however, it increased to $47,944.29 from $12,318.21 in the 60-64 year age group (figures presented in Appendix D). The increase in asset holding looking at Appendix E can be attributed to the precautionary motive for saving as 38.10% of the retired elderly attested to saving to have a contingency plan for illness and other unexpected emergencies. This is in line with Cagetti (2003) who argued that individuals often saved to self-insure themselves because they were subjected to several risks such as the deterioration in health and

other inconceivable circumstances, often with limited or no markets to insure themselves against these risks.

The observations above suggest that the life cycle hypothesis is of limited applicability in Zimbabwe as the variation of asset holding with age is postulated to be 'hump' shaped. This shape can be attributed to the fact that many people are still trying to recover from the effects of the multiple currency transition period where most people lost their assets. In accession respondents pointed out that with the closure of companies and low volatile incomes they sometimes relied on the proceeds from the sale of their assets to smooth out income. So instead of accumulating assets during their working years some respondents were decumulating their assets to smooth out their income hence the wave shape.

Another explanation for this wave shape can be taken from Deaton (1989). Deaton (1989) postulated that although savings in developing nations played a significant role in buffering between incomes and spending, individuals often saved and dissaved in small amounts at regular intervals to smooth out income, rather than build up or save for retirement. As a result respondents would not show the 'hump' shaped asset holding as postulated by the LCH. This again suggests that the LCH is incomplete for use in developing countries such as Zimbabwe, thereby affirming Donkor and Duah (2013) postulations that theories of saving were created with developed countries in mind.

4.10 Applicability of the Life Cycle Hypothesis

The results of the study in line with Lydall (1955), Horioka (1984), Hayashi (1986) and Shibuya (1987), Deaton(1991), Spio and Groenewald (1996), Bendig et al. (2009), Abdelkhalek et al. (2010) and Issahaku (2011) revealed that the life cycle hypothesis is not applicable in Zimbabwe due to its inaptitude to support the basic premiss of the LCH. Contrary to the LCH the study observed that the primary motive for saving during an individual's working years in Zimbabwe is for the purchase or construction of land and housing. In addition the primary source of income for the elderly after retirement was from business, professional and farming profits. Furthermore, contrary to the LCH despite income following a 'hump' shaped pattern, income did not exceed

consumption during middle age. Lastly, asset holding did not follow a 'hump' shaped pattern instead it followed a wave shaped pattern increasing after retirement.

4.11 Summary

This chapter was centred on the presentation, interpretation and analysis of the data collected. The data was analysed using a combination of Stata 12 and MS Excel in addition to content and thematic analysis. The results were subsequently presented using a series of cross tabulations, tables and graphs. The results show that contrary to the LCH the primary motive for saving in Zimbabwe is for the purchase or construction of land and buildings with saving for life after retirement being the fourth most common reason for saving. Moreover, the results show that despite being unimportant during most of an individual's early working years, the motive to save for retirement becomes more dominant as individual's approach retirement.

In addition contrary to the LCH the study revealed that a greater percentage of the elderly in Zimbabwe rely on business, professional and farming profits as their primary source of income. Pension income which represents the drawing down of savings accumulated during one's working years was the second most common source of income for the elderly in Zimbabwe. Of interest, 0% and 2.38% of the elderly relied on drawing down of savings deposits and property income (rent, interest and dividends) respectively as their primary source of income. However, despite earlier evidence suggesting the limited applicability of the LCH, the results of the study revealed that if tests went by people's intentions or attitudes rather than their actual behaviour the LCH was applicable. The majority of the respondents cited that one should save during their working years and be self-sufficient after retirement.

Turning to the variation of income with age, the results of the study revealed that in line with the LCH, income follows a 'humped' pattern peaking in middle age, then declining afterwards. However, contrary to the LCH, income did not exceed consumption in the middle age which is essential for individuals to smooth out consumption. Lastly, the results of the study revealed that contrary to the LCH, asset holding did not follow a 'humped' pattern. Instead, it followed a wave shaped path. This is attributed to the fact thatinstead of building up assets or saving for retirement individuals saved and dissaved in small amounts at regular intervals to smooth out

income. These results affirm that the LCH is not applicable in Zimbabwe as saving for the purchase or construction of land and housing not retirement is the primary motive for saving during an individual's working years.

CHAPTER 5 : SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the main concepts from preceding chapters before discussing the conclusions drawn from the research findings presented in chapter four. Furthermore, the chapter will present recommendations to policy makers, banks and economic planners in line with the research findings and conclusions. The chapter will conclude by suggesting areas of interest for future research which the study did not touch on.

5.2 Summary of the Study

The study was carried out to test the applicability of the LCH of saving to Zimbabwe. This was motivated by the radically new environment which has been characterised by volatile short-term deposits, loss aversion phobia and persistent liquidity shortages since the introduction of the MCS. Given these challenges the study sought to provide knowledge on the saving characteristics of households so as to aid banks, economic planners and policy makers to design and implement saving products that will optimistically attract long term savings and prospectively create a saving culture.

Given that a few empirical studies in the subject area have been done in Zimbabwe to the researcher's knowledge. The study relied on literature from various promulgated journals, text books and other published research work on savings behaviour and the LCH both from developed and developing countries to develop tests to determine the applicability of the LCH. Given that individuals are heterogeneous the study adopted a micro economic approach in order to take into account their heterogeneity. In addition a coalesced of the comparative and survey research design was used in order to compare the behaviour of cohorts before and after retirement in addition to explaining why individuals displayed certain behaviour.

