

VOLUNTARY HOUSEHOLD SAVING IN SOUTH AFRICA: 2005 TO 2017

by

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Exact wording of the title of the thesis as appearing on the electronic copy submitted for examination:

Voluntary household saving in South Africa: 2005 to 2017

I declare that the above thesis is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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Abstract

Research shows an inadequate saving culture among South Africans, including insufficient provision for retirement. This research focuses on voluntary household saving in South Africa, which is defined as household saving(s), excluding any amount (fully or partly) sponsored by either an employer or the state, with the aid of the multi-pillar retirement provision system recommended by the World Bank. Several saving theories are investigated to enable a qualitative or descriptive analysis to analyse household saving behaviour using both income statement (saving) and balance sheet (savings or net worth) approaches. Data is sourced from the national accounts, as well as two household surveys (the Income and Expenditure Survey and the Living Conditions Survey conducted by Statistics South Africa) and a longitudinal household panel study (the National Income Dynamics Study implemented by the Southern Africa Labour and Development Research Unit). The research questions centre on what households' allocations and preferences related to voluntary saving(s) instruments in South Africa are, and how these have evolved over the period 2005 to 2017. The study finds that voluntary saving, as measured by both an income statement and balance sheet approach, contributes significantly to household saving(s) in South Africa and that the World Bank's multi-pillar pension design system is highly relevant for the country and should be promoted by government. Recommendations include that more research should be done to construct a holistic view of all five of South Africa's saving pillars, while the sections in the national accounts dealing with household saving, savings and the link between the two, should be revised and updated as soon as possible by the relevant authorities.

KEY TERMS:

Voluntary household saving; Household saving; Household wealth; Theories on saving; Multi-pillar pension design; South African System of National Accounts; National Financial Account; Regular surveys; Longitudinal studies; Income and Expenditure Survey; Living Conditions Survey; National Income Dynamic Study

Dedication

I dedicate this thesis to my wife, Marinda and our three children, Stephan, Sanmari and Charlotte.

Fanie Joubert

Pretoria

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Soli Deo Gloria.

Fanie Joubert

Pretoria

Abbreviations

ANC	African National Congress
APB	Accounting Practices Board
ASGISA	Accelerated and Shared Growth Initiative for South Africa
ASISA	Association for Savings and Investment South Africa
BASA	Banking Association of South Africa
BBBEE	Broad Based Black Economic Empowerment
BC	Before Christ
BMR	Buro of Market Research
BoP	Balance of payments
BRICS	Brazil, Russia, India, China and South Africa
Bt20	Birth-to-Twenty cohort study
CAPI	Computer Assisted Personal Interview
CASI	Computer-Aided Self-Completion Interview
CATI	Computer Assisted Telephonic Interview
CFK	Consumption of fixed capital
CIS	Collective Investment Schemes
CISCA	Collective Investment Schemes Control Act
CIT	Corporate income tax
CoFI	Conduct of Financial Institutions
COICOP	Classification of Individual Consumption According to Purpose
COSATU	Congress of South African Trade Unions
CPD	Continuous professional development
CPI	Consumer Price Index
CSM	Continuing sample members
DTI	Department of Trade and Industry
ESKOM	Electricity Supply Commission
ETF	Exchange traded funds

FAIS	Financial Advisory and Intermediaries Services
FE	Full employment
FEDUSA	Federation of Unions of South Africa
FET	Further Education and Training
FICA	Financial Intelligence Centre Act
FNB	First National Bank
FPL	Food poverty line
FRS	Federal Reserve System in the United States
FSB	Financial Services Board
FSC	Financial Sector Charter
FSCA	Financial Sector Conduct Authority
FSP	Financial services provider
FSR	Financial Sector Regulation
GAAP	Generally Accepted Accounting Principles
GDP	Gross domestic product
GEAR	Growth, Employment and Redistribution development plan
GFC	Global financial crisis of 2008
GHS	General Household Survey
GNDI	Gross national disposable income
GNI	Gross national income
IBA	International Banking Association
IES	Income and Expenditure Survey
IFRS	International Financial Reporting Standards
IS-LM	Investment-saving, liquidity preference money supply model
ISCOR	Iron and Steel Industrial Corporation Limited
JIPSA	Joint initiative and priority skills acquisition
JSE	Johannesburg Stock Exchange
LCH	Life-cycle hypothesis
LCS	Living Conditions Survey

LFS	Labour Force Survey
LPL	Lower poverty line
LSM	Living Standards Measure
NACTU	National Council of Trade Unions
NASASA	National Stokvel Association of South Africa
NCA	National Credit Act
NCR	National Credit Regulator
NDP	National Development Plan
NEDLAC	National Economic Development and Labour Council
NFA	National Financial Account
NIDS	National Income Dynamics Study
NIPA	National Income and Production Accounts
NPISH	Non-profit institutions serving households
NSFAS	National Student Financial Aid Scheme
NSSF	National Social Security Fund
OECD	Organisation for Economic Cooperation and Development
PIH	Permanent income hypothesis
PIT	Personal income tax
POCA	Prevention of Organised Crime Act
POCDATARA	Protection of Constitutional Democracy against Terrorists and Related Activities Act
PSCE	Private sector credit extension
PSID	Panel Study of Income Dynamics
RDP	Reconstruction and Development Programme
ROCSA	Rotating Credit and Savings Association
RSA	Republic of South Africa
SAIA	South African Insurance Association
SAICA	South African Institute of Chartered Accountants
SALDRU	Southern Africa Labour and Development Research Unit

SARB	South African Reserve Bank
SARS	South African Revenue Service
SHG	Self-help groups
SNA	System of National Accounts
StatsSA	Statistics South Africa
STC	Secondary Tax on Companies
TCF	Treating customers fairly
TFP	Total factor productivity
TFSA	Tax-free savings account
TSM	Temporary sample members
UK	United Kingdom
UN	United Nations
UNISA	University of South Africa
UPL	Upper poverty line
USA	United States of America
WITS	University of the Witwatersrand

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Chapter One: Overview and rational

1.1 Introduction and rational for the study

Research shows an inadequate saving culture among South Africans, including insufficient provision for retirement (see Aron and Muellbauer, 2000 and 2012; Simleit, Keeton and Botha, 2011; Vieg, 2014; Liberty, 2014). This can strain the economy by limiting investment and capital flows, while also adding pressure to the state's finances as it needs to provide a social safety net for vulnerable citizens, including the elderly. The foreign sector (or foreign savings) are already significantly funding South Africa's gross national saving gap, but these flows remain volatile and cannot be relied on indefinitely.

South Africa is facing major challenges related to unemployment, poverty and inequality (Aron and Muellbauer, 2000; Collins, 2005; Van der Berg, Burger, Louw and Yu, 2007; Orthofer 2015 and 2016). The state is trying to rectify this via the redistribution of income. However, pressure on government expenditure emanating from, among others, the magnitude of the state's social assistance programmes, financial sustainability of State Owned Enterprises (SOEs) and free tertiary education to lower income groups, raises doubts over the sustainability of its resources (Rossouw, Joubert and Breytenbach, 2014). The World Bank (2005:41) warns of possible moral hazard problems or the possibility of social assistance serving as a disincentive to private saving due to crowding-out factors or by increasing the utility of leisure relative to that of work (Genesis Analytics, 2008:25). Meagre economic growth (notably since 2012) is further hampering households' employment opportunities and financial prospects (StatsSA, 2016).

It is imperative that research provides an accurate and detailed picture of the saving behaviour of South African households and determines whether households are proactively attempting to safeguard themselves financially. This study focuses on household saving with the aim to provide insight into the saving culture of South Africans, with a specific focus on voluntary saving habits.

Retirement provision forms an important part of the saving motives of households. The World Bank (1994 and 2005) recommends that a well-functioning pension system is vital to avert what they termed an "old-age crisis". The bank has accordingly designed and proposed a multi-

pillar system or retirement provision made of a combination of five¹ basic elements. These elements (or pillars) include:

- a) A non-contributory or “zero² pillar” (in the form of a demo-grant or social pension);
- b) A “first³ pillar”, making provision for a mandatory contribution public pension plan (aimed at replacing some portion of income);
- c) A “second pillar”, comprising a mandatory contribution private pension plan (often consisting of an individual savings account);
- d) A voluntary “third pillar”, which is privately managed (aimed to improve pension benefits or enable early retirement); and
- e) A broadly defined voluntary “fourth pillar”, termed “family networks and housing”, including any items not covered by the first four pillars (this includes intra-family or intergenerational sources of both financial and non-financial savings, as well as non-cash, government funded provisions such as medical care, water and sanitation, and housing) (World Bank, 2005).

Van der Merwe (2004⁴) analysed the occupational (“second”) pillar in South Africa and concluded that the voluntary pillar should receive more attention to ensure that the needs of all citizens are met. It is against this backdrop that this study aims to analyse voluntary saving by South African households.

As far as household saving in South Africa is concerned, there is often the general notion that households are “dis-savers” without much attempt to delve into the details and definitions, or the reasons as to why this may or may not be the case. This study shows that the latter notion is at best superficial as it overlooks various definitional and measurement issues required to provide a more holistic view of household saving. This includes the imperative distinction between the flow and stock concepts of saving – also referred to as household saving versus household wealth – and the link between the two concepts. Household wealth has, for example,

¹ Earlier research identified only three pillars: a mandatory publicly managed pillar, a mandatory privately managed pillar and a voluntary pillar (World Bank, 1994)

² Similar to the social assistance programmes provided to elderly individuals under the State Old Age Grant (SOAG) in South Africa.

³ Typical examples of “first pillar” arrangements include the UK and USA social security programmes. South Africa does not have a similar programme.

⁴ Note that the work by Van der Merwe (2004) was published before the pillars were updated to include five elements. His work thus relates to the then “mandatory privately managed” pillar.

been measured and included in the System of National Accounts (SNA) only as recently as 2006 (Aron, Muellbauer and Prinsloo, 2006; Kuhn, 2010; Orthofer, 2015 and 2016).

Lastly, it is important to note that, although ample research about household saving in general in South Africa is available, the author could not find any example of research that looks at voluntary household saving. Although falling outside the scope of the study, a future goal could be to provide a complete picture for South Africa of all the various saving pillars and their linkages.

1.2 Problem statement and research questions

In this section the problem statement and sub-problems as well as the research questions are highlighted.

1.2.1 Problem statement

The intention of this research is to analyse and evaluate the size and composition of voluntary household saving in South Africa from 2005 to 2017. The reason this period was chosen is mainly based on the availability of the various household surveys used for analysis in the research.

Sub-problem 1:

To provide a workable definition of voluntary household saving.

Sub-problem 2:

To determine households' allocations and preferences related to voluntary saving(s) instruments in South Africa from 2005 to 2017, from both a flow and stock perspective.

Sub-problem 3:

To determine the role of voluntary household saving within the greater saving landscape in South Africa.

1.2.2 Research questions

In this thesis the aim is to answer the following research questions:

1. What are households' allocations and preferences related to voluntary saving(s) instruments in South Africa?
2. How have households' allocations and preferences related to voluntary saving(s) instruments in South Africa changed during the period 2005 to 2017?

1.3 Aim of the research

The aim of this research is therefore to highlight the importance of voluntary saving in South Africa. More specifically, to determine to what extent households make use of voluntary saving products, especially in cases where there is no mandatory aspect (such as an employer/employee relationship) present. Insights and knowledge are generated regarding the saving culture of South Africans.

1.4 Overview of the research design and methodology

The research design is mainly qualitative and of a descriptive analysis nature. Data of the national accounts, as well as two household surveys and a household study, is used to analyse households' saving behaviour.

The national accounts data is analysed in order to look at household saving from a macroeconomic perspective. Both the flow and stock measurements are calculated and analysed as well as the important link between the two. The data is sourced from the South African Reserve Bank (SARB) and is presented in chapter 4.

Two household surveys, namely the Income and Expenditure Survey (IES) and the Living Conditions Survey (LCS) are used to analyse saving behaviour further. They are complementary studies implemented on a rotating basis by Statistics South Africa (StatsSA) and are well established and widely used for research. Statistics from both the IES and LCS are analysed for household income, and for saving and voluntary saving variables. Insight of household behaviour using voluntary saving is gained by cross tabulating to variables such as province, settlement type, race, gender, household size and income (poverty lines). However,

as these surveys focus on flow data, only the income statement approach can be used to analyse the data.

The National Income Dynamics Study (NIDS) is the first national representative longitudinal panel study for South Africa. The study obtains data from survey waves that started in 2008 and are repeated roughly every two years. This means that five waves of data were available at the time of this study. Data is obtained from the Southern Africa Labour and Development Research Unit (SALDRU), based in the School of Economics at the University of Cape Town. Derived variables are used to compile an income statement (flow) and balance sheet (stock) view of voluntary saving(s) in South Africa. Statistical techniques used include cross-tabulations and quantile analysis, while mobility (between waves) is analysed with the use of transition matrices. The methodology used and findings from the IES, LCS and NIDS are presented in chapters 5 and 6 respectively.

1.5 Definition of terms and limitation of the study

An important, yet easily confusing, distinction needs to be made between the terms **saving** and **savings**. Grammatically, **saving** is usually seen as a verb, such as “saving money when buying an item on special” or “saving for a special occasion”. **Savings** is used as a noun, such as “I’m going to put some of my savings into a down payment on a car” or “I asked my financial advisor for a summary of my retirement savings”. The reality is that the uses of both words stem from the same origin, “save”, and are – as expected – often explained together in dictionaries.

Conceptually, with regard to economics, **saving** is seen as a flow concept, for example, viewed as “after-tax income not consumed” or “the difference between income and expenditure”. In contrast, **savings** is seen as a stock concept, as in “your net worth calculated by subtracting your liabilities from your assets” or in reference to “savings institutions” (Poole, 2007:3; Orthofer, 2015:3; Oxford English Dictionary, 2016; Mohr, 2016:39; South African Reserve Bank, various quarterly bulletins).

To try to limit confusion, the study will, as far as possible, clearly indicate whether the flow or stock concepts are referred to. The literature also favours this measure, typically differentiating between **household saving** (saving as measured using the income statement approach or the flow measure), and **household wealth** (savings as measured by a balance sheet view or the

stock measure). Given the direct links between the two concepts (as explained in detail in chapter 4) and to be able to provide a full scope of analysis, this study will look at both measures.

Gross national saving (for the economy as a whole) consists of saving by households, corporate saving, saving of the general government, and consumption of fixed capital (depreciation). **Net national saving** is equal to gross saving minus the consumption of fixed capital (Mohr, 2016:39-40).

A **household** is defined as “a person, or group of persons, who occupy a common dwelling unit for at least four days in a week, and who provide themselves with food and other essentials for living” (StatsSA, 2002:90).

Dissaving by households is defined as final consumption expenditure financed from past savings or through credit. In this sense it is possible that a single household can simultaneously save and dissave (Mohr, 2016:42). The net effect depends on the magnitudes of both.

Contractual household saving is defined as “the act of saving against agreed contracts” (e.g. life assurance premiums, pension fund contributions or retirement annuities); while **discretionary household saving** is “all current disposable income that is not spent or saved contractually” (e.g. deposits in savings accounts and fixed deposits) (Mohr, 2016:42).

The definition of voluntary household saving is compiled using a combination of different definitions, notably those by the World Bank (2005), as well as Van der Merwe (2004). The World Bank’s (2005) “third” and “fourth” pillars both include the element of voluntary participation. The “third pillar” is described as “arrangements that can take many forms (individual, employer sponsored, defined benefit, defined contribution), but are essentially flexible and discretionary in nature”. Its funding (or collateral) consists of financial assets. Genesis Analytics (2008) simplifies this by referring to a “voluntary diversion of current income into a financial vehicle to provide for future consumption”. The “fourth pillar” is also aimed at voluntary arrangements and, importantly, includes housing (i.e. residential property market) in its description. By combining the “third” and “fourth” pillars, both financial and non-financial items are included. Van der Merwe (2004:309) defines voluntary saving as “(enabling) persons who may or may not be members of an occupational pension fund to make (additional) provisions for their retirement” and that it further can include “persons employed in industries without occupational (*interpreted as pillar 2*) pension schemes”, the “self-

employed”, “low-income groups” and “those employed in the informal sector”. Also important is Van der Merwe’s (2004) reference to the fact that this should also be able to capture “small and irregular” contributions.

For the purpose of this study, **voluntary household saving(s)** is defined as **household saving(s), excluding any amount (fully or partly) sponsored by either an employer or the state.**

The definition ensures that the motive for saving is voluntary, or determined by individuals themselves. It deviates slightly from the World Bank’s definition of the “third pillar”, which includes “employer sponsored” arrangements, because this is mandatory in nature. It also differs from Mohr’s (2016) definition of discretionary saving, as voluntary saving is seen as a “broader” concept that may also be contractual in the sense that a contract exists between the individual (saver) and the product supplier or intermediary.

Non-financial items for the purpose of this study are restricted to fixed domestic property.

Heeding Van der Merwe’s (2004) position, “small and irregular” contributions should, by implication, be captured.

Where applicable, the figures should relate to after-tax allocations to saving(s).

The main limitation of this study is the limitations related to the data – specifically detailed quantitative saving(s) data. As far as the aggregate (national accounts) data is concerned, it is difficult to determine which part of saving(s) is sponsored by an employer or the state. Methodological differences in the definitions and sampling of household level data further complicate the analysis.

1.6 Division of chapters

The layout of the chapters is as follows:

Chapter 2 provides a review of the literature and theories related to household saving, including a review of the empirical literature into the determinants of household saving(s)

Chapter 3 provides an overview of the saving landscape in South Africa. The chapter includes a brief historic overview, and a calculation of national saving and its constituents (including household saving). It also looks at the pension system, regulation and incentives to promote saving.

Chapter 4 provides the measurement and analysis of household saving using the South African SNA.

Chapter 5 outlines the methodology for processing and analysis of the data as obtained from two household surveys and five waves of data from the household study.

Chapter 6 presents the analysis and findings from the household surveys and study.

Chapter 7 provides the conclusions and recommendations.