A sample of 512 respondents was drawn from the general public in Bulawayo and Gweru using quota sampling on the basis of age and gender for the survey questionnaire. Judgemental sampling was used to select interviewees from the general public. However, the study did not make use of a predetermined sample size; instead various interviewees were interviewed until the researcher began to obtain the same responses from different respondents. In addition to

primary data the study relied on external secondary data from the 2012 national census and PICES 2011/12. To test for reliability the research instruments were embedded with questions to test for internal consistency. In order to analyse the data collected the study made use of both qualitative and quantitative data analysis techniques. Quantitative data was analysed using Stata 12 and MS Excel whereas qualitative data was analysed through content and thematic analysis.

The results of the study observed that contrary to the predictions of the LCH, the primary motive for saving during an individual's working years was for the purchase or construction of land and housing. Life after retirement was the fourth most common motive for saving. The study also observed that contrary to the LCH a greater percentage of the elderly rely on business, professional and farming profits as their primary source of income as opposed to savings accumulated during their working years. Furthermore, the study observed that although the average income followed a 'hump' shaped pattern, it did not exceed consumption in middle age as postulated by the LCH. Lastly the study observed that asset holding did not follow a 'hump' shaped pattern despite income following a 'hump' shaped pattern. Instead it followed a wave shaped pattern. Despite actual results showing that the LCH is of limited applicability in Zimbabwe the study observed that if studies went on people's attitudes it was applicable.

The research findings were used to derive the following conclusions and recommendations.

5.3 Conclusions

5.3.1 Variation of Income with Age

From the research findings, it can be concluded that in line with the LCH income follows a hump shaped pattern peaking in middle age and then declining as cohorts grow older. However, contrary to the LCH income does not exceed consumption in the middle age where it is postulated to be higher than income. This phenomenon can explain the low saving rate in Zimbabwe as it is the savings of the younger households which are postulated to drive up national savings. This is attributed to the fact that thesaving of younger households in the accumulation phase will outweigh the dissaving of the retired households in the spending phase.

5.3.2 Variation of Asset Holding with Age

From the research findings, it can be concluded that contrary to the predictions of the LCH asset holding in Zimbabwe follows a wave shaped pattern. This is attributed to the fact that people do not build up or save assets for retirement but rather save and dissave in small amounts at regular intervals to smooth out income. In addition from the results of the study it can be concluded that contrary to the LCH cohorts do not dissave their asset holdings after retirement but instead accumulate assets for illness and other unexpected emergencies

5.3.3 Primary Motive for Saving During Working Years

Thirdly, the study concludes that the primary motive for saving in Zimbabwe is for the purchase or construction of land and housing contrary to the LCH. Although not dominant for an individual's entire working years this motive is dominant for the greater part of an individual's early working years peaking in middle age. In addition, from the results of the study it can be concluded that the life cycle motive is unimportant in an individual's early working years, only becoming dominant just before cohorts retire as fears of how they are going to meet their living expenses during retirement settle in.

5.3.4 Primary Source of Income after Retirement

Furthermore, from the results of the study it can be concluded that the primary source of income after retirement in Zimbabwe is business, professional and farming profits instead of drawing down of savings. Drawing down of pension benefits which represents the dissaving of savings accumulated during one's working years was the second most common source of income contradicting the basic premise of the LCH. In addition, it can be concluded that the LCH is applicable if one goes by people's intentions or attitudes than when one goes by actual results. This is attributed to the fact that many people intend or have the desire to finance their lives after retirement with their own savings but upon reaching retirement age, find that their savings are insufficient. As a result they are forced to rely on other sources of income.

5.3.5 Applicability of the life cycle hypothesis

Given the foregoing evidence that income does not exceed consumption in middle age, asset holding does not follow a hump shaped path, the primary motive for saving in Zimbabwe is for

the purchase or construction of land and housing, and the primary source of income during retirement is from business, professional and farming profits it can be concluded that the LCH is not applicable in Zimbabwe.This conclusion supports evidence from other developing countries that the LCH is made with developing countries in mind as it does not conform to the facets of developing countries.

5.4 Recommendations

In light of the antecedent research findings and conclusions the following recommendations were proposed for consideration by banks and the RBZ.

5.4.1 Education of the Public on How to Save for Retirement

There is need for banks in conjunction with the RBZ to educate the general public on how to save for retirement. The study observed that the desire to save for retirement is there in Zimbabwe as some people saved for retirement or showed an intention to save for retirement. However, in many instances individual's wealth was quickly depleted after retirement and as a result they were forced to rely on support from their children, public pensions and other sources of income. Interviews with the general public attributed this to the fact that they were not taught on how to plan for retirement.

5.4.2 Pay Yourself First

Secondly, the research recommends that banks should raise awareness of 'pay yourself first' described in the 'Richest man in Babylon' by George S. Clason (1926). The study observed that when one goes by intentions and attitudes many people intended to finance their own living expenses during retirement with their own savings but found that their incomes may be insufficient to meet all their expenses. That is they pay everyone but forget to pay themselves. Instead they should pay themselves one-tenth of everything they earn, first before they pay anyone else. This one-tenth will be saved for retirement. By the time an individual retires this can accumulate to a substantial sum.

5.4.3 One Glove Does Not Fit All

The foregoing results reveal that one glove does not fit all when it comes to saving products. Given that the primary motive for saving is for the purchase or construction of land and housing, the research recommends banks to ride on targetsavings products for real estate and frame appeals according to this motive as opposed to retirement products for cohorts in the 25-44 age group.Banks can frame appeals on retirement products to those approaching retirement as this motive only becomes dominant as people approach retirement. To cater for individuals in the 20-24 year age group banks can create target savings products for consumer durables and frame appeals accordingly. Lastly, given that saving for one's children education is important for most of an individual's working years banks can similarly frame appeals on this motive.

5.5 Suggestions for future research

The study was carried out from a micro econometric approach in order to take into account individual's heterogeneity. Future studies can be done from a macro econometric approach to determine if the LCH can be used to explain the saving rate in Zimbabwe.

REFERENCES

Abdelkhalek, T., Arestoff, F., El Mekkaoui de Freitas, N. & Mage, S. (2010). A Micro econometric Analysis of Household Savings Determinants in Morocco.*African Review of Money Finance and Banking.* [internet]. pp. 7-27. Available at: <http://www.jstor.org/stable/41803204> [Accessed 17 March 2014].

Agrawal, P. & Sahoo, P. (2009). Saving and Growth in Bangladesh. *The Journal of Developing Areas*. Spring. 42 (2), pp. 89-110.

Ando, A. & Modigliani, F. (1963). The "Life Cycle" Hypothesis of Saving: Aggregate Implications and Tests. *The American Economic Review*. [internet], March, 53 (1) Part 1, pp. 55-84. Available from: <http://www.jstor.org/stable/1817129> [Accessed 18 November 2013].

Ando, A. & Modigliani, F. (1964). The "Life Cycle" Hypothesis of Saving: A Correction.*The American Economic Review*. [internet], March, 54 (2) Part 1, pp. 111-113. Available from: <http://www.jstor.org/stable/1810904> [Accessed 19 November 2013].

Ando, A. (1985). The savings of Japanese households: A micro study based on data from the National Survey of Family Income and Expenditure. University of Pennsylvania. Mimeo.

Bendig, M., Giesbert, L., and Steiner, S. (2009). Savings, Credit, and Insurance: Household Demand for Formal Financial Services in Rural Ghana. *Brookings Working Paper Institute, 76.*

Bernheim, B. (1984). Dissaving After Retirement: Testing The Pure Life Cycle Hypothesis.*National Bureau of Economic Research*. Working paper 1409.

Bernheim, B. D., (1987). Dissaving After-Retirement: Testing the Pure Life Cycle Hypothesis. In *Issues in Pension Economics*, University of Chicago Press.

Bikker, J.A., Broeders, D.W., Hollanders, D.A. & Ponds, E.H. (2012). Pension Funds' Asset Allocation and Participant Age: A Test of the Life-Cycle Model.*The Journal of Risk and Insurance*,

[internet]. 79(3), pp. 595-618. Available at: <DOI: 10.1111/j.1539-6975.2011.01435.x> [Accessed on 18 March 2014].

Borsch-Supan, A. (1992). Saving and Consumption Patterns of the Elderly: The German Case. *Journal of Population Economics*, V. pp. 289-303.

Bosworth, B., Burtless G., & Sabelhaus, J. (1991). The Decline in Saving: Evidence from Household Surveys. *Brookings Papers on Economic Activity*. pp.183-241.

Bryman, A. (2006). Editor's Introduction: Mixed Methods Research, in A. Bryman (ed.) *Mixed Methods*: Volume 1. London: Sage, pp. XXV-LII.

Butelmann, A. & Gallego, F. (2001). Household Saving in Chile (1988 And 1997): Testing the Life Cycle Hypothesis.*Cuadernos De Economía*. [Internet], April, 38 (113). Available from: <http://dx.doi.org/10.4067/s0717-68212001011300001> [Accessed 16 February 2014].

Cagetti, M. (2003). Wealth Accumulation Over the Life Cycle and Precautionary Savings. *Journal of Business & Economic Statistics*. [internet]. January 2012, 21 (3), pp.339-353. Available from: <http://dx.doi.org/10.1198/073500103288619007> [Accessed 16 February 2014].

Carroll, C. D., and Samwick, A. (1997). The Nature of Precautionary Wealth. *Journal of Monetary Economics*. 40, pp. 41-71.

Casu, B., Girardone, C., and Molyneux, P. (2006). Introduction to Banking. Essex, Pearson Education Limited.

Chikoko, L., & Le Roux, P. (2012). Liquidity Management by Commercial Banks in a Multiple Currencying Environment: The Zimbabwean Case. *Business and Social Sciences Review*. 1 (7-8), pp. 4-21.

Chikoko, L., Le Roux, P., & Dzingirai, C. (2013). Microeconometric Analysis of the Determinants of Savings Behaviour in Zimbabwe: 2009-2012. *International Journal of Business and Management*. [internet], April, 8 (10). Available from:

<http://dx.doi.org/10.5539/ijbm.v8n10p159> [Accessed 30 October 2013].

Curley, J., Ssewamala, F. & Sherraden, M. (2009). Institutions and Savings in Low-Income Households.*Journal of Sociology & Social Welfare*. September, XXXVI (3).

Danzinger, S., Van Der Gaag, J., Smolensky, E. & Taussig, M.K. (1982). The Life-Cycle Hypothesis and the Consumption Behaviour of the Elderly. *Journal of Post Keynesian Economics*. [internet], Winter, 5 (2), pp. 208-227. Available from: <http://www.jstor.org/stable/4537732> [Accessed 16 February 2014].

Davies, J. (1981). Uncertain Life Time, Consumption and Dissaving in Retirement. *Journal of Political Economy*, June, 89, pp. 561-77.

Deaton, A. (1989). Savings in developing countries: Theory and Review. Research Program in Development Studies; Woodrow Wilson School; Princeton University.

Deaton, A. (1990). Saving in Developing Countries: Theory and Review. Proceedings of the World Bank Annual Conference on Development Economics 1989. Supplement to The World Bank Economic Review and the World Research Observer, May 1990, pp. 61-96.

Deaton, A. (1991). Saving and Liquidity Constraint.*Econometrica*. 59(5) September, pp.1221-1248.

Deaton, A. (2005). Franco Modigliani and the Life-Cycle Theory of Consumption. *BNL Quarterly Review*. LVIII (233-234), June-September, pp. 91-107.