Chapter Two: Literature review

2.1 Introduction

Chapter 2 reviews the literature and theory concerning saving in the economy, while special attention is given to household saving. As explained in chapter 1, the focus of this study is on voluntary (as opposed to mandatory) saving of households. As far as the literature on saving is concerned, this distinction is mainly of an academic nature. It is important to note that this difference will feature strongly in later chapters, however, in the following theory and literature review the concept of saving is used in general terms or as a collective for the various types of saving.

Early economic writings use the (descriptive) word *abstinence*, which is today referred to as saving. Senior (1951:58-59) writes that:

It is recognised instantly in the conduct of a man who allows a tree or a domestic animal to attain its full growth; but it is less obvious when he plants the sapling or sows the seed corn. The observer's attention is occupied by the labour, and he omits to consider the additional sacrifice made when labour is undergone for a distant object... To abstain from the enjoyment which is in our power, or to seek distant rather than immediate results, are among the most painful exertions of the human will.

Towards the end of the 19th century Alfred Marshall (1920⁵:133) renamed the concept of saving as *waiting* from consuming, or postponing consumption. His formulation highlighted the fact that some of the wealthiest people live in luxury and certainly do not need to practice abstinence, in the sense of sacrificing present pleasure. Regarding wealth, Marshall's interpretation was that the accumulation of wealth often has to do with some postponement or deliberate waiting before enjoyment, for the sake of increasing future resources, and given the right incentives. This made the concept less colourful, but also less controversial.

Important to this study is the strong focus that Marshall gives to human nature and the notion that waiting might be easier, given greater future rewards. Marshall uses the example of

⁵ First edition, written in 1890. The 1920 version is the 8th edition.

wealthy merchants who became willing to stop their (laborious) trading activities and rather lend out money, if the interest rate was favourable (and vice versa). This highlights the fact that wealth is accumulated not only for its own sake, but also to ensure that there is some positive return on it. It also emphasises the significant role that the level of interest rates plays in these decisions (Marshall, 1920:134). Noteworthy (albeit controversial) is Marshall's disregard for the origins of wealth, whether it be from exchange, inheritance, legitimate or unscrupulous forms of speculation or even fraud.

Section 2.2 provides a historic view and indicates how saving fits into the field of economics, while a detailed description of the most prominent early theories of saving is given in section 2.3. The role of saving in economic growth theories is discussed in section 2.4, followed by its role in fiscal and monetary policy, discussed in sections 2.5 and 2.6 respectively. Section 2.7 provides an overview of the theory and calculations of the various parts contributing to aggregate saving in the economy. Section 2.8 looks at the intertemporal characteristics of household saving as taken from microeconomic theory. Section 2.9 provides a review of empirical literature into the determinants of household saving(s) while some concluding remarks follow in section 2.10.

2.2 The history of saving and its general relevance to economics

2.2.1 Historic overview

Taking evidence from the studies of archaeology and anthropology, the domestication of plants and animals enabled human civilisation to make advances. It also enabled humans to settle down, albeit periodically, as opposed to the constant need to move around in search of food that is typical of hunter gatherer tribes. Some of the first definite signs of domesticated plants date back to around 10,500-10,100 BC and include annual grasses (including emmer, einkorn and barley) found at farming village sites in south-west Asia (Zohary, Hopf and Weiss, 2012:1). At its core, the ability to store part of the harvest, to be replanted in future – or when kinder weather returned – is saving resources with the aim of future utility (survival).

Closer to home an example of extraordinary willpower is evident from the Khoisan tribes. This is the name by which the earliest indigenous peoples of southern Africa, the Khoi (Hottentots) and the San (Bushmen), are known. These people dominated the sub-continent for millennia and their semi-nomadic existence was governed by the seasons and the movement of game.

Their ability to find food and save liquid for times of drought remains remarkable. The San randomly stored water in ostrich shells, which they buried deep below the sandy desert surface and had the ability to recover with extreme accuracy (Encounter South Arica, 2017) – certainly examples of both saving and wealth⁶, when living in a dry, desert landscape.

Valuable life lessons that can be drawn regarding the use of scarce resources (grain, water, money or other) and is often featured in fables. A classic example is the Aesop fable titled: *Grasshopper and the ants*, wherein the ants worked hard during summertime to make sure that they have enough food stored away for winter, while the grasshopper spend his days lazing around. When winter and snow arrived the grasshopper was starving and had to go to the ants to beg for some scraps. This story is attributed to the ancient Greek storyteller Aesop, who lived between 620 and 564 BC (Aesop Fables, 2016).

The Greek philosopher, Aristotle (384-322 BC), distinguished between natural acquisitions, which refers to life's necessities (e.g. farming, fishing and hunting); and unnatural acquisitions, which involved acquiring goods beyond one's need. He strongly disapproved of the latter "art", including the sake of accumulating money simply for the sake of increasing one's wealth (Brue and Grant, 2013:1).

The economic doctrine known as the Mercantilist School (or Mercantilism) appeared between the Middle Ages and the Physiocratic⁷ School (or laissez-fair), roughly around AD 1500 to 1800. As part of the major tenets of the Mercantilist School, precious metals (especially gold and silver) were seen as the most desirable form of wealth and directly equated to the wealth of a nation. A surplus of exports over imports was seen as vital, as this enabled a country to gain in the payment (and accumulation) of precious metals. Nations would, even during times of war, still export goods to their enemies, as long as the products were paid for in precious metals (Brue, 2000:17-19).

Whereas the modern concept of saving is today generally seen as a "positive" (at least as far as its perceived positive impact on household finances and the economy in general are concerned),

⁶ As formally defined in chapter 4.4.

⁷ The Physiocratic School reached prominence in France from 1756 to 1776, and was a reaction to the harsh feudal characteristics of the mercantilist regime. The term "physiocrat" means "rule of nature" and the idea was that laws of nature should govern human societies. The phrase "laissez-faire" is credited to Vincent de Gournay (1712-1759) and means "let the people do as they please without government interference". It should be evident that the major tenets of this school included limited government interference in the economy, an emphasis shift from mineral riches (à la Mercantilists) to agriculture and the notion that only the landowner should be taxed, given that only agriculture produce a surplus, which the landowner receives in the form of rent (Brue and Grant, 2013).

this was not always the case. It must have been rather difficult for the early 20th century academics to publish work related to the topic. Keynes published his General theory (1936) during the time of the Great Depression (1929-39). This was a time when saving was seen as “suspicious” and “potentially disruptive to the economy and harmful to social welfare”. What was termed “oversaving” was regarded as a major contributor to the Great Depression and there was widespread fear that this problem could come back to haunt the post-war era, possibly in the form of “saving outstripping the need for capital accumulation”. So real were these fears that it prompted the formation of the Stagnationist school of thought, quite prominent in the 1940s (Modigliani, 1986:297).

These negative perceptions lead to the importance of saving being downplayed significantly and analysed statically, or in its relation to the consumption function as a determinant of aggregate demand. Saving was seen as “one of many goods on which consumers could spend their income” and “little attention was given to why rational consumers would choose to allocate their income to saving”. It was during only the latter part of the 1940s that empirical contributions provided new insights into these simplistic views of saving (Modigliani, 1986:297-99).

2.2.2 Where saving fits into economics

Using the popular definition that economics in general studies how agents satisfy their unlimited needs, using limited resources (Robbins, 1932:15), it should become evident that the concept of saving is likely to feature strongly in most sub-fields of the science. The rest of this chapter supports this notion, including clear theoretical links to major economic branches such as macro- and microeconomics, public finance and monetary economics. However, by focusing on the behaviour of households, the topic of this study falls mainly within the fields of financial economics, behavioural economics (or behavioural finance) and economics of the family (or family economics).

Financial economics is the interface between finance and economics and looks at how financial instruments are traded among agents in financial markets. From an economic perspective, agents trade time, risks and beliefs (Hens and Rieger, 2010:5). It is important to note that almost all consumption choices have intertemporal effects, which means that economic agents have the ability to transfer resources over periods of time, primarily due to the ability to save or borrow (see section 2.8). Uncertainty has a strong impact on how these choices are made;

agents have to constantly weigh up the likely future utility of their choices against the opportunity cost of time and risk (Jones, 2008:1-3). This constant requirement to make choices provides a logical link to the next study field within which this study falls, namely behavioural economics.

Behavioural economics⁸ aims to complement the findings of economics by providing them with more realistic psychological foundations. It draws strongly from behavioural decision research (decision sciences) and typically classifies research into two broad categories, namely judgement research (the process of estimating probabilities) and choice (process of deciding among different actions). It relaxes some of the stringent assumptions of economic theories by accepting that human behaviour is often far from being “procedurally rational” and, in actual fact, is likely to be highly complex (Camerer, Louwenstein and Rabin, 2004:1-12).

A classic example relates to the Life-Cycle/Permanent Income Hypothesis (discussed in detail in section 2.3.3) where individuals form a calculated estimate (“guess”) of future income and accordingly try to balance consumption and saving over their lifespans. Behavioural economics introduces the concept of mental accounts and how different sources of income are in actual fact kept track of in different mental accounts, for example, a current income account, an assets account or a future income account. This leads to vast differences between the marginal propensities to consume between these different accounts, and predicts important deviations from the life-cycle saving theory (see for instance Thaler, 1990:194 and 1999).

Economics of the family is sometimes referred to as the “new home economics” and by the 1930s, “family economics and home management” had become a separate field of study within home economics. It utilises theory from both the production and consumption sides to better understand the behaviour of individuals and the family. It therefore goes beyond the neoclassical consumer theory (basic consumer’s decisions related to the purchase of goods and services) and also sheds light on households’ investment in monetary assets and human capital, as well as (more sociologic) topics such as fertility, marriage and divorce decisions of individuals and families (see for instance Becker, 1965 and 1991; Becker and Lewis, 1974; Manser and Brown, 1980; McElroy and Horney, 1981). Similar to behavioural economics, it aims to provide additional explanations of specific economic phenomenon where existing theories of economics seem to be lacking (Bryant and Zick, 2006:1-3).

⁸ Also psychological economics, see for instance: Katona (1975); or economic psychology, see for instance: Van Raaij (1981:22); Furnham (1985:355).

2.3 Theories on saving

Is the consumer rational or is he irrational? This is not the right question to ask. The consumer is a human being, influenced by his past experience. His sociocultural norms, attitudes, and habits, as well as his belonging to groups, all influence his decisions. He is apt to prefer shortcuts, follow rules of thumb, and behave in a routine manner. But he is also capable of acting intelligently. When he feels that it really matters, he will deliberate and choose to the best of his ability.
(Katona, 1975:218).

Early 20th century writings related to saving include various landmark studies (see for instance Fisher (1930); Keynes (1936); Kuznets (1946); Brady and Friedman (1947); and Duesenberry (1949)).

Using earlier and updated work from some of these authors, modern theories on saving and consumption behaviour are centred on a combination of the permanent income hypothesis and the life-cycle hypothesis. These theories provide important theoretic links between income, consumption, saving and retirement, and so provide a base from which the analysis of the “sufficiency of savings” rests (Simleit et al. 2011:2). Below are highlights of the most prominent hypothesis and findings from some of these studies.

2.3.1 John M Keynes

2.3.1.1 General theory

Keynes (1936, VII:61) writes that “(a)midst the welter of divergent usages of terms it is agreeable to discover one fixed point...everyone is agreed that saving means the excess of income over expenditure on consumption”. Given this, he postulates that any doubts about the meaning of saving must then be due to doubts about the meanings of either income or (expenditure on) consumption.

Using the example of an entrepreneur who buys and sells finished output, in this case income is defined as “being the excess of the value of his finished output sold during the period over his prime cost” (Keynes, 1936, VII:53). Keynes differentiates between the entrepreneur and his capacity as a producer and consumer to arrive at a definition of *net income*, which also takes

into account (deducts) *supplementary costs*, the latter being defined as the excess of the expected depreciation of equipment over its user cost (Keynes, 1936, VII:56). Expenditure on consumption, during any period, is simply defined as “the value of goods sold to consumers”, including that “(a)ny reasonable definition of the line between consumer-purchasers and investor-purchasers will serve us equally well, provided that it is consistently applied” (Keynes, 1936, VII:61).

To formalise (quantify) the above definitions, Keynes make use of four symbols:

A : Aggregate sales of all kinds,

A_1 : Aggregate sales from one entrepreneur to another,

U : Aggregate user costs of entrepreneurs, and

V : Supplementary costs;

to arrive at the following formulae:

$$\text{Income} = A - U \quad \text{Equation 2.1}$$

$$\text{Consumption} = A - A_1 \quad \text{Equation 2.2}$$

$$\text{Saving} = A_1 - U \quad \text{Equation 2.3}$$

$$\text{Net saving} = A_1 - U - V. \quad \text{Equation 2.4}$$

Related to the propensity to consume, Keynes’ view was that it depends partly on three (separate yet interactive) factors (Keynes, 1936, VII:90-91):

- i. the amount of income earned;
- ii. objective attendant circumstances; and
- iii. subjective needs and psychological propensities and habits of individuals.

The objective circumstances include items such as changes in the wage-unit, windfalls, fiscal policy and changes in expectations regarding current and future income levels. But more importantly (for this study) are the subjective factors including Keynes’ eight motives (or objects of a subjective character) for saving (or which lead individuals to refrain from spending their incomes). These include the following:

- i. Precaution (to build up reserves for unforeseen events)

- ii. Foresight (provision for old age, education, maintenance of dependents)
- iii. Calculation (to enjoy larger future income, e.g. interest or appreciation)
- iv. Improvement (in standard of life due to gradually increasing expenditure)
- v. Independence
- vi. Enterprise (speculative or business prospects)
- vii. Pride (bequest)
- viii. Avarice (miserly instinct against avarice, to spend less) (Keynes, 1936, VII:107-108).

Keynes (1936, VII:109) further postulates that these factors will “vary enormously” between and within economic societies, based on variables such as the level of education, religion, hopes and experiences, scale and technique of capital equipment, distribution of wealth and the established standards of life.

2.3.1.2 On saving and investment

The definition of investment builds strongly on that of income as given above. First, *current investment* is defined as “the current addition to the value of the capital equipment which resulted from the productive activity of the period”. This is the part of income not used for consumption and is equal to saving as defined above (see equation 2.3). Secondly, the same formula as for net saving is used to define *net investment* as the net addition to capital equipment, after allowing for normal impairment⁹ (Keynes, 1936, VII:62-3).

Hereafter Keynes arrives at the highly significant statement that “...*(as) the amount of saving is an outcome of the collective behaviour of individual consumers and the amount of investment of the collective behaviour of individual entrepreneurs, these two amounts are necessarily equal, since each of them is equal to the excess of income over consumption...*”. From this, the equality of saving and investment necessarily follows (Keynes, 1936, VII:63):

$$\text{Income} = \text{value of output} = \text{consumption} + \text{investment} \quad \text{Equation 2.5}$$

$$\text{Saving} = \text{income} - \text{consumption} \quad \text{Equation 2.6}$$

Therefore

$$\text{Saving} \equiv \text{Investment}. \quad \text{Equation 2.7}$$

⁹ Normal impairment in the value of capital apart from it being used and from windfall changes in the value of the equipment chargeable to the capital account.

The equivalence between saving and investment emerges from the bilateral character of the transactions between the producer and the consumer, or the purchaser of capital equipment (Keynes, 1936 VII:63). Important distinctions exist between the individual unit and the collective (aggregate) as well as the notion that variables such as consumption, saving and investment should be analysed, keeping in mind the two (multi) sided transactions that they actually are.

The above theoretical specification is proven using a national accounts type model of income (Y), consumption (C), investment (I) and saving (S), spanning over two periods. Important is that the analysis focused on income rather than output, and that the identity is a monetary or nominal proposition (Tily, 2007:153-154).

However, discoveries are rarely accepted as truths without a reasonable amount of academic discourse. The savings-investment debate is no exception and became known as the “alternative theories” debate. Tily (2007:163) provides an informative summary of no less than 13 published correspondences on this topic, for the period 1932 to 1935, between, among others, Keynes, Robinson, Shaw and Kahn.

Further discourse related to the concepts of *ex ante* (loosely translate as meaning before the fact) and *ex post* (after the fact) savings as introduced by Bertil Ohlin (See Ohlin 1937a, 1937b as well as Ohlin, Robertson & Hawtrey 1937). These concepts relate to planned saving (*ex ante*) and unexpected saving (*ex post*), also referred to in the literature as voluntary and involuntary saving. *Ex post* saving could be distinguished between existing *ex ante*, or voluntary saving and “new saving” created by new activity and price changes. The new saving could be described as involuntary, or being a macroeconomic consequence of an increase in investment activity (Tily, 2007:155). Keynes received strong criticism for his (seemingly) indifferent use of the terms *saving* and *savings* in his “General Theory” (Curtis, 1939:623).

Despite the discourse, the above form part of the building blocks of what is known today as the Investment-saving, Liquidity preference money supply (IS-LM¹⁰) model, formally developed by John Hicks (Hicks, 1937). The aim of the IS-LM model was to develop one tool to analyse the equilibrium position between three markets, namely the labour market, the goods market and the asset (money) market. Below is a brief overview of the equilibrium conditions required for each of these markets (Abel and Bernanke, 2005:308-23).

¹⁰ Also referred to as the Hicks-Hansen model

- Labour market

The full employment level of employment is reached after wages and prices have fully adjusted, so that the quantity of labour supplied equals the quantity of labour demanded. Full employment output is the amount of output produced when employment is at its full employment level, given the current level of capital stock and the production function. The full employment (FE) line is a vertical line on the IS-LM diagram indicating that the real interest rate affects only future investment and capital stock, hence no effect on current capital stock or full employment output.

- Goods market

The goods market is in equilibrium when the aggregate demand equals aggregate supply, which can also be stated as where national desired investment equals desired saving. Desired national consumption is defined as the aggregate quantity of goods and services that households want to consume, given variables such as income and other economic opportunities. Treating consumption and saving as two sides of the same coin, desired national saving is defined as the level of saving when aggregate consumption is at its desired level.