Dekle, R. (1988). Do the Japanese Elderly Reduce Their Total Wealth?*Working Paper Series Center On Japanese Economy And Business Graduate School Of Business Columbia University*. 14, pp. 1-32.

Donkor, J. & Duah, F.A. (2013). Relationship between Savings and Credit in Rural Banks with Specific Reference to Ghana. *International Journal of Business and Social Science*. July, 4 (8). pp. 210 - 221.

Fan, C. S. (2006). Do the Rich Save More? A New View Based on Intergenerational Transfers. *Southern Economic Journal*. 73(2).

Friedman, B., and Warshawsky, M. (1985). The Cost of Annuities: Implications for Saving Behaviour and Bequests. *National Bureau of Economic Research*. Working Paper 1682, August 1985.

Greener, S. (2008). Business Research Methods. Ventus Publishing.

Hayashi, F. (1986). Why is Japan's Saving Rate so Apparently High?*NBER Macroeconomics*. [internet], 1, pp. 147 – 234. Available from: <http://www.nber.org/chapters/c4247> [Accessed 18 November 2013].

Heller, P. S., (1989). Aging, Savings, and Pensions in the Group of Seven Countries: 1980-2025. *Journal of Public Policy*. IX, pp. 127-53.

Horioka, C. Y. (1984). The Applicability of the Life-Cycle Hypothesis of Saving to Japan. *The Kyoto University Economic Review*. 2 (117) October, pp. 31- 56.

Hubbard, G.R. (1984). 'Precautionary' Saving Revisited. Social Security, Individual Welfare, and the Capital Stock. *National Bureau of Economic Research*. Working Paper 1430.

Hurd, M. (1986). Savings and Bequests. *National Bureau of Economic Research*, Working Paper 1826.

Hurd, M.D. (1990). Research on the Elderly: Economic Status, Retirement, and Consumption and Savings.*Journal of Economic Literature*. XXVIII, pp. 565-637.

Issahaku, H. (2011). Determinants of Saving and Investment in Deprived District Capitals in Ghana - A Case Study of Nadowli in the Upper West Region of Ghana. *Continental J. Social Sciences*. 4 (1), pp. 1 – 12.

Jappelli, T. (2005). The Life-Cycle Hypothesis, Fiscal Policy, and Social Security.*In International Conference On Franco Modigliani: EconomistaTraTeoria E ImpegnoSociale. February, 17-18,*

2005, Roma Italy.Fisciano, Centre for Studies in Economics and Finance, pp. 1-21.

Kahn, C.M., & Wagner, W. (2010). Sources of Liquidity and Liquidity Shortages.

Kelley, A.C. & Williamson, J.G. (1968). Household Saving Behavior in the Developing Economies: The Indonesian Case. *Economic Development and Cultural Change*. [internet]. April, 16 (3), pp. 385-403. Available at: <http://www.jstor.org/stable/1152489 > [Accessed 18 March 2014].

Kibet, L.K., Mutai, B.K., Ouma, D.E., Ouma S.A. &Owuor, G. (2009). Determinants of Household Saving: Case Study of Smallholder Farmers, Entrepreneurs and Teachers in Rural Areas of Kenya. *Journal of Development and Agricultural Economics.* [internet]. October, 1 (7), pp. 137-143. Available at: <http://www.academicjournals.org/JDAE> [Accessed 19 March 2014].

Komiya, R. (1966). The Supply of Personal Savings. Berkeley: University of California Press, pp. 157-186.

Kudaisi, B.V. (2013). Savings and its Determinants in West Africa Countries.*Journal of Economics and Sustainable Development*. 4 (18). pp. 107-119.

Kuznets, S.S. (1946). National Income: A Summary of Findings. New York: Arno Press.

Leung, S. F. (1994). Uncertain Lifetime, The Theory of the Consumer, and the Life Cycle Hypothesis.*Econometrica*. [internet], September, 62 (5), pp. 1233-1239. Available from: <http://www.jstor.org/stable/2951514> [Accessed 16 February 2014].

Lihiku, N.G. (2006). Determinants of Savings in Malawi: A Household Level Analysis. Master of Arts (Economics) Thesis, University of Malawi.

Loayza, N., Schmidt-Hebbel, K., &Servén L. (2000). Saving in Developing Countries: An Overview. *The World Bank Economic Review*, 14 (3), pp. 393-414.

Lydall, H. (1955). The Life Cycle in Income, Saving, and Asset Ownership. *Econometrica*. [internet], April, 23 (2), pp. 131-150. Available from:

<http://www.jstor.org/stable/1907873> [Accessed 19 November 2013].

Mankiw, N.G. (2002). Macroeconomics. 5th ed. New York: Worth Publishers.

Masson, P. R., and Tryon, R. W. (1990). Macroeconomic Effects of Projected Population Aging in Industrial Countries. *IMF Staff Papers*. XXXVII, pp. 453-485.

Mbuthia, A.N. (2011). Household Saving Decisions in Kenya. PhD Thesis. Kenyatta University.

Ministry of Finance. (2010). National Budget Statement. Harare: MOF.

Ministry of Finance. (2011). National Budget Statement. Harare: MOF.

Ministry of Finance. (2012). National Budget Statement. Harare: MOF.

Ministry of Finance. (2013). National Budget Statement. Harare: MOF.

Ministry of Finance. (2014). National Budget Statement. Harare: MOF.

Mirer, T.W. (1979). The Wealth-Age Relationship Among the Aged. *American Economic Review.* 69, pp. 435-43.

Modigliani, F & Cao, S. L. (2004). The Chinese Saving Puzzle and the Life-Cycle Hypothesis. *Journal of Economic Literature*. [internet], March, 42 (1), pp. 145-170. Available from: <http://www.jstor.org/stable/3217039> [Accessed 16 February 2014].

Modigliani, F. & Brumberg, R. (1954). Utility Analysis and the Consumption Function: An Interpretation of Cross-section Data. *In Post-Keynesian Economics*, ed. Kenneth K. Kurihara. (New Brunswick: Rutgers University Press).

Modigliani, F. (1966). The Life Cycle Hypothesis of Saving, the Demand for Wealth and the Supply of Capital. *Social Research*. [Internet], Summer, 33 (2), pp. 160-217. Available from: <http://www.jstor.org/stable/40969831> [Accessed 18 November 2013].

Modigliani, F. (1986). Life Cycle, Individual Thrift, and the Wealth of Nations. *American Economic Review*. 76, pp. 297-313.

Modigliani, F. (1988). The Role of Intergenerational Transfers and Life Cycle Saving in the Accumulation of Wealth. *Journal of Economic Perspectives*. 2 (2), Spring, pp. 15-40.

Mody, A., Ohnsorge, F. & Sandri, D. (2012). Precautionary Savings in the Great Recession. *IMF Economic Review*. 60 (1), pp. 114-138.

Niculescu-Aron, I.G. (2012). An Empirical Analysis on Preferred Saving Instruments Based on the Enquiry "Financial Situation of the Romanian Households".*Journal of Applied Quantitative Methods.* Winter, 7 (4), pp. 19-28.

Nwachukwu, T.E. & Odigie, P. (2011). What Drives Private Saving in Nigeria. *African Economic Research Consortium*. AERC Research Paper 212.

Projector, D. & Weiss, G.S. (1964). Survey of Financial Characteristics of Customers. Washington. D.C.. The Board of Governors of the Federal Reserve System.

Rehman, H., Bashir, F. & Faridi, M.Z. (2011). Saving Behavior among Different Income Groups in Pakistan: A Micro Study. *International Journal of Humanities and Social Science*. 1 (10), August, pp. 268-277.

Reilly, F. K. & Brown, K. C. (2006). Investment Analysis and Portfolio Management. 8th ed. USA: Thompson South-Western.

Reserve Bank of Zimbabwe. (2009a). Monetary Policy Statement: January 2009. Harare: RBZ.

Reserve Bank of Zimbabwe. (2009b). Selected Economic Indicators: July 2009. Harare: RBZ.

Reserve Bank of Zimbabwe. (2010a). Monetary Policy Statement: January 2010. Harare: RBZ.

Reserve Bank of Zimbabwe. (2010b). Monetary Policy Statement: July 2010. Harare: RBZ.

Reserve Bank of Zimbabwe. (2011a). Monetary Policy Statement: January 2011. Harare: RBZ.

Reserve Bank of Zimbabwe. (2011b). Monetary Policy Statement: July 2011. Harare: RBZ.

Reserve Bank of Zimbabwe. (2012a). Monetary Policy Statement: January 2012. Harare: RBZ.

Reserve Bank of Zimbabwe. (2012b). Monetary Policy Statement: July 2012. Harare: RBZ.

Reserve Bank of Zimbabwe. (2013a). Monetary Policy Statement: January 2013. Harare: RBZ.

Riccardo, C. & Daniela, M. (2012). Household savings in China. *Journal of Chinese Economic and Business Studies*.[internet]. 10 (3), pp. 275-299. Available from: <10.1080/14765284.2012.699702>. Accessed 17 March 2014.

Rogg, C. S. (2000). The Impact of access to Credit on the Saving Behaviour of Micro entrepreneurs: Evidence from three Latin American Countries. A paper based on a thesis submitted to the University of Oxford.

Romer, D. (2001). Advanced Macroeconomics. McGraw Hill & Co: Boston.

Shibuya, H. (1987). Japan's Household Savings Rate: An Application of the Life-Cycle Hypothesis. *IMF Working Paper*. WP/87/15.

Simleit, C., Keeton, G., & Botha, F. (2011). The Determinants of Household Savings in South Africa.*J.Stud.Econ.Econometrics*, 35(3).

Skinner, J. (1988). Risky Income, Life-Cycle Consumption, and Precautionary Savings.*Journal of Monetary Economics*. 22, pp. 237-255.

Spio, K. & Groenewald, J.A. (1996). Rural Household Savings and the Life Cycle Hypotheses: The Case of South Africa.*The South African Journal of Economics*, 64. pp. 294-304.

Stenga, J. (2010). Demand and Challenges of Accessing Saving Products in Tajikistan Microfinance Institutions. Masters Thesis. Brussels School of Economics and Management.

Swartz, S., Danzinger, S., & E. Smolensky (1984). The Choice of Living Arrangements by the Elderly. in*Retirement and Economic Behaviour*, ed. Henry J. A. & Burt less G. Washington B.C.: Brookings Institution.

Tin, J. (2000). Life-Cycle Hypothesis, Propensities to Save, and Demand for FinancialAssets.*Journal of Economics and Finance*. 24 (2), Summer, pp. 110-121.

Tobing, E. (2011). Demography and Cross-Country Differences in Savings Rates: a New Approach and Evidence. *J Popul Econ*. 25, pp. 963-987. Available at: <10.1007/s00148-011-0386-4> [Accessed 18 March 2014].

Weil, D. N. (1994). The Saving of the Elderly in Micro and Macro Data.*The Quarterly Journal of Economics*. [internet], February, 109 (1), pp. 55-81. Available from: <http://www.jstor.org/stable/2118428> [Accessed 19 February 2014].

White, B. B. (1978). Empirical Tests of the Life Cycle Hypothesis. *The American Economic Review*. 68 (4) September, pp. 547-560.