In deriving the investment-saving (IS) curve, the saving curve slopes upwards; that is, higher levels of output (income) increase the desired national saving and shifts the saving curve to the right, leading to a lower market clearing real interest rate. However, the IS curve slopes downwards because an increase in the real interest rate increases the user cost of capital¹¹, which reduces the desired capital stock and hence desired investment. In summary, the IS curve shows the real interest rate needed to clear the goods market. This equilibrium can be disturbed by, among others, economic disturbances and policy changes.

- Asset (money) market

The asset market equilibrium can be deduced to be where the quantity of money supply and money demand are equal. This can also be stated as the point where the quantity of assets demanded by holders of wealth for their portfolios equals the supplies of those assets in the

¹¹ User cost of capital is the expected real cost of using a unit of capital for a specified period of time and usually has two components: depreciation cost and interest cost. Depreciation costs are the value lost as the capital wears out. Interest cost is the expected real interest rate times the price of capital. In essence it is the opportunity cost of having invested funds in, for example, an interest bearing instrument, such as a government bond, and forms part of the true economic cost of using capital (Abel and Bernanke, 2005:128-129).

economy. Taking cognisance of the fact that various types of assets exist, all assets are aggregated into two broad categories – money and non-monetary assets.

General equilibrium refers to a situation where all three markets are in equilibrium simultaneously. It refers to the point where full employment output (\bar{Y}) is reached (see figure 2.1). The literature contains a plethora of determinants for movements of (and along) the various curves and the effect on equilibrium, most of which fall outside the focus of this study.

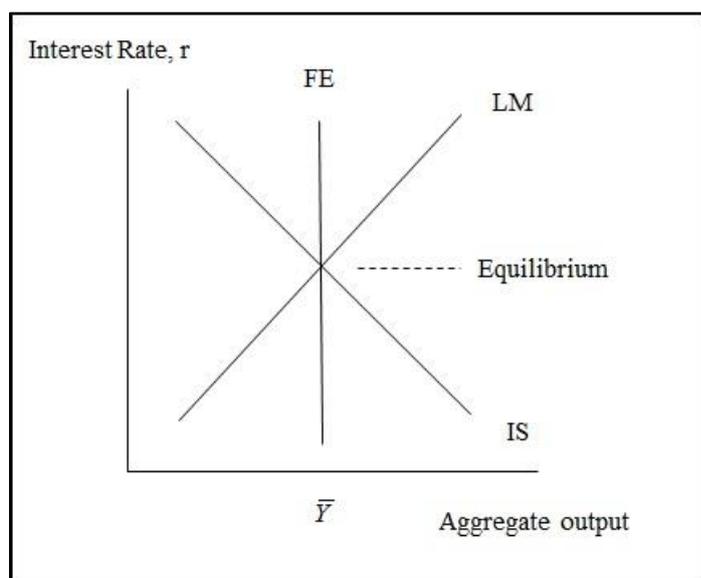


Figure 2.1: General equilibrium in the IS-LM model
Source: Abel and Bernanke, 2005:323

2.3.1.3 Liquidity preference theory

The liquidity preference theory forms part of the term, structure theories of interest rates –used to explain the shape and slope of the yield curve – and why it shifts over time. Other theories explaining this include the expectations theory, the preferred habitat theory and the market segmentation theory.

The expectations theory is the “simplest” of these theories and states that the long-term rate of interest is equal to the average of the short-term rates that are expected to prevail over the long-term period. The liquidity preference theory builds on this by stating that interest rates equal the sum of current and expected short rates (i.e. the expectation theory), but adds a liquidity (risk) premium. Given that uncertainty increases with time, investors prefer to lend over the short run while borrowers prefer to borrow more long term to be assured of the availability of funds. Investors receive a liquidity premium to encourage them to lend long term, while paying a price premium (lower yields) for investing short term (Jones, 2000:228-232).

The size of the liquidity premium will depend on how much additional compensation investors require to encourage them to take on the greater risk of longer-term maturities, or how strong their preference for the greater liquidity of short-term debt is (Schweser, 2007:56). Figure 2.2 illustrates the effect of a liquidity premium on a yield curve, where expected future short-term rates are constant.

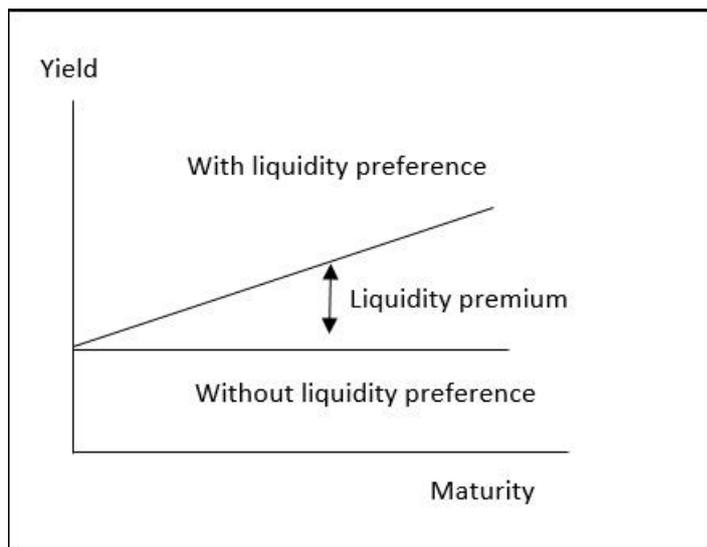


Figure 2.2: The liquidity premium
 Source: Schweser, 2007:56

The upward sloping yield curve indicates that, in general, investors prefer to be compensated more for taking on longer maturity debt instruments. This could be due to being cautious about various types of market risk, including interest rate risk, or the risk of being locked into a longer-term agreement when short-term rates start to change. Linking this to the simpler pure expectations theory, the notion is that if short-term rates are expected to rise in future, we expect the yield on longer-term instruments to be higher than those on short-term instruments, and thus an upward sloping yield curve (Schweser, 2007:55-56).

Despite the valuable theoretical foundations laid by Keynes, saving was still largely analysed within a static framework where it was seen as one of many “goods” on which a consumer could spend his/her income. It was regarded as a luxury, superior commodity (consumption of these goods is positively related to income) and little attention was given as to why rational consumers would choose to “allocate” their income to saving (Modigliani, 1986:298). This requires further discussion of consumption based theories, as dealt with in the next section.

2.3.2 Consumption based theories

Modigliani (1986:298-99) notes a few important empirical contributions during the 1940s, which started to address some of the limitations of earlier analysis regarding the process of saving. This includes evidence that the saving ratio had not changed much since the middle of the 19th century, despite a large rise in per capita income (Kuznets, 1946). Brady and Friedman (1947) contributed to the work of Kuznets by demonstrating that the saving rate was explained, not by the absolute income of families, but rather by their income relative to overall mean income. In addition, Margaret Reid (unpublished) hypothesised that the association between the saving ratio and relative income boils down to the fact that consumption was controlled by normal or “permanent” income as opposed to current income.

By his own account, Modigliani (1986:299) acknowledges that Reid’s contribution was an especially “important source of inspiration” for both the permanent income hypothesis (PIH) and the life-cycle hypothesis (LCH). Below is a brief discussion of each of the hypotheses, followed by a summary.

2.3.2.1 Permanent income hypothesis

The PIH is in actual fact a hypothesis about the consumption function; more specifically it defines the relationship between permanent income and permanent consumption (Friedman, 1957:26).

It is necessary to start with a definition of what is meant by permanent income. Friedman states that the terms “permanent income” and “permanent consumption” are hypothesised ideas that cannot be observed for individual consumers. What can be observed are receipts and payments, which are subsequently used to estimate observable magnitudes for the theoretical concepts (Friedman, 1957:20).

One possibility is to use indirect means, for example, using evidence from different time periods and agents, against which to interpret the behaviour of one agent for a specific period. Therefore, an agent’s earning potential can be adjusted towards some average based, among others, on variables such as age, occupation, race or location.

Friedman (1957:21) proposes that income be treated as the sum of two components – a permanent and a transitory component – formally represented by the equation:

$$y = y_p + y_t \quad \text{Equation 2.8}$$

where:

y_p : Permanent income

y_t : Transitory income

The permanent component includes those factors that determine an agent's capital value or wealth (interpreted as non-human wealth); personal attributes such as training, ability and personality; as well as economic activity such as occupation followed and location of activity. The transitory part of equation 2.8 includes all "other" factors, listed as "accidental" or "chance" occurrences, for example, cyclical fluctuations in economic activity, illness or good and bad luck ("guesses"). Although the transitory components for any considerable group tend to average out, this need not be the case in all instances.

Similar to income, consumption is also defined as having both a permanent and transitory component, so that

$$c = c_p + c_t \quad \text{Equation 2.9}$$

where:

c_p : Permanent consumption

c_t : Transitory consumption.

Again the transitory component might be relevant to a specific agent (e.g. illness or a favourable purchasing opportunity) or to a group of agents (e.g. good or bad weather spells).

Friedman (1957:23) cautions against being tempted to interpret permanent components as analogous to average lifetime values, while transitory components are seen as the differences between these average values and actual measured values for specific time periods. His reasoning for this caution includes the fact that one unit in itself is but a small sample from the bigger hypothetical universe and that it is neither "necessary nor desirable" to decide in advance the precise meaning of permanent. Here he leaves the door open for an empirical study

and also that the precise line to be drawn between permanent and transitory components is best left to be revealed by the data itself.

Using equations 2.8 and 2.9, Friedman defines the PIH equation as:

$$c_p = k(i, w, u)y_p \quad \text{Equation 2.10}$$

where:

i : Rate of interest, or sets of rates of interest against which consumers can borrow and lend;

w : Property and non-property income symbolised as the ratio of non-human wealth to income;

u : Portmanteau variable, determining consumers' tastes for consumption against additional wealth.

In its most basic form, equation 2.10 is in essence “empty”, meaning that no empirical data could contradict it. However, by re-specifying some of the determinants (e.g. to suppose that the transitory components of consumption and income are uncorrelated), it can be contradicted by observed data.

The introduction of uncertainty (real world realities) into the model complicates the interpretation of the indifference curves and introduces additional reasons for saving, which requires that a distinction be made among different kinds of wealth (Friedman, 1957:16-17).

2.3.2.2 Life-cycle hypothesis

The LCH is an amalgamation of research by Modigliani, as well as various co-authors (including Brumberg, R.; Ando, A.; Jappelli, T. and Larry Coa, S.; see Modigliani, 2005:xi). The theory strives to explain the consumption patterns of individuals over their life spans. It focuses on the cycle of earnings as well as concepts such as individual and national thrift (the wise or cautious management of money) and, among others, the role of bequests or the bequests' motive relating to the distribution of wealth over generations. The explicit recognition of the finite life of households is a very important deviation from the PIH, which

assumes an infinite life span. This meant that the LCH could take into account bequests and the bequests' motive ¹²(Modigliani, 1986:300).

The hypothesis takes into account life events including maturing, retiring and changes in family size – hence the name life-cycle hypothesis (Modigliani, 1986:300). As the income of individuals is expected to rise throughout their working careers, they typically need to borrow during their early working years, while being able to save later, or during their mature (pre-retirement) working years. The situation changes again quickly post-retirement as dissaving typically occurs.

The most basic (or “stripped down”) version of the LCH is based on the assumptions that income is constant until retirement and zero thereafter; consumption is constant over the life span; the interest rate is zero and there are no bequests. This leads to the “hump-shaped” age path of wealth (see figure 2.3).

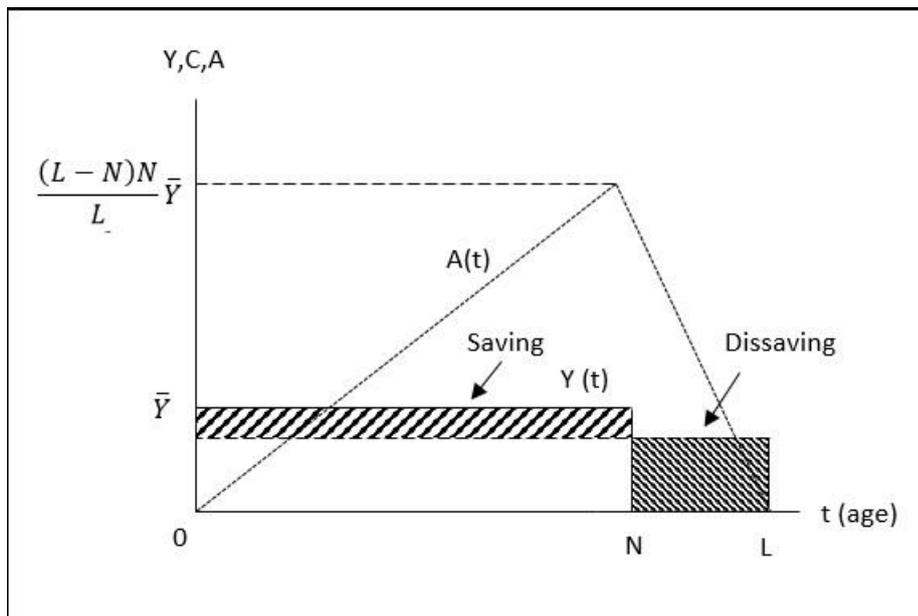


Figure 2.3: The “stripped down” version of the LCH
 Source: Modigliani, 1986:300

¹² A topic also recently highlighted by French economist Thomas Piketty (2014).

Where:

Y: income (other than interest) during the t-th year;

C: consumption of the individual during the t-th year of his life, where t is measured from the beginning of the earning span (it also distinguishes between current income and consumption as opposed to expected (future) income and planned consumption);

A: assets at beginning of age period t;

N: the earnings span;

L: the life span of economic significance.

Albeit a basic description of consumer choices, the LCH led to a number of surprising implications including: the savings rate of a country is entirely independent of per capita income; the aggregate savings rate will be higher, the higher the long-run growth rate of the economy (including zero for zero growth); the wealth income ratio is a decreasing function of the growth rate (thus being largest at zero growth); an economy can accumulate a very substantial stock of wealth relative to income even if no wealth is passed on by bequests; and that the main factor that controls the wealth-income ratio and the saving rate for given growth is the prevailing length of retirement (Modigliani, 1986:300-1).

According to Modigliani and Brumberg (1954:5-6), if current income is unequal to current consumption, the individual will be currently saving (or dissaving); while if expected income is unequal to planned consumption, the individual will be planning to save (or dissave) at a certain age. This is due to various saving motives including the following:

- Bequests: The desire to add to the estate for the benefit of one's heirs;
- Individual life plan: The pattern of current and prospective income receipts will, in general, not coincide with the preferred consumption;
- Precautionary motive: The desire to accumulate assets through saving to meet possible emergencies; and
- To purchase durable goods: To have an equity in certain kinds of assets before an individual can receive services from them.

Based on the above theory and definitions, the concept of an individual's "portfolio" is introduced and the fact that any one asset in a portfolio may (and usually will) satisfy more

than one motive simultaneously (the classical example being residential property that can be used for, among others, current services, retirement planning, bequests or emergency funding). However, the theory is that liquid possessions will serve at least one of the four motives and should therefore be treated as an asset.

Modigliani and Brumberg (1954:7) define saving¹³ and dissaving as “the positive or negative change in the net worth of an individual during a specific time period”, while consumption is viewed as “the expenditure on non-durable goods and services – adjusted for changes in consumer’s inventories – plus current depreciation of direct-service-yielding durable goods”.

Some empirical research includes Shea (1995) who looks at unionised teachers whose contracts are negotiated one year in advanced. According to the life-cycle theory, if next year’s expected wage is surprisingly good, then teachers should spend more now, while if it is disappointing, then current spending cuts should be evident. The study found that teachers did spend more when future wages were expected to rise, but they failed to cut back on current spending when future wages were cut (Shea, 1995:199). In trying to explain this, Camerer et al. (2004:153) use findings from Bowman, Minehart and Matthew (1999), which show that consumption is “sticky downwards” for two reasons. First, because people tend to be loss-averse or unlikely to cut consumption below their current reference point. Secondly, owing to “reflection effects” people are willing to gamble that next year’s wages will in fact not be as low as predicted.

Regarding the research design and data, Shea (1995) used panel data, specifically the Panel Study of Income Dynamics (PSID), based at the University of Michigan, which is the longest running longitudinal household survey in the world (Panel Study of Income Dynamics, 2016). The author provides three reasons¹⁴ why tests of the LCH/PIH in household data may have low power. First that PSID data used covers only food consumption; secondly, consumption is poorly measured; and thirdly, that it is difficult to find variables in households’ current information sets that are good predictors of future income (Shea, 1995:187-88).

In the next section the focus shifts to the macroeconomic impact of saving, specifically its role in economic growth.

¹³ The definition of saving as proposed by Modigliani and Brumberg, (1954:7) rather relates to the concept of wealth as defined by the System of National Accounts. It therefore also differs from the way in which the term is interpreted in this study (see chapter 4 for a detailed description of definitions).

¹⁴ Although the critiques by Shea (1995) are based on the PSID study, it is likely that, given that the PSID is one of the longest running and most prominent panel studies in the world, the same critiques may also apply to other household level panel studies, including the NIDS data used in this study.

2.4 Saving and economic growth

Underlying most macroeconomic research is in essence the question of why some economies are rich and others poor. In addition, one can ask which factors account for divergences over time. Romer (2012:7) notes the enormous differences in standards of living between countries. At the extremes he mentions “growth miracles” (e.g. newly industrialised countries of East Asia) as opposed to “growth disasters” (Argentina and various sub-Saharan African countries). The aim of macroeconomic research according to Romer (2012:8) is to try to help narrow the gap in standards of living between poor and rich countries.

What is evident is that the concepts of economic growth and economic development can hardly be analysed separately. To formalise, economic growth can be defined as the increase of a nation’s real output – gross domestic product (GDP) – over time, which results from: (1) greater quantities of natural resources, human resources and capital; (2) improvements in the quality of the resources; and (3) technological advances that boost productivity. Economic development takes this definition as the point of departure and converts it to real GDP per capita, used as a proxy for standard of living, which rises when output increases more rapidly than the population and vice versa (Brue and Grant, 2013:505).

Relevant to this study is determining what role saving plays as far as economic growth theories are concerned. However, as economic growth is not the focus of this study (and harbours a vast literature), the discussion can at best aim to highlight some excerpts where saving features in these theories.