Appendix A: Letter of Introduction

Midlands State University
Department of Banking and Finance
P Bag 9055, Gweru
Zimbabwe

Dear Sir/Madam

You have been randomly selected to participate in a survey on "The Applicability of the Life Cycle Hypothesis of Savings to Zimbabwe: Post Dollarisation." This study is in partial fulfilment of the requirements of the Bachelor of Commerce (Honours) degree in Banking and Finance at Midlands State University. While, this survey is completely voluntary and returning a completed questionnaire implies consent to participate in the survey, your participation will be appreciated as the success of the study directly depends on receiving a thoughtful response from you.

Where appropriate please circle to show your response. Your first thoughts are usually the best! If you feel the need to add further comments, please feel free to do so. Complete anonymity is assured and all responses will be aggregated for analysis using the identification number only and no personal details will be reported in the study.

Thank you for taking the time to complete this questionnaire. If you have any questions about this survey, please feel free to contact me on +263 (0) 774 618 262 or by email at njabulompofu@gmail.com. Alternatively, you can contact my research supervisor.

Thank you for your kind co-operation and assistance.

Yours Sincerely

Njabulo X Mpofu

Research Supervisor:
Dr. L. Chikoko
Department of Banking and Finance
Midlands State University
Tel: +263 773 095 507
Email: chikokol@msu.ac.zw

Appendix B: Questionnaire for the General Public

NO. [ ]

SURVEY ON THE APPLICABILITY OF THE LIFE CYCLE HYPOTHESIS OF SAVING

.....	1
.....	2
.....	3
.....	4

(Where applicable please circle to show your response)

NO	QUESTIONS	CODING CATEGORIES	
DEMOGRAPHIC CHARACTERISTICS			
1	Age	……..	
2	Gender	Male……..	1
		Female……...	0
3	What is your marital status?	Single/Never married……	1
		Divorced……..	2
		Widowed……..	3
		Married…….	4
4	What is your highest educational or professional qualification?	Primary education……...	1
		"O" Level…….	2
		"A" Level…….	3
		Apprenticeship……..……	4
		Diploma……	5
		Bachelor's degree…….	6
		Postgraduate degree…….	7
5	What is your employment status?	Unemployed…….....	1
		Student……	2
		Employed……	3
		Self-employed…….	4
		Retired…….	5
6	What is your **main** source of income? (highlight only one)	Employment……..	1
		Business, professional & farming profits.....	2
		Rent, interest and dividends……..	3
		Government support (Welfare)...……..	4
		Pension……..	5
		Maintenance & gifts from friends…….....	6
		Support from children……..	7
		Drawing down of savings……	8
		Other……	9

7	What is your monthly income?	…….	$
8	What is your residential status?	Own house…… Renting……. Living with parents……... Living with children…….…… Hostel/company provided ……...……. Other…….	1 2 3 4 5 6
9	How many dependents are you currently looking after?	…….	
10	How many people are there in your household?	…….	
11	How many children do you have?	…….....	
12	How much would you say your household spends a month on living expenses?	…….	$
RESEARCH INFORMATION			
13	What is your **main reason** for saving? (highlight only one)	Illness and other unexpected emergencies… Life after retirement…….. Children's education……. To leave a legacy for my children……. Purchase or construction of land and housing……..... Purchase of consumer durables (e.g. TVs, radios, etc…….. Travel & other leisure activities…….... No specific purpose but for a feeling of security…….. Other……..	1 2 3 4 5 6 7 8 9
14	How much do you have invested in financial assets (e.g. shares, money market, securities)	…….....	$

15	In your opinion how much would you say is the value of your livestock? (e.g. cows, goats, sheep, etc)	……	$
16	Roughly, how much would you say is the value of your car(s)?	……..	$
17	Approximately, how much would you say is the value of your real estate properties? (only applicable if you own the house)	…….	$
18	Estimate the value of your consumer durables and furniture? (e.g. TV, radio, laptops, fridge, stoves, etc)	……..	$
19	All in all how much would you say you owe in debts? (e.g. mortgages, lay-byes, overdrafts and personal loans)	……..	$
20	Which **one** of the following views falls most closely with your own view about living expenses after retirement? (highlight only one)	One should prepare for retirement during their working years and not depend on their family, social security or others to finance their living expenses after retirement.…...…	1
		One should **solely** depend on family members to finance their living expenses after retirement……..…….....	2
		One should **solely** depend on social security (i.e. pension) to finance their living expenses after retirement……..	3

Thank you, Ngiyabonga, Tatenda!

Appendix C: General Public Interview Guideline

Basic Information

1. How old are you?
2. What is your marital status?
3. Are you employed?
4. What is your primary source of income?
5. Do you have children?

   Probe: If yes, how many children do you have?
6. How many people are the in your household?

   Probe: How many of them are employed?

Introduction

7. Are you saving? *If "yes" proceed to question 8. If "no" proceed to question 13.*

Research information

If answer to question 7 is "yes":

8. What is your primary motive for saving?
9. What type of assets are you saving in? (Financial assets, livestock, cars, real estate etc.)
10. How often do you draw on these savings?
11. Are you saving for retirement? (If primary motive for saving is not for retirement).

    Probe: if not, why are you not saving for retirement?
12. How are you saving for retirement?

If answer to question 7 is "no":

13. Why are you not saving?

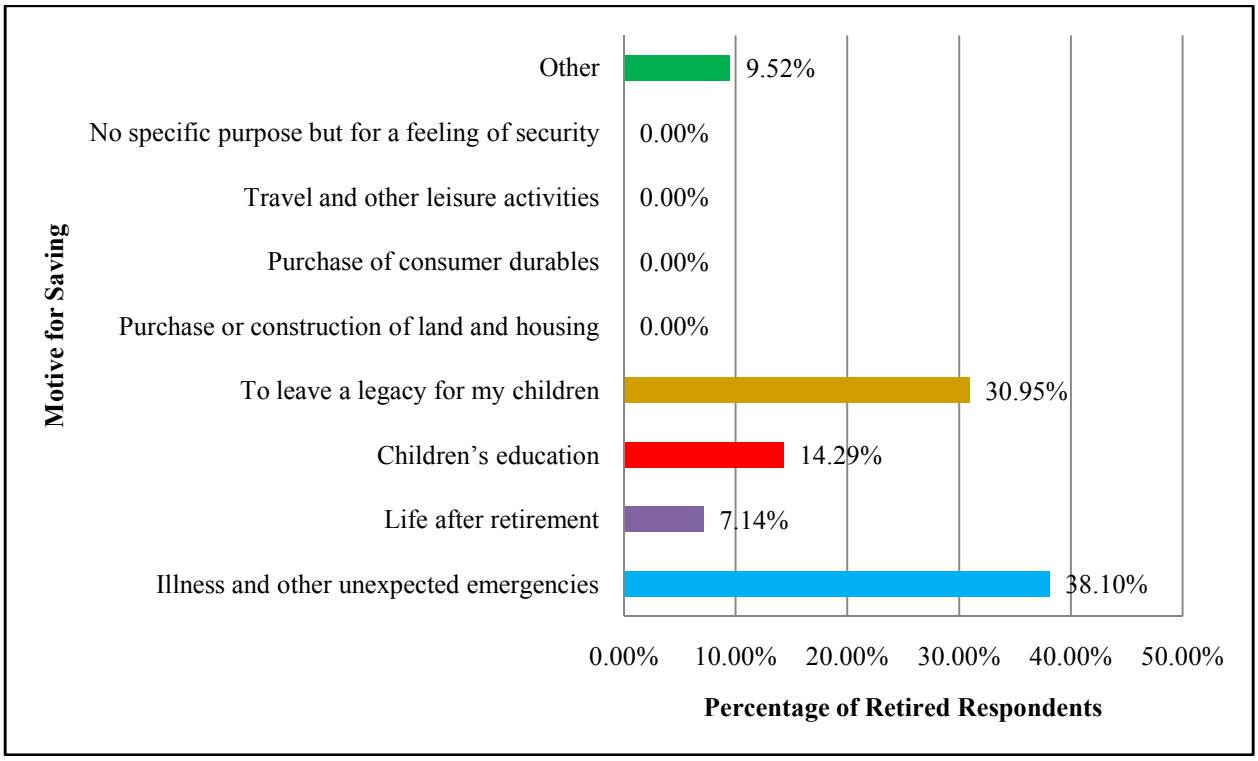
    Probe into interviewees responses

Appendix D: Mean Assets, Liabilities and Net Worth Analysed by Age Group

	Assets						Liabilities	Net worth
Age	**Financial assets**	**Livestock**	**Cars**	**Real estate**	**Consumer durables**	**Total**		
	$	$	$	$	$	$	$	$
20-24	574.53	118.87	735.85	0.00	489.62	1,918.87	-247.70	1,671.17
25-29	1,187.50	115.63	662.50	0.00	1,643.75	3,609.38	-512.50	3,096.88
30-34	3,184.83	1,873.91	5,876.52	10,347.83	5,386.96	26,670.05	-1,539.87	25,130.18
35-39	2,222.22	2,078.33	1,444.44	16,222.22	7,144.44	29,111.67	-602.78	28,508.89
40-44	1,378.57	1,807.14	1,785.71	15,571.43	5,139.29	25,682.14	-2,428.57	23,253.57
45-49	3,982.62	1,550.71	7,900.00	53,000.00	6,686.43	73,119.76	-5,510.71	67,609.05
50-54	1,180.00	2,040.00	2,200.00	20,800.00	5,780.00	32,000.00	-820.00	31,180.00
55-59	2,125.00	3,612.50	3,000.00	29,750.00	5,568.75	44,056.25	-53.38	44,002.88
60-64	6.25	4,081.25	1,837.50	5,000.00	1,556.25	12,481.25	-163.04	12,318.21
65+	455.00	6,607.14	3,785.71	32,142.86	5,025.00	48,015.71	-71.43	47,944.29
All ages	**1,771.11**	**2,144.30**	**3,042.48**	**17,004.67**	**4,473.08**	**28,435.64**	**-1,270.75**	**27,231.48**

Source: Raw Data

Appendix E: Retired Elderly's Primary Motive for Saving



Source: Raw Data

Appendix F: Stata Results

VARIATION OF ASSET HOLDING WITH AGE

Frequency Distribution of Net Worth within Age Groups

Age	Net Worth								
	negative	zero	below 100	1000-4999	5000-9999	10000-149	15000-199	20000-249	above 250	Total
20-24	5.66	32.08	33.96	16.98	5.66	0.00	5.66	0.00	0.00	100.00
25-29	6.25	25.00	12.50	37.50	12.50	0.00	0.00	0.00	6.25	100.00
30-34	4.35	0.00	13.04	30.43	8.70	13.04	0.00	4.35	26.09	100.00
35-39	0.00	5.56	0.00	27.78	16.67	11.11	5.56	0.00	33.33	100.00
40-44	0.00	0.00	7.14	35.71	28.57	7.14	0.00	0.00	21.43	100.00
45-49	0.00	0.00	7.14	7.14	0.00	0.00	7.14	14.29	64.29	100.00
50-54	0.00	0.00	10.00	0.00	10.00	0.00	10.00	0.00	70.00	100.00
55-59	0.00	0.00	25.00	0.00	0.00	0.00	0.00	0.00	75.00	100.00
60-64	12.50	12.50	25.00	12.50	0.00	0.00	0.00	12.50	25.00	100.00
65+	0.00	7.14	21.43	7.14	0.00	14.29	7.14	14.29	28.57	100.00
Total	2.80	8.88	14.72	20.33	9.11	5.61	3.50	4.21	30.84	100.00