Theories on economic growth are plentiful (and often conflicting). Among the established ones are Adam Smith’s optimistic views focused on the division of labour and capital accumulation versus David Ricardo’s pessimistic long-run growth outlook; the Keynesian growth models; post-Keynesian (Harrod-Domar) model; neoclassical theories (Solow-Swan growth model, Schumpeter); and the more recent endogenous growth theories (Romer, 1986; Lucas, 1988).

However, a major divide is found between exogenous versus endogenous models. Exogenous growth refers to growth that is neither being produced by decisions of private agents nor by policy intervention, while in contrast, endogenous growth models try to explicitly explain how agents’ decision and policy choices can influence the rate of growth (Novales, Fernandez and Ruiz, 2014:38-39). Following are excerpts to highlight where saving features in some of these theories.

2.4.1 The Harrod-Domar model

Harrod (1939) and Domar (1947) both focused their attention on the role of saving and investment in the analysis of growth, they established their theories within the same post-Keynesian framework, and their seminal papers reached similar conclusions. Thus, even though they did not intentionally work (or publish) together, it is because of these similarities that their work is mostly collectively referred to as the Harrod-Domar model (Brue and Grant, 2013:506).

Following the Great Depression of the 1930s, Domar (1947:34) states that Say's Law (that supply creates its own demand) has been "badly shaken" especially due to phenomena such as saving ("hoarding"), which means that part of the income generated during the productive process is not returned to it. Focusing on problems such as deflation and unemployment, he attempts to find what rate of growth of national income is required to maintain full employment.

The Harrod-Domar growth equation takes a condensed form of:

$$\alpha Y = \beta(Y - Y_{-1}) \quad \text{Equation 2.11}$$

Where:

$$\alpha = \frac{I}{Y} = \frac{S}{Y}$$

$$\beta = \frac{K}{Y}$$

The first variable (α) is the savings-income ratio, also referred to as the propensity to save. The second variable (β) is the capital-output ratio, the value of the capital goods required for the production of a unit increment of output (acceleration principle). Domar (1947:41) provides a (somewhat complex) summary for the requirement of maintaining full employment including that investment and income growth (annual, compounded) need to be equal to the product of the marginal propensity to save and the average of the productivity of investment. He provides some clarification of his statement, adding that in order to maintain full employment, today's investment must always exceed yesterday's savings, and that the mere absence of hoarding will not suffice. He terms the injection of new money (which must take place every day) as

“dishoarding” and notes that this need to take place at an accelerating pace (in absolute terms) if the economy wants to expand continuously (Domar, 1947:42).

Similar to the work of Domar (1947), Harrod attempts the “marriage” of the acceleration principle and the multiplier theory, in his “dynamic” theory (Harrod, 1939:16). This is based on three propositions: (1) the level of income is the most important determinant of the supply of savings; (2) the rate of increase in income is an important determinant in the demand for saving; and (3) demand equals supply (Harrod, 1939:14).

As far as critiques go, Harrod and Domar doubted that annual investment growth would automatically be sufficient to maintain full employment growth, making their model inherently unstable. The unpredictability of investment leaves the economy on a “knives edge” between recession (below required investment) and demand-pull inflation (above required investment growth). Other criticisms include the fact that it is merely a “class-room exercise” based on its various stringent assumptions, including, fixed ratios, as well as that it is only applicable to a small closed economy with no government intervention (Brue and Grant, 2013:506-508). This model, however, indicates that saving cannot be regarded in isolation of investment.

2.4.2 The Solow model (exogenous growth)

The Solow model (also known as the Solow-Swan model) was developed in 1956 and, despite more technically advanced modern models, still often forms the starting point for analysing economic growth (see Solow, 1956; Swan, 1956). The model focuses on four variables: output (Y), capital (K), labour (L) and “knowledge” or the “effectiveness of labour” (A). An economy usually has a mixture of these, which can be combined to produce output. Other key assumptions of the model include the following: (i) the economy consists only of one sector, producing one commodity that can be used for either investment or consumption; (ii) it is a closed economy (no international trade), and no government intervention occurs; (iii) all output saved is invested; (iv) there is full price flexibility, monetary neutrality and the economy is producing at its potential (natural) level of output; and (v) technological progress, population growth and the depreciation of capital stock are all exogenously determined (Snowdon and Vane, 2005:603).

The production function takes the form:

$$Y(t) = f(K(t), A(t)L(t)) \quad \text{Equation 2.12}$$

Where t denotes time.

Time does not enter the model directly, but only through K , A and L , indicating that output changes over time, only if the input of production changes. The focus is on changes in capital, while labour and knowledge are exogenously determined and enter the model multiplicatively.

Regarding the dynamics of capital, the model uses the *capital stock per unit of effective labour*, k , rather than the *unadjusted capital stock*, K . Using this form, $k = K/AL$, and various mathematical derivations (including the *chain rule*), the key equation¹⁵ of the Solow model is derived as:

$$\dot{k}(t) = sf(k(t)) - (n + g + \delta)k(t) \quad \text{Equation 2.13}$$

Where:

s : is the fraction of output that is invested

k ¹⁶: is the capital stock per unit of effective labour

n : is the growth rate of L (in this case constant)

g : is the growth rate of A (in this case constant)

δ : is the existing capital depreciation rate

The first part of equation 2.13, $sf(k)$, is *actual investment per unit of effective labour*, with $f(k)$ being the output per unit of effective labour, while s is the fraction of output that is invested. The second part of equation 2.13, $(n + g + \delta)k$, is the *break-even investment*, or the amount of investment that must be undertaken just to keep k at its existing level. There are two reasons why some investment is needed to prevent k from falling. First, because existing capital is depreciating, and second, because the quantity of effective labour is growing. Thus investment to keep the capital stocks (K) constant is not sufficient to keep k constant.

¹⁵ For a detailed description of the derivation of the Solow model, see Romer (2012:10-17).

¹⁶ A dot over k denotes a derivative with respect to time, $dk(t)/dt$.

The quantity of effective labour is growing at rate $n + g$; the capital stock must also grow at this rate to hold k steady; hence the term $(n + g)k$ in equation 2.13.

In summary, when actual investment per unit of effective labour exceeds the investment needed to break even, k is rising. When actual investment falls short of break-even investment, k is falling. Where the two are equal, k is constant (Romer, 2012:13-16). Figure 2.4 provides a graphical description of the relationship between actual and break-even investment. k^* , denotes the value of k where actual investment and break-even investment are equal. An important part of the assumptions is that regardless of where k starts, it converges to k^* and remains there. The model implies that regardless of the starting point, the economy converges to a balanced growth path, which is a situation where each of the variables in the model is growing at a constant rate.

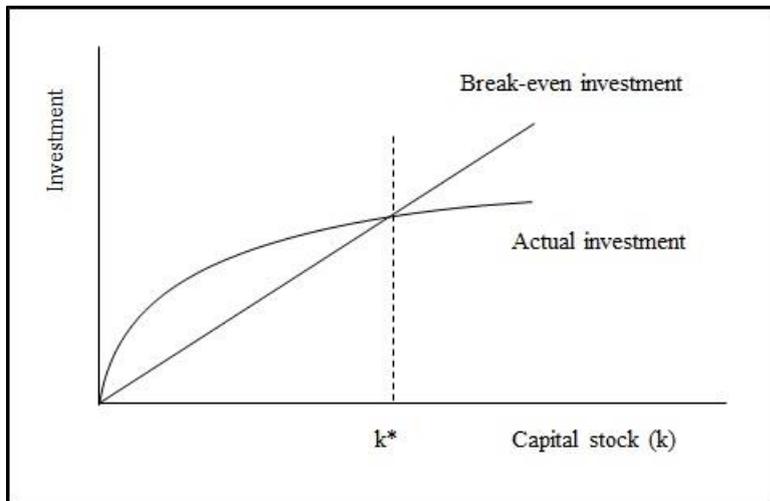


Figure 2.4: The Solow growth model: actual and break-even investment
 Source: Romer, 2012:16

Regarding the role of saving, the assumption of a closed economy implies that aggregate output equals aggregate income and that consumption (C) plus investment (I) should equal saving (S). Using these implied relationships, we get to the equation:

$$Y = C + sY \tag{Equation 2.14}$$

Where s is the fraction of income saved and falls between zero and one ($1 > s > 0$). Private domestic saving is presented by (sY) , which must equal domestic investment (I), given the assumption of a closed economy (Snowdon and Vane, 2005:606).

The saving rate is one of the parameters of the Solow model, which is most likely to be affected by policy. The impact of a change in saving on the balanced growth path of the Solow model can be analysed by changing the variable representing the fraction of output that is invested (s). The result is that a permanent increase in the saving rate produces merely a temporary increase in the growth rate of output per worker, as the additional saving is soon totally devoted to merely maintaining the higher output level. Thus a change in the saving rate has a level effect, but not a growth effect (Romer, 2012:18-21).

The Solow model is not without controversy, including the fact that the analysis helped to identify technological progress as a major explanatory factor in the analysis of economic growth. This was despite the fact that Solow (by his own account) intentionally specified technological progress as an exogenous variable in the theory. This “mistake” has become known as the Solow residual and has, among other things, been described “as a measure of ignorance” (Snowdon and Vane, 2005:610). The next section discusses this residual further by looking at growth accounting.

2.4.3 Growth accounting

The important ability to measure economic growth is known as growth accounting. Drivers of growth in various theories often relate to capital accumulation, labour supply growth and technological progress (or productivity).

The basic growth accounting equation typically takes the following form:

$$\frac{\Delta Y}{Y} = \frac{\Delta A}{A} + \alpha \frac{\Delta K}{K} + (1 - \alpha) \frac{\Delta L}{L} \quad \text{Equation 2.15}$$

Where:

Y: output growth

A: productivity growth

K: increased capital output

L: increased labour outputs

α : elasticity of output with respect to capital

$1-\alpha$: elasticity of output with respect to labour

(Snowdon and Vane, 2005:613).

The contribution of capital and labour, as well as their elasticities, in equation 2.15 can be measured fairly confidently; however, this is not the case for productivity. Thus one solution is to deduct productive growth as a residual after taking into account the other two factors of production, a method “stumbled upon” by Solow (1956). Rewriting the above equation, productivity growth becomes:

$$\frac{\Delta A}{A} = \frac{\Delta Y}{Y} - \alpha \frac{\Delta K}{K} - (1 - \alpha) \frac{\Delta L}{L} \quad \text{Equation 2.16}$$

(Abel and Bernanke, 2005:213).

The Solow residual measures the part of aggregate output not explained by changes in the measurable quantities of capital and labour inputs. This residual is often referred to in the literature as total factor productivity (TFP). Empirical studies have shown that the contribution of TFP can have significant importance in explaining the growth experienced in various countries and areas (see for instance Solow, 1957; Denison, 1985; Young, 1994). In response to these findings, as well as the inherent shortcomings of the Solow model (specifically its failure to explain productivity growth), the endogenous growth theories have emerged and are explained in the next section.

2.4.4 Endogenous growth models

Endogenous growth includes a diverse body of theoretical and empirical work that emerged around the 1980s (see for instance Romer, 1986; Romer, 1994 and Lucas 1988). It emphasises the fact that economic growth is an endogenous (or internal) outcome of an economic system and tries to uncover the private and public sectors’ choices that cause the rate of growth to vary across countries. It distinguishes itself from neoclassical theories in that it tries to explain, rather than assume, changes in variables such as productivity growth.

A key assumption of the endogenous theories is that the marginal productivity of capital is constant, rather than diminishing (as was the case in the Solow model). The reasons as to why it is constant for the economy as a whole mainly focus on either the role of human capital (knowledge, skills and training) or research and development (R and D) activities. In turn, saving affects long-term growth, because higher rates of saving and capital formation stimulate

greater investment in human capital as well as in R and D. This can be shown using a basic endogenous growth model (Abel and Bernanke, 2005:236-38):

First the aggregate production function:

$$Y = AK \quad \text{Equation 2.17}$$

Where

Y: aggregate output

K: aggregate capital stock

A: marginal product of capital, positive and constant value

Because the marginal product of capital (A) is set to some constant, positive value, equation 2.17 does not imply diminishing marginal productivity of capital (an important distinction from the Solow model).

Next, the assumption that national saving (S) is a constant fraction (s) of aggregate output so that: $S = sAK$; while total investment (I) equals net investment (net increase in capital stock) plus depreciation; that is: $I = \Delta K + dK$. In a closed economy, investment must equal saving, thus:

$$\Delta K + dK = sAK \quad \text{Equation 2.18}$$

This equation can be transformed to:

$$\frac{\Delta Y}{Y} = sA - d \quad \text{Equation 2.19}$$

(Abel and Bernanke, 2005:237).

Equation 2.19 indicates that output depends on the saving rate and depreciation. Jappelli and Pagano (1994:84) note how endogenous growth models highlight the fact that steady-state growth is an increasing function of the saving rate and that “factors that stimulate saving promote growth”. This theoretical justification of the link between saving and growth is in stark contrast to the findings from the Solow model, and provides important theoretical arguments for this study, as far as its possible impact on economic growth goes.

2.4.5 Other (balance of payments)

In analysing the link between saving and investment, Feldstein and Horioka (1980:314) addressed a few critical issues such as the international mobility of capital and whether saving that originates in a country should be invested there, as well as what a nation's optimal rate of saving should be. According to theory, in a closed economy, it necessarily holds that saving equals investment. However, in a more realistic scenario of an open economy the two variables can differ by an amount equal to the balance on the current account of the balance of payments (BoP). This is based on the link between the SNA and the BoP.

The BoP is defined as “a statistical summary of all economic transactions between residents¹⁷ in the reporting country and the rest of the world during a particular period” (Mohr, 1998:128). Although it is called a balance, it actually records the flow of transactions over a given period (usually quarterly or annually). All transactions that lead to a receipt of payments from foreigners are entered as credits, while payments to foreigners are entered as debits. The BoP consists of four sub-accounts: the current account, financial account, unrecorded transactions and the official reserves account. The current account includes transactions in goods and services, factor or primary income and current transfers (current or income transactions); while the financial account records transactions such as those in shares, stocks, bonds and fixed property (capital or asset transactions). Current account deficits that could arise need to be financed by net inflows on the financial account (Mohr, 1998:128-133).

Prinsloo (2000:2) explains that the imbalance between domestic national saving and investment is reflected in the surplus or deficit on the current account of the BoP. When investment exceeds domestic saving, the shortfall shows as a deficit on the current account of the BoP, which must be financed by “importing” savings from other parts of the world. This can be in the form of inflows of foreign capital or by depleting the country's stock of international reserves. Part of this adjustment could also be via changes in the exchange rate.

To formally explain the above interaction between saving, investment and the BoP, we first look at the difference between GDP and gross national income¹⁸ (GNI). GDP is a geographical concept; domestic indicates all production within the geographic boundaries of a country, regardless of the nationality of the owners of the factors of production. In contrast, GNI focuses

¹⁷ Residents are those who enjoy permanent domicile in a country and comprise individuals, corporate entities and government bodies (Mohr, 1998:128).

¹⁸ Also referred to as gross national product (GNP).

on the income of a country's residents, regardless of their location. This means that an adjustment needs to be made for the net primary income to (from) the rest of the world (Mohr, 1998:35-36).

Using these principles, gross national disposable income (GNDI) can be defined as:

$$\begin{aligned} \text{GNDI} &= \text{GDP} + (\text{NFP} + \text{NTRF}) && \text{Equation 2.20} \\ &= (\text{CP} + \text{CG} + \text{IP} + \text{IG} + (\text{X} - \text{M})) + (\text{NFP} + \text{NTRF}) \end{aligned}$$

Where:

GDP: gross domestic product

NFP: net factor payments

NTRF: net transfers received

CP and CG: consumption expenditure, private and government

IP and IG: gross capital formation, private and government

X: exports of goods and non-factor services

M: imports of goods and non-factor services.

(Prinsloo, 2000:33).

Theoretically, gross national saving is given as GNDI less consumption, that is:

$$S = \text{GNDI} - \text{CP} - \text{CG} \quad \text{Equation 2.21}$$

By substituting equation 2.20 into equation 2.21, the result is:

$$S = \text{CP} + \text{CG} + \text{IP} + \text{IG} + (\text{X} - \text{M} + \text{NFP} + \text{NTRF}) - \text{CP} - \text{CG} \quad \text{Equation 2.22}$$

The extent to which investment can differ from national saving can be shown to match the external balance on the current account (CAB), as follows:

$$\begin{aligned} \text{CAB} &= S - I && \text{Equation 2.23} \\ &= \text{SP} + \text{SG} - I \\ &= (\text{SP} - \text{IP}) + (\text{SG} - \text{IG}) \end{aligned}$$

Where:

SG and SP: saving by the government and private sector

(Prinsloo, 2000:33).

Equation 2.23 demonstrates that the current account balance (CAB) is equal to the difference between private sector saving and private sector investment, plus the difference between government saving and investment. That is a type of proxy for “foreign saving” used to finance a gap between domestic national saving and investment (Prinsloo, 2000:33). (Also see chapter 3.4.1 for an application of this theory to South Africa.)

This analysis becomes complicated when applying the intertemporal theory of the current account, because S and I are affected by independent factors; in the presence of perfect capital mobility, we could get the situation where there is zero correlation between the two (see Obstfeld and Rogoff, 1995).

However, in analysing investment-to-GDP and saving-to-GDP ratios in 16 countries of the Organisation for Economic Cooperation and Development (OECD) for five-year periods ranging from 1960 to 1974, Feldstein and Horioka (1980:320-21) found very high (close to one) regression coefficients, indicating an almost one-to-one positive correlation between S and I. Basher and Fachin (2013:430-31) note that these findings were interpreted as evidence of low capital mobility or that investment depends on domestic saving because capital did not move across economies during this period. Theoretically (see Romer 2012:36-37), given perfect capital mobility, saving must flow to the most attractive investment projects around the globe. The findings thus contradicted this hypothesis and became known as the “Feldstein–Horioka puzzle”. This puzzle has since been researched intensively and Apergis and Tsoumas (2009) provide a good summary and description of the various research studies done. Important to this study is their concluding remarks, which state that the majority of studies supported a strong correlation between saving and investment, albeit lower than that displayed in the earlier

attempts, and the majority of the results do not clearly validate the capital mobility hypothesis (Apergis and Tsoumas, 2009:73). Romer (2012:37) provides support for this view by adding that “the strong relationship between saving and investment differs dramatically from the predictions of a natural baseline model”. However, he believes that the reason for this has to do with “something less fundamental” such as “underlying forces affecting both saving and investment”.

Amusa (2014) analysed the links between saving, investment and economic growth and notes that empirical causality between these economic variables is not always straightforward and various permutations, ranging from unilaterally to multilaterally, can be found in the literature (Amusa, 2014:78-79).

The aim of this section was to highlight some excerpts where saving features in economic growth theories in general. Even though saving per se does not always feature directly in some of the theories and measurements (e.g. Solow model and growth accounting), its implied role in driving variables such as investment and the supply of capital remains evident. The role of saving in more recent growth theories (notably the endogenous growth theory) and its empirical verification is undeniable. Similarly, theories and empirical evidence related to the BoP highlight the imperative nature that saving (domestic and foreign) plays in, among others, balancing the flow of funds between countries.

Having considered the role of saving in economic growth theories in general, sections 2.5 and 2.6 take a more detailed look at its role regarding two specific branches of macroeconomic policies, namely fiscal and monetary policy.

2.5 Fiscal policy and saving

The link between fiscal policy and national saving is often analysed using the Ricardian equivalence proposition (REP), also referred to as the Ricardo-De Viti-Barro equivalence theorem, based on the contributions made by the three authors (see Ricardo, 1817; De Viti de Marco, 1936; and Barro, 1974). The REP concerns itself with the ability of fiscal policy to affect aggregate demand, which strongly focuses on the assumption that the private sector perceives greater budget deficits (e.g. via the issuance of government bonds) as an increase in their net wealth (Barro, 1974:1095).

The proposition states that consumers, within a framework of intergenerational transfers, would not consider current tax cuts and subsequent increases in disposable income as permanent. This is because the government's intertemporal budget constraint implies that, for a given level of government expenditure, current tax cuts will simply imply corresponding tax hikes in the future. Consumers will therefore rather choose to save any increases in current disposable income to be able to pay the expected increases in future taxes (Graham & Himarios, 1996:527). In summary, this implies that, given the various assumptions of the REP, fiscal policy will not be able to affect aggregate demand; however, it makes a strong case for its likely effect on private saving. Further, it implies that the effect of fiscal policy on national saving is neutral, as any changes in private saving should be fully offset by opposing changes in government saving (Bonga-Bonga, 2009:209).

The Ricardian hypothesis is based on various assumptions, including that the following:

- current households are linked to past and future generations through a chain of bequests or gifts resulting in them behaving as if they will live forever (i.e. infinite lives);
- consumers always believe that current deficits carry with them future tax liabilities of equal present value; and
- the discount rate used by consumers for future tax liabilities is equal to the government's borrowing rate.

Against these stringent assumptions of Ricardo's original proposition, Barro¹⁹ (1974:1096) adds a few more realistic angles including the use of the phrase, "perceived household wealth". He includes finite lives (within a model of overlapping generations) and also looks at the proposition from both a full employment as well as a non-full employment perspective. He proposes that as long as there is some kind of operative intergenerational transfer (e.g. bequests or gifts), there will be no net wealth effect. Also important is his analysis of social security payments, which he believes acts analogous to changes in government debt. His overarching conclusion conforms to that of Ricardo's as he states that "there is no persuasive theoretical case for treating government debt, at the margin, as a net component of perceived household wealth" (Barro, 1974:1107, 1116).

¹⁹ Interestingly, Barro (1974) did not reference the work of either Ricardo (1817) or De Viti de Marco (1936) in this paper. However, he later acknowledges his "intellectual debt to David Ricardo", see Barro 1976:346.

Ricardo's assumptions have been strongly criticised by many economists for being implausible, especially as far as the degree of required foresight and rationality on the part of consumers go. Sarantis (1985, 234) is outspoken on this topic and notes that if one or more of the assumptions are violated, it follows that the proposition is rejected and the author questions its validity given the mixed empirical results. There is also strong support for the view that the relationship between private consumption and fiscal change is one of disequilibrium, meaning that in response to a change in fiscal policy, households only gradually adjust their spending and saving plans back towards their equilibrium levels.

The boundaries between the household, corporate and public sectors are also not always clear. This is especially true for private and public saving. Regarding the role of fiscal policy, the direct mechanism through which savings are shifted between the public and private sectors is via current transfers, namely taxes and social assistance (grant) payments. Orthofer (2015:11) notes the dampening effect on households' disposable income if, for example, taxes increase faster than social assistance payments. The serious implication of this is that when the level of consumption is left unchanged, tax increases induce a shift of household saving to the public sector, and vice versa. However, equally as important is the question of how government utilises the additional income. If, for example, all of the revenue is spent on providing services to households, for which they would otherwise have to pay for themselves (e.g. security, education, healthcare), it quickly becomes a zero sum game.

2.6 Monetary policy and saving

Monetary policy can be defined as the management of money and interest rates, while monetary theory studies the link(s) between the quantity of money (money supply) and variables such as aggregate economic activity and the price level. The objectives of monetary policy differ between countries and can include price and exchange rate stability, economic growth, and full employment (Mishkin, 2013:436-438). In most countries, monetary policy is under the control of a government institution known as the central bank (Abel and Bernanke, 2005:10), for example, the Federal Reserve System (FRS, or the 'Fed') in the United States or the SARB.

The implementation of monetary policy focuses primarily on the official interest rate, although central banks have various other monetary policy tools including open market operations, discount policy (lender of last resort) and reserve requirements. In response to the global financial crisis of 2008 (GFC), the use of non-conventional monetary policy tools were

especially prominent, including liquidity provision, asset purchases and quantitative easing (Mishkin, 2013:418-429). Monetary policy's impact on the economy is usually studied using various (and complex) transmission mechanisms. It is also true that each of the above mentioned policies have their own impact. This study looks at only the impact of the primary monetary policy tool (the official interest rate) in analysing its link to saving.

Regarding the link between interest rates and saving, the literature focuses strongly on the work of McKinnon (1973) and Shaw (1973) who, among others, introduced terms such as financial repression and its opposite, financial liberalisation.

Financial repression refers to the explicit or indirect capping of interest rates by authorities, which often leads to negative real interest rates. Accordingly, artificial ceilings on interest rates reduce saving and capital accumulation, and discourage the efficient allocation of resources.

Financial liberalisation occurs when these controls are lifted, thereby allowing market forces to clear the money and credit markets that would be associated with higher real (market clearing) interest rates, which theoretically should stimulate saving. However, the "positive" effect of financial liberalisation is limited as very high rates could again lead to various adverse effects. Also a crucial (yet uncertain) underlying assumption is that saving is in actual fact responsive to interest rates (Gemech and Struthers, 2003:2-3).

As already indicated, there are various critiques to their hypothesis. Gemech and Struthers (2003) did a comprehensive literature review of McKinnon-Shaw's research for the period 1973-2003, and found that in general, the relationship between saving and real interest rates is at best ambiguous. At the same time, financial liberalisation has mixed results, which "perversely" indicates that in most cases liberalisation leads to a decline in the saving rate (Gemech and Struthers, 2003:4).

Looking into more detail at the puzzle of zero (or near zero) interest rate sensitivity of saving, Ogaki, Ostry and Reinhard (1996) note the importance of subsistence considerations versus the traditional intertemporal smoothing consideration of consumption in developing countries. This implies that only after reaching a subsistence level of consumption, will households let intertemporal considerations guide their spending patterns. They also found that much of the cross-country variation in variables, such as the level of saving and interest rate sensitivity of saving, could be explained by a country's income level (Ogaki, Ostry and Reinhard, 1996:67).

The reality is that the ambiguity of the effect of change in the interest rate on various economic aggregates (including saving), is certainly troublesome to monetary policy authorities. Mnyande²⁰ (2010:7) reiterates that the impact of monetary policy on saving is “unpredictable and at times perverse”. He highlights the (ever present) distinction between short and long-term implications, including the example that a more accommodative monetary policy stance could support economic activity, which should lead to increased incomes and saving. He stresses the importance of lasting coherent structures and a sound mix of policies, as opposed to short-term interventions.

Another striking example of the unpredictability of the effect of interest rate changes is the role of financial market speculation surrounding meetings of the various major central banks. For example, it is not strange to see the USA’s financial markets receiving a boost following hawkish sentiments from their central bank (the FRS). The rationale is that if the FRS is talking about possible interest rate hikes, the committee must certainly view the economy as being stronger than anticipated, which again should support businesses’ earnings and financial markets in general, despite the negative impact of the interest rate hike. This adds to the analysis conundrum, as it brings in the agents’ view of the various monetary policy transmission mechanisms and the (usually unpredictable) speeds of adjustment. The notion is that what central banks say (or hint at) becomes almost as important as what they do (Moneyweb, 2016).

In summary, although various theories exist about the expected link between monetary policy (specifically interest rates) and saving, the empirical evidence remains mixed and varied between countries. This also points towards a need for further country specific research on the topic.

As a conclusion to the role of saving in macroeconomics, the next section provides an overview of the theory and calculations of the various parts contributing to aggregate saving in the economy.

²⁰ Dr Monde Mnyande was chief economist and advisor to the governor of the South African Reserve Bank at the time.

2.7 Aggregate saving in the economy

Section 2.7 provides an overview of the theory and calculations of the various parts contributing to aggregate (national) saving in the economy. This will also highlight the role of household saving (the focus of this study) in aggregate saving in the economy.

2.7.1 National saving

National saving includes private saving plus government saving. Private saving (the saving of the private sector) consists of personal (household) saving and business (corporate) saving, but due to the fact that households own and control businesses, they are often grouped²¹ together in macroeconomics (Abel and Bernanke, 2005:37-41). Mathematically, private saving is given as:

$$S_{pvt} = (Y + NFP - T + TR + INT) - C \quad \text{Equation 2.24}$$

Where:

Y: GDP

NFP: net factor payments from abroad

T: taxes

TR: transfers received from government

INT: interest payments on the government's debt

C: consumption expenditure.

Government saving is defined as net government income less government purchases of goods and services, which equals:

$$S_{govt} = (T - TR - INT) - G \quad \text{Equation 2.25}$$

Using equations 2.24 and 2.25, national saving (S) combines private saving plus government saving, which equals:

$$S = S_{pvt} + S_{govt} \quad \text{Equation 2.26}$$

²¹ This relates to the concept of households “piercing the corporate veil”; see for instance Poterba (1987:455).

$$= (Y + NFP - T + TR + INT - C) + (T - TR - INT - G)$$

$$= Y + NFP - C - G$$

In this form national saving constitutes total income in the economy (gross national product) less spending to satisfy current needs (consumption expenditure and government purchases) (Abel & Bernanke, 2005:40).

2.7.2 Corporate saving

Corporate saving in general forms a vital part of national savings and is often its largest component (ahead of government and household saving). Karabarounis and Neiman (2012:6) define corporate saving as profits that are not distributed as dividends. Poterba (1987:456) provides a similar definition for gross corporate saving as being undistributed net-of-tax profit, while net corporate saving equals undistributed profits less capital consumption. The same author looked at the make-up of private saving for the period 1950-1986 in the USA and found that corporate saving contributed roughly half of gross private saving during the period (Poterba, 1987:458).

Karabarounis and Neiman (2012:1-6) found a global decline in the cost of capital beginning around 1980, financed by an increase in corporate saving, which led to labour being substituted by capital. In a sample of 44 countries that had (at least) 10 years of data for the period 1975 to 2007, 30 countries exhibited increased trends in the share of saving due to the corporate sector.

The Economist (2012) highlighted the frustrations of authorities over companies' balance sheets being inflated in response to the 2008/09 global financial market crisis. It also mentions the research done by Karabarounis and Neiman (2012), which indicates that the rising trend in corporate saving was already evident well before the crisis, but fails to single out a specific factor responsible for this trend.

Ben Bernanke²² (2005:4), in an effort to explain the rapid increase in the USA's current account deficit, notes the emergence of a "global saving glut". He mentions that this is the result of a number of developments, including a strong saving motive of rich countries with an aging population, as well as the "metamorphosis" of the developing world from a net user to a net

²² Governor of the USA's Federal Reserve Bank at the time.

supplier of funds to international capital markets, largely in response to the various financial crises experienced since the mid-1990s (Bernanke, 2005). Although this explanation is relevant to the USA, it has been criticised in the sense that it cannot be generalised to include a global audience. Gruber and Kamin (2015) analysed net lending by non-financial corporations during 2009 compared to 2002-2005 and found that gross saving rose for only three (USA, Japan, Germany) of the G7 countries. They also stress the point that focusing on gross saving alone is to look at the problem from one side only, and therefore base their analysis on net lending, defined as gross saving minus gross investment (Gruber and Kamin, 2015:13).

2.7.3 Household saving

Building on the definition of national saving (see equation 2.21), gross household saving²³ is defined as gross disposable income less final consumption expenditure, plus the change in net equity of households in pension fund reserves (Rocher and Stierle, 2015:8):

$$\text{Gross household saving} = \text{gross disposable inc.} - \text{consumption exp.} + \Delta \text{ pension fund reserves}$$

Equation 2.27

Using equation 2.27, the gross saving rate of households can be calculated as the ratio of gross saving to gross disposable income, again adjusted for the change in net equity of households in pension fund reserves (Rocher and Stierle, 2015:8):

$$\text{Gross saving rate} = \frac{\text{gross saving}}{\text{gross disposable income} + \Delta \text{ pension fund reserves}}$$

Equation 2.28

Returning to the Solow model (discussed in section 2.4.1), if households are introduced into the model, their welfare would not depend on output, but on consumption. Consumption per unit of effective labour equals output per unit of effective labour, $f(K)$, times the fraction of that output that is consumed, $1 - s$ (Romer, 2012:21). Given the situation where s rises, the model predicts that initially consumption per unit of effective labour will decrease (“jump downwards”). Consumption then rises gradually as k rises and s remains at its elevated level. Whether consumption eventually exceeds its level before the rise in s depends on the assumptions. Romer (2012:21) notes that “whether the increase raises or lowers consumption in the long run depends on whether...the marginal product of capital is more or less than

²³ This figure often includes non-profit organisations serving households (NPISH) such as charities and trade unions, because national statistical offices usually provide only historical figures for the household sector that incorporate this relatively small institutional sector (Rocher and Stierle, 2015:8).

$(n + g + \delta)$ ". Although informative, it is evident that this type of theoretical discussion is highly dependent on (various) assumptions regarding the variables. This is where empirical results can help to link the theory with the real world.

Households can also dissave, which involves the transfer of future resources to the present so as to increase current consumption (Bryant and Zick, 2006:88). This adds to the notion of households' net worth (net assets), which is the result when outstanding debts are subtracted from assets. This implies that increases in asset prices (asset price inflation) or paying of debt is just as much "saving" as increasing one's bank balance.

2.8 The intertemporal character of household saving

Microeconomics is the branch of economics that deals with the economic behaviour of individual units or agents such as consumers (individuals or households), businesses or resource owners (Mansfield, 1994:1). Important for this study is the link to consumption choices over time, or intertemporal choice (Varian, 2003:182).

Intertemporal choice models can, for instance, predict consumer choices given changes in variables such as the interest rate, the availability of credit or household indebtedness. In general, when interest rates rise, the price of current consumption becomes more expensive relative to future consumption. Debt (including household debt) can be defined as "an obligation or liability arising from borrowing money or taking goods or services 'on credit', or against an obligation to pay later" (Prinsloo, 2002: 64). Linking additional debt to intertemporal choice theory means that when households spend more at present, they surrender future consumption because they will have to use the income earned at a later stage to settle debts and meet interest commitments. The overall level of indebtedness of a household also limits its ability to take on additional credit.

Another example is the Slutsky equation (see Slutsky, 1915 and 1952), which is widely used when considering the change in consumer choice due to a change in price. Accordingly, the change in consumer choice is divided into two parts: the substitution effect (rate at which you can substitute one commodity for another) and the income effect (change in purchasing power of income). This type of model predicts that a lender is likely to remain a lender when the interest rate increases, while he may become a borrower if the interest rate decreases. In contrast, a borrower is likely to remain a borrower when the interest rate decreases, while he

may be prompted to become a lender if the interest rate increases. Although the results might seem unimpressive, this type of tool provides a good base from which to distinguish between the expected behaviour of consumers and can be used for more complex analysis.

2.9 Empirical literature review on the drivers of household saving(s)

The aim of section 2.9 is to highlight empirical findings related to the determinants of household saving(s) for South Africa, as well as for a few selected countries or groups of countries. In keeping with the consensus used throughout this chapter, the concept of saving is used in general terms or as a collective for the various types of saving (see explanation in section 2.1). It is important to note that the focus of this study is to determine (or quantify) to what extent households make use of voluntary savings products rather than to identify the determinants (or drivers). However, these empirical findings add value in as far as it provides context for interpreting several of the study's findings. The review starts with evidence from a selection of countries and country groupings, followed by findings from studies that focus on South Africa.

Kolasa and Liberda (2015) used annual panel data from 1995 to 2011, for 28 OECD countries, to determine their drivers of household saving rates. Findings include a positive relationship to the terms of trade and GDP volatility, while household saving responded negatively to both government saving and corporate saving. The same authors isolated the determinants of saving in Poland, using quarterly time-series data for the period 1999 to 2012. They find a positive relationship with income, real interest rates and inflation and negative relationships to government saving and financial depth (expressed as the M2-to-income ratio). Financial debt proved to be the most important driver of Polish household saving and interestingly also differed from the results obtained for the OECD sample in both sign and magnitude. The authors mentions as reasons Poland's "liberalization of financial markets in the 1990's" and "access to the European Union in 2004" as contributing factors to rising indebtedness and increased consumption expenditure before the GFC (Kolasa and Liberda, 2015:144).

Prema-Chandra and Pang-long (2003) applied unrestricted error correction modelling to data from Taiwan for the period 1952 to 1999. They found that household saving is positively related to income (both the level and rate of growth in household disposable income) and interest rates. However government saving, consumer credit, dependency ratios (both during

old and young age), as well as social security provisions, all had a negative impact on household saving.