Pearson chi2(72) = 336.0367 Pr = 0.000

Mean Assets, Liabilities and Net Worth Analysed By Age Group

Age	Summary of Value of Financial Assets: Mean	Std. Dev.
20-24	574.5283	2331.1153
25-29	1187.5	3678.0328
30-34	3184.8281	10287.088
35-39	2222.2222	5823.3967
40-44	1378.5714	3905.3769
45-49	3982.619	12967.456
50-54	1180	3015.0656
55-59	2125	5015.7361
60-64	6.25	16.891598
65+	455	1559.5156
Total	1771.1055	6668.3606

Age	Summary of Value of Livestock Mean	Std. Dev.
20-24	118.86792	356.2932
25-29	115.625	301.97158
30-34	1873.913	4144.8285
35-39	2078.3333	5747.0139
40-44	1807.1429	3096.6065
45-49	1550.7143	3911.5504
50-54	2040	3142.2153
55-59	3612.5	4769.5878
60-64	4081.25	6317.5706
65+	6607.1429	15485.093
Total	2144.2991	6296.2257

Age	Summary of Value of Cars Mean	Std. Dev.
20-24	735.84906	1747.5361
25-29	662.5	2017.0154
30-34	5876.5217	16316.535
35-39	1444.4444	2975.7933
40-44	1785.7143	3016.5051
45-49	7900	20432.793
50-54	2200	3018.9059
55-59	3000	3435.7456
60-64	1837.5	3141.8372
65+	3785.7143	7643.0607
Total	3042.4766	9912.2712

Age	Summary of Value of Real Estate Mean	Std. Dev.
20-24	0	0
25-29	0	0
30-34	10347.826	25612.397
35-39	16222.222	34282.218
40-44	15571.429	37617.551
45-49	53000	47885.534
50-54	20800	18289.624
55-59	29750	22851.601
60-64	5000	8846.5174

65+	32142.857 45251.908
Total	17004.673 33198.431

	Summary of Value of Consumer Durables	
Age	Mean	Std. Dev.
20-24	489.62264	572.81008
25-29	1643.75	1994.4504
30-34	5386.9565	10270.702
35-39	7144.4444	8161.8687
40-44	5139.2857	3739.9709
45-49	6686.4286	8458.2887
50-54	5780	6280.1494
55-59	5568.75	6150.9775
60-64	1556.25	2352.4415
65+	5025	7939.6216
Total	4473.0841	7067.7527

	Summary of Value of Debts	
Age	Mean	Std. Dev.
20-24	247.69811	564.84762
25-29	512.5	750.21274
30-34	1539.8696	2876.6248
35-39	602.77778	1338.7341
40-44	2428.5714	3971.9311
45-49	5510.7143	16831.723
50-54	820	881.76938
55-59	53.375	110.80999
60-64	163.04348	231.7019
65+	71.428571	192.90553
Total	1270.7494	5741.3908

| Summary of Total Assets

Age	Mean	Std. Dev.
20-24	1918.8679	3955.9987
25-29	3609.375	7208.0234
30-34	26670.046	44549.35
35-39	29111.667	40020.25
40-44	25682.143	44864.135
45-49	73119.762	79517.627
50-54	32000	21759.184
55-59	44056.25	32051.665
60-64	12481.25	16636.333
65+	48015.714	69337.041
Total	28435.638	48039.339

| Summary of Net Worth

Age	Mean	Std. Dev.
20-24	1671.1698	3880.3912
25-29	3096.875	7002.0772
30-34	25130.176	44104.809
35-39	28508.889	39535.084
40-44	23253.571	42487.34
45-49	67609.048	70184.353
50-54	31180	21737.056
55-59	44002.875	32059.756
60-64	12860.87	16771.031
65+	47944.286	69383.279
Total	27231.483	45891.938

PRIMARY MOTIVE FOR SAVING DURING WORKING YEARS

	Age									
Motive for saving	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	Total
illness and other une	4.65	10.87	10.29	14.81	16.67	23.81	22.58	25.00	26.92	15.69
life after retirement	0.00	2.17	5.88	7.41	7.14	19.05	32.26	37.50	38.46	13.03
children's education	6.98	13.04	19.12	18.52	26.19	21.43	19.35	16.67	11.54	17.29
to leave a legacy for	0.00	8.70	11.76	12.96	14.29	11.90	16.13	12.50	15.38	11.17
purchase, constructio	11.63	32.61	33.82	25.93	19.05	9.52	0.00	0.00	0.00	18.35
purchase of consumer	37.21	21.74	8.82	9.26	9.52	0.00	0.00	0.00	0.00	10.90
travel & other leisur	13.95	6.52	0.00	5.56	2.38	2.38	6.45	8.33	7.69	5.32
no specific purpose b	16.28	4.35	5.88	5.56	4.76	4.76	3.23	0.00	0.00	5.59
other	9.30	0.00	4.41	0.00	0.00	7.14	0.00	0.00	0.00	2.66
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

PRIMARY MOTIVE FOR SAVING AFTER RETIREMENT

Motive for saving	Age 65+	Total
illness and other une	38.10	38.10
life after retirement	7.14	7.14
children's education	14.29	14.29
to leave a legacy for	30.95	30.95
other	9.52	9.52
Total	100.00	100.00

PRIMARY SOURCE OF INCOME DURING RETIREMENT

Income source	Age 65+	Total
business, professiona	42.86	42.86
rent, interest and di	2.38	2.38
pension	38.10	38.10
maintenance & gifts f	7.14	7.14
support from children	9.52	9.52
Total	100.00	100.00