China is an important country to take into consideration as it has some of the highest national gross saving rates globally, including a household saving rate which since 2003 has averaged well above 30,0 percent of disposable income. Empirical studies include Horioka and Wan (2007), which used a panel data approach to compile data from household surveys of Chinese provinces for the period 1995 to 2004. They find that over the short run, the lagged saving coefficient is positive, implying that the higher saving was in the previous period, the higher current saving will be. They also find income growth to have a positive effect. Variables such as the real interest rates, the inflation rate and the age structure of the population all measures insignificant impacts. Cronje and Roux (2010) did a qualitative study in which they compared the determinants of household saving in China, India and South Africa, with a specific focus on the middle class consumer. They find that tradition and culture (including Confucianism and the virtue of thrift it emphasises, as well as the importance allocated to making provision for the needs of family members), decreasing dependency ratios (both for old and young age), precautionary saving (inadequate social security systems) and a lack of financial sector depth, all contribute to the high household saving rate.

Looking at research pertaining to the USA, Tunc and Yavas (2017) used quarterly data from 1987 to 2013 to analyse household saving (also referred to as ‘personal saving’ in the USA literature). They find a statistically significant and positive relationship to the lagged personal saving rate, the interest rate, and inflation while government saving (“public” saving rate) and the mortgage payment rate have negative signs. Kim (2010) used a time series model for the period 1950 to 2007, and found income to be positively related to personal saving. Surprisingly the coefficient for economic growth (GDP) was highly significant, but negative, implying that “when there is a negative external shock to the USA economy, people tend to save more” (Kim, 2010: 41). Tunc and Yavas (2017) also found a negative relationship between personal saving and the growth rate of per capital real income, but it had an insignificant impact.

Bebczuk, Gasparini. Garbero and Amendolaggine (2015) pooled a broad dataset of official household surveys for 10 Latin American countries and 27 surveys covering selected years from the 1990s, 2000s and 2010s. In general they find “a wide dispersion of saving rates across countries and periods and equally huge differences between aggregate, mean and median saving rates”. They further find that half of the households display “negative saving” (Bebczuk,

et al. 2015:21). As far as determinants of household saving they found a positive relationship to income, the age of the household head (positive but decreasing) and homeownership. On the negative side, the most robust variable were a “female household head”, while others include the dependency ratio as well as a higher proportion of government transfers and remittances.

Turning the attention to South Africa, Simleit, Keeton and Botha (2011) used a vector error correction model to analyse quarterly data from 1981 to 2009. They make the surprising finding that economic growth (GDP) is significantly negative related to household savings, implying that “household savings will fall during economic upswings, and increase during downswings” (Simleit et al., 2011:14). Other variables found to be statistically significant and negative include short-term interest rates, the government budget balance and corporate savings.

Kasongo and Ocran (2017) used quarterly data for South Africa from 1980 to 2016 to which they applied a Bayesian vector auto regressive model. They find household saving to have significant negative relationships to real GDP, the government budget balance, financial deepening (ratio of M2 to GDP) and inflation. The interest rate (prime lending rate) coefficient is positive but insignificant. Their finding related to the relationship between household saving and economic growth thus echoes that of Simleit et al. (2011).

Zwane, Greyling and Maleka (2016) applied panel data estimation techniques to waves 1 to 3 (2008 to 2012) of the NIDS data (also a source of data used in this thesis). They find that income and the level of education have a positive and statistically significant impact on household savings. They find an inverse relationship for the savings-age nexus, including a negative sign for age squared, indicating that “old-age individuals are net dissavers”. According to the authors these findings also “validate the lifecycle hypothesis” (Zwane, et al., 2016: 214). The household size was also found to have a negative and significant effect on household savings.

Various qualitative studies for South Africa are available, for example Prinsloo (2000) who looked at trends in saving between 1960 and 1999. Regarding the effect of real interest rates on households’ saving decisions, he finds “no agreement among economists”. In addition he notes the negative effects of “rising marginal personal-tax rates” and “persistent high inflation”. Combining these he arrives at a ‘3-sides of the same coin’ argument, which follows that an increase in interest rates alone are unlikely to incentivise South African households to save, if the impact of taxes and inflation are not sufficiently addressed (Prinsloo, 2000:16-17). He finds negative relationships between household saving and the dependency ratio, “social pensions

and social security expenditure”, and household debt. As far as income is concerned he postulates a positive relationship but finds that “individuals’ reluctance to come to terms with the slower pace of income growth (that is for 1980 to 1999)” meant a weaker propensity to save (Prinsloo, 2000:19).

Du Plessis (2008) obtained primary data from one-on-one interviews with senior economists in South Africa. He finds that income are likely positively related to household saving, while expected future income, access to credit, health (especially HIV/AIDS) and income inequality should all have negative impacts on household saving. Some of these findings are shared by Cronje and Roux (2010:25) which also mentions income inequality and the reality that a large portion of the South African population is concerned with “immediate survival” rather than to “save for the future”. Other variables expected to have a negative impact on household saving include dependency ratios, a “rather flawed” social security system, and financial liberalisation. They draw the conclusion that “South Africa has a culture of debt rather than one of saving”.

The empirical literature review identified several variables which repeatedly featured in studies related to the determinants of household saving(s). These include, but are not limited to: income (also referred to as disposable income or per capita income); economic growth (GDP or real GDP growth); demographics (e.g. life-cycle hypothesis, dependency ratios, human development); fiscal policy (Ricardian equivalence); financial depth and financial liberalization (often linked to access to consumer credit); interest rates; inflation; household wealth; corporate savings (or “piercing the corporate veil”) and poverty metrics. It is evident that most of these also featured in the theoretical literature review, discussed earlier in this chapter. The fact that the empirical findings of the correlation that these variable have with household saving(s), often differs between and within countries, makes it difficult to hypothesise expected outcomes and highlights the need for continued research on the topic.

2.10 Conclusion

This chapter indicates the vital role that saving plays in most of the major branches of economics, from the various macroeconomic models trying to determine their impact on the economy at large, through to the household level behavioural finance studies. Also evident is that saving is a subjective concept that needs to be defined properly when analysed.

A historic overview notes the varying degrees of attention and importance given to the concept, either outright or as a part of studies focusing on topics such as income or consumption. It has at times (notable around the Great Depression era) even been vilified as one of the causes for the slowdown in economic activity. However, these claims have largely been laid to rest following Keynes's work and empirical research done during the post-Keynesian period.

Concerning the application of the antecedent theories and literature, the rest of this study relies strongly on the motives for saving, as highlighted in sections 2.3.1.1 (Keynes) and 2.3.2.2 (the life-cycle hypothesis). This builds on the definition of voluntary saving (as given in chapter 1), and the notion that the motives for saving, as analysed in this study, should be voluntary or determined by individuals themselves. The LCH also helps to explain trends in demographic characteristics observed in the household survey data provided in chapter 6. Also important for the analysis of the household survey data is the intertemporal impact that saving decisions can have on the accumulation of household wealth (or savings).

From a macroeconomic perspective, the theoretical links of aggregate (or national) saving to economic growth, monetary and fiscal policy and the BoP feature strongly in chapters 3 and 4. This is especially important for the detailed discussion of developments in household saving as measured by the South African SNA (see chapter 4). Also relevant is the effect that changes in these policies can have on the growth (or lack thereof) of household net worth (or wealth), as well as their inclination to divert additional saving(s) to a particular asset class.

Chapter 3 provides an overview of the saving landscape in South Africa and includes topics such as a historic background, a look at national saving (and its counterparts), as well as the pension system, regulation and incentives to promote saving. This lays the foundation for the detailed analysis of household saving data from both a macroeconomic and survey level, to follow in later chapters.

Chapter Three: The saving landscape in South Africa

3.1 Introduction

The previous chapter provided the theoretical underpinnings as to why saving is important for an economy and households in general. The aim of this chapter is to provide a practical overview of the financial landscape in South Africa, which impacts directly on saving. However, it remains an introduction into the broader financial and socioeconomic realities at play in the country, with detailed analysis of saving at a household level, left to later chapters.

In order to “sketch” the layout of the financial and saving landscape in South Africa, the chapter starts with a brief historic account of the country in section 3.2. Thereafter section 3.3 provides an overview of national saving and its counterparts. Section 3.4 looks at the World Bank’s multi-pillar pension design as well as its application related to South Africa. Regulation and incentives to promote saving are discussed in sections 3.5 and 3.6 respectively. Section 3.7 looks at an informal saving arrangement (stokvels) in South Africa. Section 3.8 discusses social assistance payments provided by the state, while conclusions are provided in section 3.9.

3.2 A brief history

Before looking back at some of the major historic events that helped shape the country, it is worth noting that present day South Africa has one of the largest economies in Africa. It is an open, market-orientated economy, has a relatively large and young population, democratic elective system and a constitution seen to be among the most progressive in the world. South Africa officially joined the BRICS²⁴ countries in December 2010.

Despite this seemingly ideal situation, South Africa struggles with serious developmental problems, including having among the most skewed income²⁵ and wealth²⁶ distributions in the world, as well as having one of the highest unemployment²⁷ rates in the world. These remain extremely difficult developmental issues, which the country continues to grapple with presently. In order to start to put into perspective these and various other issues, section 3.2

²⁴ A group of leading emerging market economies, consisting of Brazil, Russia, India, China and South Africa.

²⁵ South Africa’s Gini-coefficient related to income is estimated at 0.63 (World Bank, 2011).

²⁶ South Africa’s Gini-coefficient related to wealth is estimated at 0.95 (Orthofer, 2016:4).

²⁷ South Africa’s official unemployment rate measured 27.5 per cent during the third quarter of 2018 (StatsSA, 2019). See section 3.2.2 also.

provides a brief historic overview of economic and political developments in South Africa. The discussion follows a pre and post-democratic (1994²⁸) framework, highlighting merely some of the major events that occurred during the time.

3.2.1 Pre-1994

As already mentioned in chapter 2, the Khoisan were the first group of people in the Cape. The first European settlers were the Dutch, who in 1652 create a refreshment station in the Cape to provide passing ships with amenities (De Villiers, 2012:41). This in essence brought with it the establishment of a more formal market economy with a strong focus on agriculture and trade.

At the turn of the 18th century, the British had taken over the Cape Colony and South Africa's industrialisation started to emerge in line with the global industrial revolution. This included basic manufacturing of goods as well as iron and copper smelters. A financial services sector with local banks, trust and insurance companies developed around these industries, providing some of the earliest indications of formal saving opportunities in South Africa. Examples of these include the Cape of Good Hope Savings Bank (created in 1831), the Eastern Province Bank (1838) and the Port Elizabeth Bank (1847), while on the insurance side, the South African Fire and Life Assurance Company was formed in 1831 in Cape Town (Verhoef, 2012:205-206).

A major early economic shift came with the discovery of minerals, notably diamonds (around 1867) and gold (1886). In 1885 the value of gold exports from South Africa was £35,300 (with total exports around £8 million), while by 1910 it reached £35 million (with total exports around £47,5 million). After the Anglo-Boer War, by the time that South Africa became a Union (1910), almost three-quarters of the country's export earnings emanated from gold exports alone. Another important development around this period was the establishment of the SARB, in 1921. The newly established central bank assumed, among others, responsibility for the issuing of banknotes and for taking over the gold held by commercial banks (SARB, 2019).

The establishment of the two parastatal organisations, the Electricity Supply Commission (Eskom) in 1923 and the Iron and Steel Industrial Corporation Limited (Iskor) in 1928 provided strong impetus to the up-and-coming manufacturing sector (Eskom.co.za). This provided

²⁸ South Africa's first (fully) democratic election took place on 27 April 1994, making it a benchmark in the country's development.

support to the economic revival, which followed the harsh economic environment brought about by the Great Depression (1929 to 1939). The timing of the establishment of both Eskom²⁹ and Iscor³⁰ were favourable, given that it was before the start of World War II (1939 to 1945), which increased the global demand for iron and steel to manufacture wartime goods (Giliomee, 2012a:298).

A sharp rise in the price of gold around the mid-1930s provided added impetus to the emerging economy. This supported household finances, and household disposable income rose strongly³¹. However, the inclusivity of the growth as it filtered through to all demographic groups remained unequal.

Despite the improvements in the general economic conditions during the late 1940s, South Africa was on the verge of a political and racial tempest, called apartheid. Giliomee (2012b:430-31) views apartheid as an extension of the already prominent segregation evident during the early 1900s, rather than a radical new policy.

South Africa became a republic in 1961 with CR Swart as its first state president and HF Verwoerd as prime minister. This had important economic consequences, including that South Africa left both the Commonwealth and the Sterling areas. A new decimal currency system was introduced, which replaced the previous system of pounds, shillings and pennies, with rand and cents, at a conversion rate of £1 = R2. These developments, coupled with rising political uncertainty (including the Sharpeville incident where protesters were shot by the police and assassination attempt on the then prime Minister, Hendrik Verwoerd) triggered large capital outflows, mainly in the form of the sale of shares in local companies (Rossouw, 2008: 165-166). In order to limit these outflows, exchange controls were introduced including a two tier foreign exchange market and dual exchange rate system. This established the financial rand system (also referred to as the ‘blocked’ or ‘securities’ rand) and the commercial rand system. In line with recommendations by the De Kock Commission, exchange controls over non-residents were abolished briefly in 1983, when the financial rand was removed and a unified

²⁹ It is ironic that, especially after 1994, Eskom’s operations and finances deteriorated to the point where it became unsustainable. The entity was increasingly singled out as one of the major risks facing the South African economy. It got so bad that President Ramaphosa established a special task team to advise the ruling ANC government on possible options to salvage the important state owned entity, including breaking it up into various parts (Eskom, 2018).

³⁰ Iscor was privatised in 1989 and Iscor Limited shares were listed as part of the Steel and Allied Sector of the Johannesburg Stock Exchange. In 2006, its name was changed to ArcelorMittal South Africa, after various mergers and acquisitions (ArcelorMittal, 2019).

³¹ Household disposable income recorded some of its highest annual growth rates of 12.7 per cent and 10.7 per cent, during 1947 and 1953 respectively (SARB, 2019).

managed floating exchange rate was introduced. Unfortunately the foreign debt crisis of 1985 soon led to the reinstatement of the financial rand system and controls over non-resident capital transactions. Exchange controls over residents were “retained but relaxed and simplified” (Republic of South Africa, 1985: 131-135). The financial rand system remained in place until March 1995 (Hodge, 2001: 60).

In the midst of these significant changes the South Africa economy still experienced unprecedented growth spurts between 1950-1970, including annual growth of 7.4 per cent and 7.9 per cent during 1963 and 1964 respectively. This corresponds with the global economic boom experienced post-World War II.

However, the momentum faltered as South Africa’s growth performance started to lag behind its Commonwealth peers from the 1970s onwards. Although global economic growth also came under strain during the 1970s³² and 1980s, South Africa fared much worse than countries it could still compete with during the 1960s.

In reaction to the apartheid policies adopted by the National Party (the ruling party of the day), the United Nations suspended South Africa’s membership in 1974 and the country was only readmitted following the transition to democracy in 1994 (United Nations, 2017a and b). Many countries adopted trade and financial sanctions against South Africa and a significant amount of foreign disinvestment occurred. South Africa experienced a financial crisis in 1985, triggered by an unsustainable rise in its level of foreign debt. Foreign debt as a percentage of GDP more than doubled in merely five years, from 20.3 per cent in 1980 to 50.0 per cent in 1985. The situation was worsened by the fact that a significant part of the debt was owed on short-term debt obligations.

The situation became so bad that the South African government had to impose drastic measures, including “closing” the foreign exchange market for three trading days (during August 1985) and imposing a unilateral moratorium on South Africa's short-term international debt, as a response to global banks calling in their loans. Despite South Africa being able to negotiate repayments, under – among others – the “debt standstill” agreements, these actions had a significant negative impact on international investors’ gauge of South Africa’s creditworthiness, and led to the reinstatement of the financial rand as explained above (Hirsch, 1989; Levy, 1999).

³² Notable due to the international oil price shocks of the 1970s.

Economic growth continued to taper down and recorded a meagre 1.4 per cent average rise during the 1990s (see table 3.1). This indicates that although the economy's wheels kept turning, albeit slower, the apartheid policies ultimately proved to be unsustainable to the economy.

Table 3.1: South African GDP, 1950 to 2018 (constant 2010 prices, R millions)

	GDP (millions)	Percentage change (%)
1950-1959	R 462,629	4.7
1960-1969	R 759,861	5.5
1970-1979	R 1,169,314	3.3
1980-1989	R 1,510,447	2.2
1990-1999	R 1,709,604	1.4
2000-2009	R 2,327,958	3.6
2010-2018*	R 2,988,204	1.8

*Most recent figure available

Source: SARB; compiled by author

Early indications provide evidence that income distribution between racial groups was highly unequal. By 1960 the average white South African had roughly R12,0 disposable income for every one rand of an African, while by 1980 this ratio was about R9,4 to every one rand of an African. Despite a narrowing between these two races over time, this difference in absolute (buying power) terms remained vast (see table 3.2).

Education is seen as a significant differentiator to explain the huge discrepancies in personal income between races. Various authors see the racial philosophy and legacy of apartheid as being the most prominent in the education system (see Van der Berg, 2005; Heaton, Amoateng & Dufur, 2012; Politicsweb, 2012; South African History Online, 2015).

Table 3.2: Disposable personal income (constant 1990 prices)

	1960	1970	1980
White	R 12,114	R 17,260	R 17,878
Indian	R 2,171	R 3,674	R 5,655
Coloured	R 2,000	R 3,033	R 3,933
African	R 1,033	R 1,439	R 1,903

Source: Giliomee, 2012b:440

3.2.2 Post-1994

South Africa's first fully democratic elections took place on 27 April 1994, which also marked the end of a continuous recession during the political transition period (1991 to 1993). Post-1994 the economy made an about turn and achieved an average growth rate of close to 2.5 per cent per annum during 1994 to 1999. Factors that supported economic growth include South Africa's re-introduction into global financial markets, the lifting of various international sanctions, proper planning and implementation of the then newly designed Growth, Employment and Redistribution (GEAR) development plan, as well as monetary and fiscal prudence.

Inflation was reigned in from double-digit rises during the early 1990s to 5.2 per cent by 1999. On the fiscal side, the budget deficit was lowered from more than 9.0 per cent of GDP in 1993 to 1.0 per cent around 2000, which consequently lowered public debt significantly. This growth spurt continued (and accelerated) well into the 2000s after which it finally came to a sudden end during the GFC.

The South African financial sector played a vital role in stabilising the macroeconomic environment during the transition period. However, authors such as Nowak (2005) lament the persistent limited access to banking (sometimes referred to as the "unbanked" segment of the population) and other financial services especially evident among the black population.

Other social and developmental challenges included a public healthcare system that was under severe strain, given the HIV/AIDS and tuberculosis pandemics (Nowak and Ricci, 2005:vii). Unemployment, poverty and crime persisted, while the educational system was struggling to cope with the demand for scarce skills urgently required by the economy.

Early policies of the African National Congress (ANC), the ruling party since 1994, proved successful in boosting economy growth. This included the GEAR programme (1996-2005). Nevertheless, social pressure started to mount, especially with regard to the perceived lack of transformation in the economy. The ANC introduced various policies to try to reduce the inequalities. In 2003, the Broad Based Black Economic Empowerment (BBBEE) Strategy was published as a precursor to the B-BBEE Act, No. 53 of 2003 (Republic of South Africa, 2019). By 2004 it was estimated that the black middle class comprised 11.0 per cent of South Africa's total middle class; however, this still represented only a small part of the larger black population (Brits, 2012:564).

In, what seemed to be an attempt to try to please various interested parties, the ANC has adopted a new development plan roughly every four years since 2006 (see table 3.3).

The National Development Plan (NDP) was formally introduced during the 2013 Budget speech. Important to this study is that, as part of the NDP’s “key targets and implementable actions”, the goal was set for the savings³³ rate to rise to 25.0 per cent by 2030 (NDP, 2011:28). The plan viewed the existing “curbed savings rate in South Africa” as an inhibiting factor to foreign investment (NDP, 2011:104). Unfortunately, as will be shown in section 3.3, South Africa has barely managed to maintain a gross national saving rate of more than 15.0 per cent since 2010.

Table 3.3: Development plans in the Republic of South Africa, 1975 to 2017

1975: National Physical Development Plan (<i>Nasionale Fisiese Ontwikkelingsplan</i>)
1981: The Good Hope plan for Southern Africa (<i>Die Goeie Hoop plan vir Suider-Afrika</i>)
1988: Regional Development policy in southern Africa
1994: Reconstruction and Development Programme (RDP), (“election manifesto”)
1996 (June): GEAR
2006 (Feb): Accelerated and Shared Growth Initiative for South Africa (ASGISA)
2006 (Mar): Joint initiative and priority skills acquisition (JIPSA) – part of ASGISA
2010 (Feb): New Growth Path (E Patel)
2013 (Feb): NDP (T Manuel)
2017: Inclusive Growth Action Plan (“14-point plan”) ³⁴ (M Gigaba)
2017: Radical Economic Transformation ³⁵ (M Gigaba)

Source: Compiled by author

³³ Interpreted as the gross national saving rate, defined and analysed in detail in section 3.3.

³⁴ Not officially adopted as a development plan. Released as an “intervention” in response to the technical recession the economy experienced during the last quarter of 2016 to the first quarter of 2017 (National Treasury, 2017b). Revised GDP figures would indicate that growth values of 0.4 and -0.5 per cent were recorded during the last quarter of 2016 and the first quarter of 2017 respectively, therefore it was not actually a technical recession. Nevertheless, the first two quarters of 2018 both recorded negative growth, meaning a technical recession did occur, albeit roughly a year later (StatsSA, 2018a). This also draws into dispute the effectiveness of the so-called Inclusive Growth Action Plan.

³⁵ Not officially adopted as a development plan. However, the concept has featured prominently in various speeches of former President Zuma and Finance Minister Gigaba during 2017, and formed part of the “Economic Transformation Discussion Document” of the ruling (ANC) party’s National Policy Conference, held during June 2017 (African National Congress, 2017). However, at the time of this study, details related to it remain uncertain and may not progress further due to former President Zuma being replaced by President Ramaphosa, who assumed office on 15 February 2018.

South Africa's unemployment problem is briefly mentioned earlier in this section. Being unemployed severely limits an individual's potential for earning an income, as well as their ability to save or to accumulate wealth. Therefore, it seems fitting to close this section with a more detailed look at this very serious socioeconomic problem facing the country.

South Africa's official unemployment rate stood at 27.5 per cent during the third quarter of 2018. Especially worrying is the extremely high unemployment rate among younger individuals, which – at the time – stood at 52.8 per cent and 34.0 per cent for individuals within age cohorts 15-24 and 25-34 respectively (Statistics SA, 2018a). The fact that youth unemployment is of a structural³⁶ nature makes it all the more problematic.

South Africa's young-age dependency ratio (ratio of children aged 15 or less to the working age population) did improved markedly from 70.0 per cent during the 1980s to 40.0 per cent by 2010 (The World Bank, 2011:27). Nevertheless, the inability of the youth to find work meant that the effective dependency on income earners did not improve. Therefore continuous structurally high unemployment is certainly one of, if not the biggest, income and saving limiting problems facing South Africa.

Section 3.2 provided a brief historical overview of South Africa. It concludes that South Africa has an extremely heterogeneous population, from both a political and economic perspective, while various inequalities persist.

Continuing to encourage the practice of saving in South Africa from a macroeconomic perspective, households' saving forms part of national saving, which is discussed in the next section.

3.3 National saving

This section looks at trends in national saving, which includes general government saving, corporate (financial and non-financial corporations) saving and household (including non-profit institutions serving households) saving. This section shows that since the 1980s,

³⁶ Structural unemployment is seen as a more complex type of unemployment (as opposed to frictional, seasonal or cyclical) as it occurs when there is a mismatch between workers' qualifications or training and labour market demands due to, among others, the structure or structural changes in the economy. Factors that can potentially aggravate this include the lack of education, training or skills; technological changes; structural decline in certain industries (the gold sector is a good example in South Africa); discrimination (e.g. certain apartheid laws) or foreign competition (Mohr et al. 2008:499-500).

corporate saving provided most support to national saving, while government and household saving were lagging.

Another important analytical distinction is drawn between the gross and net calculations of saving. Gross saving³⁷ (for the economy as a whole) consists of saving by the three main components (general government, corporate sector and households), including the consumption of fixed capital (depreciation). The saving rate is a widely used measurement of the saving performance of an economy (or a sector) and is a ratio calculated by expressing gross saving as a percentage of GDP³⁸.

Net saving, in contrast, is obtained by subtracting the consumption of fixed capital (or provision for depreciation) from the gross saving amount. Mohr (2016:41) states that the consumption of fixed capital is an amount set aside to replace the capital equipment “used up” during the production process.

From the literature, the gross value seems to be the preferred indicator for analysis (see for instance Prinsloo (2000); the World Bank (2011); South Africa Reserve Bank Quarterly Bulletin (various issues); Viegi (2014), Mohr (2016)). However, in contrast to this, Orthofer (2015:18) stresses the importance of the net value for both microeconomic (“households seek to achieve saving and accumulate assets beyond what is needed to offset wear and tear on existing assets”) and macroeconomic (“net rather than gross saving constitutes the resources for new investment in the economy”) analysis. For the sake of comparability with existing literature, the analysis of the national saving data in chapter 3 will mostly focus on the gross value, while the detailed technical analysis of the household sector data (chapter 4) will emphasise the net values. However, in various instances, graphs depicting both gross and net measures are provided below.

During the 1960s gross national saving gradually rose to an intermittent high point of 26.1 per cent of GDP during 1963, which is shortly after South Africa became a republic. Prinsloo (2000:9) mentions two exceptional upswing phases around 1971-1972 and 1978-1981 when the strong international gold price provided windfall profits to the gold mining industry (see

³⁷ A theoretical breakdown is provided in section 2.7.

³⁸ As these numbers are expressed as a ratio it is important to keep in mind the possible dualistic sources of the movements in the observed trends, notably in this case volatile GDP periods, such as around the GFC

figure 3.1). These windfalls are especially evident in the corporate saving rate, which more than doubled from 8.4 per cent of GDP in 1971 to 19.1 per cent by 1980 (see figure 3.2).

However shortly after the peak, saving rates dropped sharply during 1981-1982 as the global oil price shocks (related to speculation over the existence or not of the so-called “oil glut”) drove inflation and interest rates higher, both globally but also in South Africa. South Africa experienced negative real interest rates during 1979-1981 and again in 1986-1987. This coupled with weakening growth (GDP) performance of the economy during the 1980s further hampered the saving performance. By 1989 gross saving was at 24.0 per cent and dropped sharply during the political transition years (1990-1994) to 17.2 per cent in 1993.

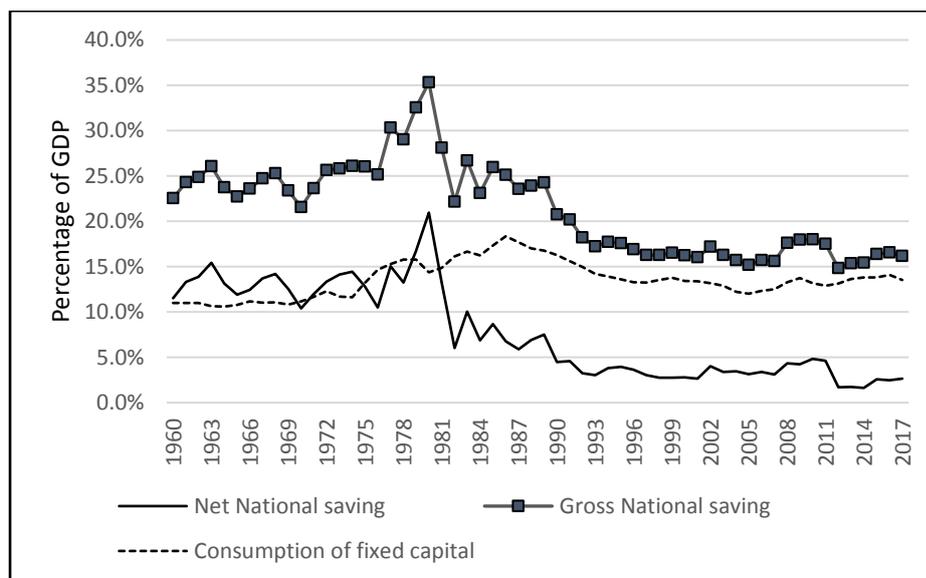


Figure 3.1: South African gross and net national saving rates, 1960 to 2017
 Source: SARB; compiled by author

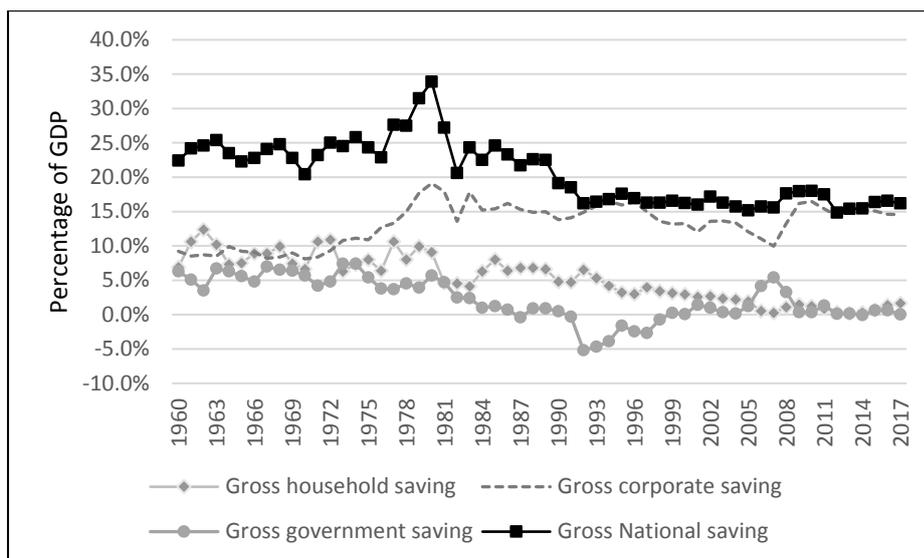


Figure 3.2: South African gross saving rates by sector, 1960 to 2017

Note: Corporate saving includes both financial and non-financial corporations.

Source: Prinsloo (2000:7); SARB³⁹; compiled by author

Between 1995 and 2017 (the post-apartheid years), the national saving rate averaged 16.4 per cent of GDP. During the early part of the transition years (around 1995 to 1997) corporate saving rose notably, supported by significant decreases in the corporate tax rate (as discussed further in section 3.5.3.5). A notable increase is evident again around the GFC. The improvement originated from government saving, supported by strong GDP growth performance and the related improved state finances during the period 2005 to 2007. However, as growth faltered and fiscal spending turned countercyclical during the unfolding of the crisis, government saving fell.

Saving in the corporate sector then increased, clearly uneased by the crisis, as is evident in the corporate saving rate rising sharply from 10.0 per cent in 2007 to 18.0 per cent by 2010. Households reacted similar to corporations and the gross saving rate by households rose from (an all-time low) of 0.2 per cent in 2007 to 1.5 per cent in 2009.

In the aftermath of the GFC, gross national saving in the South African economy tapered down to below 15.0 per cent in 2012. By 2017, it did recover slightly to 16.2 per cent.

As expected, the trends in net saving (see figure 3.3) are similar to those observed for the gross data (as shown in figure 3.2), but it is evident that the net values are significantly lower (due to the consumption of fixed capital being taken into account). For example, during 2015, gross

³⁹ KBP6006, 6203, 6725, 6765, 6803 and 6848.

national saving amounted to 16.3 per cent of GDP, while the net national saving was only 2.5 per cent of GDP. Also evident is that whereas gross household saving managed to stay positive, albeit just, net household saving recorded negative (dissaving) figures since 2006. In 2017, it did again manage to record a small positive value of 0.2 per cent of GDP (saving of the household sector is discussed in detail in chapter 4).

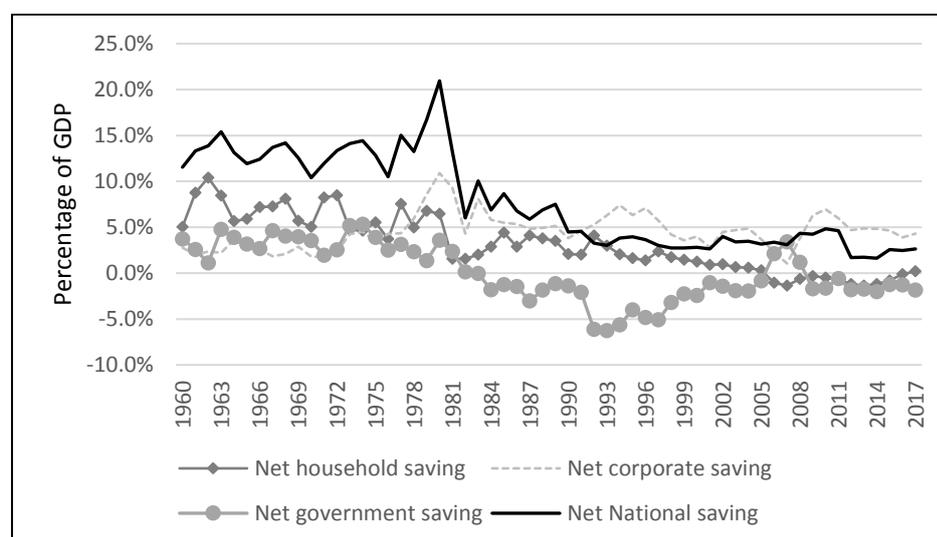


Figure 3.3: South African net saving rates by sector, 1960 to 2017
 Source: SARB⁴⁰; compiled by author

In section 3.4, the focus falls on the pension system in South Africa. The sufficiency of the system is analysed according to the World Bank's (2005) multi-pillar pension design methodology.

3.4 The pension system

Chapter 2 mentions various saving motives or reasons why individuals (and households) chose to save, including the notion of foresight, also interpreted as making provision for one's old age (see section 2.3.4 for a summary of the saving motives). Although risky to speculate as to which saving motives are most important to individuals at a specific stage of their lives, it seems reasonable to assume that, in general, saving for the sake of retirement planning (or using one's foresight) will rank among the top reasons (whether this is voluntary or mandatory).

⁴⁰ KBP6006, 6200, 6201, 6203, 6887.

This section provides an overview of South Africa's pension system. It is also important to recall that the topic of this study is directly deducted from the World Bank's (2005) multi-pillar pension design methodology, but is here applied to saving in general (meaning that all saving motives and time-frames are taken into consideration). The World Bank's design was introduced in section 1.1, but will again be explained in more detail in this section.

3.4.1 The World Bank's multi-pillar pension design

The World Bank (1994 and 2005) made proposals for a multi-pillar approach to support countries in designing and testing the sufficiency of their pension systems. Pension systems can be defined as "methods of addressing and managing the risks of the aging" as it "creates the capacity for individuals and society as a whole to maintain consumption for older populations when they are either unable or unwilling to remain economically active" (World Bank, 2005:42).

The main objectives of pension systems include poverty alleviation and consumption smoothing, and ultimately the broader goal of social protection. The goals of a pension system are that it should be adequate (provides benefits to a full breadth of the population), be affordable (within financing capacity of individuals, without untenable fiscal consequences), be sustainable (financially sound) and robust (capacity to withstand major shocks, be they economic, demographic or political). It should also seek to improve welfare schemes in a manner appropriate to the individual country (World Bank, 2005:1-6).

The conceptual framework is seen as a "benchmark" and "not a blueprint" given the widely varied circumstances experienced in individual countries (World Bank, 2005:53). Designing an "optimal" pension system is always going to be challenging given the fact that pension benefits are, in essence, claims against (uncertain) future economic output.

The World Bank's model comprises a combination of five basic elements (or pillars), ranging from a "safety net" (pillar zero), to "modest pensions" (pillars 1 and 2), a "pension booster" (pillar 3) and/or other voluntary provisions (pillar 4) (see table 3.4).

Table 3.4: The World Bank’s multi-pillar pension design

Pillar 0 (Safety net)	Pillar 1 (Modest pension)	Pillar 2 (Modest pension)	Pillar 3 (Pension booster)	Pillar 4 (Other provisions)
<ul style="list-style-type: none"> • Non-contributory • Lifetime poor • Informal sector workers • Usually means tested • Design options: <ul style="list-style-type: none"> • Expansion of the contribution system • Integration with social assistance programmes • Universal basic pensions • Means-tested basic pension (SOAG in SA) 	<ul style="list-style-type: none"> • Public pension • Mandatory contribution (by all working age population) • Design options: <ul style="list-style-type: none"> • Flat benefit (means-test) • Progressive defined benefit (related to earnings) • Defined benefit (non-financial defined contributions) 	<ul style="list-style-type: none"> • Private pension • Mandatory contribution (enforced by employer) • Occupational (employer/employee relationship) 	<ul style="list-style-type: none"> • Private pension • Voluntary contribution • Aimed at more generous benefits, or early retirement • Financial assets 	<ul style="list-style-type: none"> • "Broad" list of possible options • Voluntary financial and non-financial assets • Intra-family or intergenerational commitments • Informal savings mechanisms • Non-cash benefits (government funded): <ul style="list-style-type: none"> • Medical care • Water • Sanitation • Housing

Source: World Bank, 2005; compiled by author

3.4.2 The South African pension system

Broadly applying the World Bank’s (2005) general pension design to South Africa shows that the country has all the pillars, except for pillar 1⁴¹. South Africa has a relatively large⁴² non-contributory (pillar zero) social assistance programme (see section 3.7), while private mandatory contribution, occupational type (pillar 2) pensions is also well established. In relation to South Africans’ choices when it comes to voluntary savings (pillar 3), Van der Merwe (2004) states that it ranges from rather primitive (“keeping savings in a ‘safe’ place at home”) to sophisticated (unit trusts, bonds, equities and hedge funds). South Africa also strongly relies on pillar 4 (family networks and housing), including the use of informal saving items such as stokvels (see section 3.8), as well as publicly funded provision for basic services, including housing, healthcare, water and sanitation (quantifying some of the pillar 3 and 4 items are dealt with in detail in chapters 4 and 6).

Despite already having four of the possible five main pillars, the question remains as to how well South Africa’s pension system fares when compared to the goals outlined above? By

⁴¹ The Unemployment Insurance Fund and the Road Accident Fund could be viewed as quasi-pillar 1 arrangements in South Africa. Also, proposals for the creation of a National Social Security Fund exists, as discussed in more detail below.

⁴² Compared to population size.

international standards, South Africa has a strong private occupational pension system, including a pension fund asset to GDP ratio of more than 63.0 per cent⁴³ (National Treasury, 2007:5). Figure 3.4 provides an overview of the various types of formal retirement provision funds in South Africa. Additional detail of some of these (notably the definitions of pension and provident funds) are discussed in section 3.5.3 below.

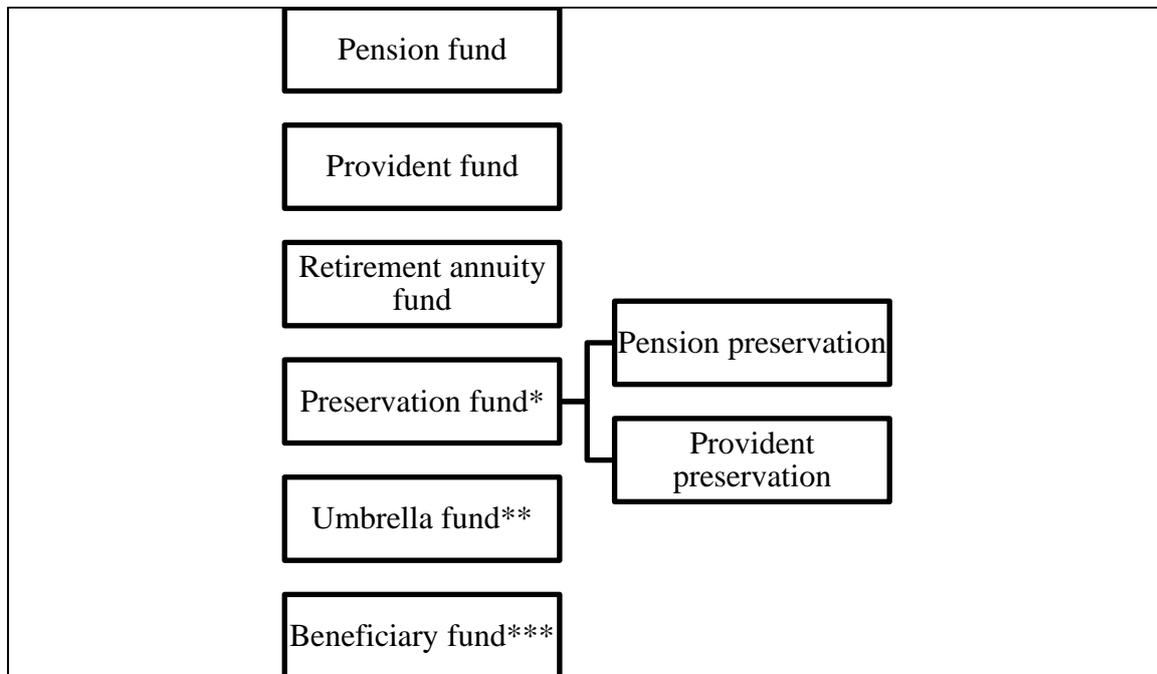


Figure 3.4: Types of formal retirement funds in South Africa

*Purpose to house withdrawal benefits from an occupation scheme, in another kind of retirement vehicle until person reaches retirement age.

**Normal pension or provident funds in which multiple, usually unassociated employers participate; opportunity for smaller employers to provide retirement fund benefits to employees where a self-standing fund will not be cost effective.

***Primarily to accept benefits arising from the death of members of a retirement fund and manage payment of benefits to beneficiaries.

Source: Botha et al. (2009); compiled by author

However, research conducted in 2006 indicates dismal participation in pension and endowment type products among low-income households (Genesis Analytics, 2008:3). The same research found that there are few private and voluntary long-term retirement savings products that are well suited to the needs of low-income individuals, while there is a desperate need for additional information related to the value, risk, returns and costs of these products (Genesis Analytics, 2008:28-29). Van der Merwe (2004:309-310) adds to this concern by stating that the relatively large lump sum or monthly payments associated with the sophisticated

⁴³ This value compares favourably to countries such as the United Kingdom, Australia, Singapore, Chile and Malaysia (National Treasury, 2007:5).

instruments, puts them out of reach of low-income individuals. He concludes that instruments of voluntary saving should receive more attention to ensure that the needs of all citizens are met.

This raises serious questions, especially regarding the adequateness and affordability of the current pension system in South Africa. The World Bank (2016) makes the observation that “(i)n middle-income countries, large gaps in pension coverage exist among lower income, informal sector workers. This is compounded by demographic pressures straining the ability of pension systems to finance benefits”. This confirms that these are certainly not uniquely South African problems, and that possible lessons could be learned from other countries.

Regarding social security, proposals for the creation of a National Social Security Fund (NSSF) date back to 2007, and during 2016 a draft paper was released and discussed at the National Economic Development and Labour Council (Nedlac). The aim of the document is to provide “universal retirement or life insurance cover”, particularly to “low-income formal-sector workers who do not have such cover”. Suggestions include that employers and workers contribute a combined 12.0 per cent of qualifying income, up to a given ceiling. Workers with an income below a pre-determined level will be subsidised by government. The notion is that this will, among others, create “social solidarity” where “everyone contributes according to their means, while receiving benefits according to their needs” (Business Day, 2016a; National Treasury 2012b, Budget Review:77-80; National Treasury 2007, Budget Review:110).

A major challenge relates to likely (unintended) negative consequences such an arrangement could have on the existing pillars. This could include a loss of clients or funds from existing occupational and voluntary pension funds catering for low-income earners. It has to be weighed-up against the notion that the state will ultimately have to provide for workers who do not save or make sufficient provision for their retirement.

Given the vast number of uncertainties, it seems unlikely that a pillar 1 arrangement is to be implemented soon in South Africa. It also highlights the importance of gaining more quantifiable knowledge about the extent of various sources of saving and retirement provisions in South Africa, which will enable policy-makers to make informed decisions. This study wants to contribute to this discussion.

The next section deals with regulation of the financial sector in South Africa.

3.5 Regulation

This section discusses some of the main pieces of regulatory legislation applicable to the financial sector in South Africa, and especially how they are likely to influence household saving. A preliminary scan indicates a plethora of acts and codes viewed by some as excessive (see for instance KPMG, 2013; Botha et al., 2009). As an introduction, the section starts with the objectives of regulation in general.

3.5.1 Objectives

Regulation is a vital part of the sustainability of financial services, despite it inevitably being viewed as a contentious issue. The GFC, however, emphasised the importance of regulation once again. Against the background of protecting all parties, the objectives of regulation in general include the following:

- to provide a framework for regulation for the various sectors of the financial services industry;
- to protect members of the public;
- to ensure that members of the public are informed and educated;
- to ensure that businesses follow the principles of best practice;
- to create a stable financial services industry.

(Botha et al., 2009).

Arguments supporting regulation in South Africa include that financial literacy in general is very low, financial products and services are often intangible, financial products are mostly complex and difficult to understand, and that unlicensed operators need to be kept at bay, including dubious schemes (fraudsters) (Botha et al., 2009:68; National Treasury, 2014c:20).

3.5.2 Overview

The South African financial regulatory landscape is experiencing an extensive overhaul, which has been in the pipeline for many years (some examples dating from the early 2000s). It forms

part of the bigger global drive to the third version of the Basel Accord (Basel III⁴⁴), which was strongly influenced by various deficiencies in global financial regulation pointed out by the GFC (KPMG, 2013 and 2017).

Essentially, the twin peaks model implies that the various regulatory authorities that existed before were simplified into only two: a prudential and a market conduct regulator. The prudential regulator is based in the SARB, while the Financial Services Board (FSB) was transformed into a dedicated market conduct regulator, renamed the Financial Sector Conduct Authority (FSCA). The Financial Sector Regulation Act, 9 of 2017 established both regulators, which became operational on 1 April 2018.

The objectives of the changes include “strengthening consumer protection and market conduct in financial services”, and to create a more “resilient and stable financial system” (FSB, 2017a). The Prudential Authority’s objective is to promote and enhance the safety and soundness of regulated financial institutions (institutions’ financial health). The objectives of the FSCA include enhancing the efficiency and integrity of financial markets to promote fair customer treatment, the provision of financial education and to promote financial literacy, and to assist in maintaining financial stability (Financial Sector Conduct Authority, 2019).

The main pieces of legislation of the twin peaks model include the *Financial Sector Regulation Act, 9 of 2017*⁴⁵ and the *draft Conduct of Financial Institutions (CoFI) Bill 2018*. Another important precursor to the draft CoFI Bill is the *Treating Customers Fairly in the Financial Sector: A Draft Market Conduct Policy Framework for South Africa* document, which was released in December 2014 (National Treasury, 2016a and 2018a). A schematic representation of the existing and proposed new legislation is provided in table 3.5.

⁴⁴ Despite still implementing Basel III, there is already an updated version available. Items covered by Basel IV include increasing the regulatory capital requirements of banks, increased standards related to counterparty credit risk, market risk, and interest rate risks. Its exact implementation date remains uncertain (KPMG, 2016:3-4).

⁴⁵ On 21 August 2017, former President Zuma signed the Financial Sector Regulation Bill [B34D-2015] into law, which is now the Financial Sector Regulation (FSR) Act, 9 of 2017 (National Treasury, 2017c).

Table 3.5: Regulatory structure of the financial sector⁴⁶

Financial inclusion policy/regulation: <ul style="list-style-type: none"> • Financial Sector Charter (2003) • Financial Sector Regulation Act, 9 of 2017 		
<p style="text-align: center;">Prudential (SARB)</p> <ul style="list-style-type: none"> • SARB Act (90 of 1989) • Banks Act (94 of 1990) • Insurance prudential <ul style="list-style-type: none"> - Long-term insurance Act (52 of 1998) - Short-term insurance Act (53 of 1998) • Collective Investment Schemes Control Act (45 of 2002) • Pension Funds Act (24 of 1956) 	<p style="text-align: center;">Market conduct (FSCA)</p> <ul style="list-style-type: none"> • Insurance market conduct <ul style="list-style-type: none"> - Long-term insurance Act (52 of 1998) regulations - Short-term insurance Act (53 of 1998) regulations • Collective Investment Schemes Control Act (45 of 2002) • Pension Funds Act (24 of 1956) • FAIS Act (37 of 2003) • Financial Markets Act (19 of 2012) • Inspection of Financial Institutions Act⁴⁷, (80 of 1998) • Friendly Societies Act • Treating Customers Fairly in the Financial Sector: A Draft Market Conduct Policy Framework for South Africa (2014) (TCF) • <i>CoFI Act (probably in future)</i> 	<p style="text-align: center;">Financial Services Tribunal</p> <ul style="list-style-type: none"> • “Super” tribunal • To replace current fragmented enforcement system • Ability to hear major cases
<p>Institutional and corporate governance regulation</p> <ul style="list-style-type: none"> • Pension Funds Act (24 of 1956) • Insurance Acts (long term and short term) • Collective Investment Schemes Control Act (45 of 2002) 		
<p>Other:</p> <ul style="list-style-type: none"> • Income Tax Act (58 of 1962) • Prevention of Organised Crime Act (121 of 1998) (POCA) • Protection of Constitutional Democracy against Terrorists and Related Activities Act (33 of 2004) (POCDATARA) • Financial Intelligence Centre Act (38 of 2001) (FICA) • National Credit Act 34 of 2005 (NCA) • Promotion to Access of Information Act (2 of 2000) • Social Assistance Act • Treasury and Department of Social Development discussion papers • National Development Plan 		

Source: Genesis Analytics (2008:77); National Treasury (2014b, 2016a, 2017c); Botha et al. (2009:82); compiled by author

Despite the regulatory authorities seeming less cluttered, the two new regulators are certainly not the full story. In order to get the system to operate, various other regulatory entities are to be established. For example, financial stability is overseen by the SARB while a new Financial

⁴⁶ This is not an exhaustive list, but an attempt to summarise some of the main items.

⁴⁷ To provide for the inspection of the affairs of financial institutions; the inspection of the affairs of unregistered entities conducting the business of financial institutions; and for matters connected therewith.

Stability Oversight Committee and Financial Sector Contingency Forum are established. To maintain cooperation and consultation between regulators, the Financial System Council of Regulators and the Financial Sector Inter-Ministerial Council support the above mentioned Financial Stability Oversight Committee. An ombudsman is also established called the Ombud Regulatory Council while an independent Financial Services Tribunal deals with possible appeals (National Treasury, 2016b:7-8).

Critique of the proposed twin peaks model focuses mainly on cost implications and the additional “red tape” (or administrative burden) it may create. In terms of costs, the FSR Act will be primarily funded through levies imposed on financial institutions and fees for services provided by regulators. These are set out in the draft Financial Sector Levies Bill, released in November 2016 (Republic of South Africa, 2016).

As far as the actual costs go, National Treasury (2016b:12) estimates that the “initial costs” of twin peaks will amount to R1,0 billion (for 2016/17), or 7,4% more than their R962,0 million cost estimate under the existing institutional framework. However, they note that not all costs are taken into account. Private sector forecasts indicate that the implementation costs could be as high as R3,8 billion (Free Market Foundation, 2016).

Other critique relates to why South Africa specifically needs all the drastic changes. The GFC originated elsewhere while the South African banking system remained, for example, extremely resilient during the crisis. In its impact study, National Treasury (2016b:3) concedes, “the financial sector in South Africa was resilient through the period of the global crisis”, but adds that the country should not be “complacent” in its assumption about possible future financial instabilities (also see Business Day, 2016b and 2017a; Biznews, 23 August 2017).

3.5.3 Discussion of selective pieces of legislation

3.5.3.1 Financial Sector Charter (2003)

The Financial Sector Charter (FSC) came into effect in January 2004 as a result of agreements reached at the National Economic Development and Labour Council (NEDLAC) Financial Sector Summit in August 2002. It was drafted voluntarily by the Financial Sector Trade Associations⁴⁸ and the Association of Black Securities and Investment Professionals (ABSIP)

⁴⁸ The Association for Savings and Investment South Africa (ASISA); South African Insurance Association (SAIA); International Banking Association (IBA); Banking Association of South Africa (BASA), JSE Limited.

while government participated in an observing capacity. Although labour⁴⁹ and community constituencies⁵⁰ were not included in the drafting of the Charter, they agreed to participate in its governing structures. It is a Transformation Charter as contemplated in the Broad Based Black Economic Empowerment (BBBEE) Act (53 of 2003) legislation (Financial Sector Charter 2003; RSA, 2012).

The Charter has a strong focus on first order retail products, which, as per its definition in the Charter, include “savings products and services, being a first order basic and secure means of accumulating funds over time (e.g. savings accounts, contractual savings products such as endowment policies, collective investments and community-based savings schemes)” (Financial Sector Charter, 2003:2.27.2).

Section 8 of the FSC deals with access to financial services and aims to support “higher levels of savings and investment overall”. It also has a strong focus on lower income groups including specific targets related to the Living Standards Measure (LSM) 1-5 groups (FSC, 2003:8.3.1) as well as programmes aimed at consumer education⁵¹ (Financial Sector Charter, 2003: 8.4).

3.5.3.2 Pension Funds Act, 24 of 1956

The Pension Funds Act “provide for the registration, incorporation, regulation and dissolution of pension funds and for matters incidental thereto”. It is important legislation as it allows for the registration of pension fund organisations as juristic persons. It also provides the definition of a Pension Fund Organisation as “any association of persons established with the object of providing annuities or lump sum payments for members or former members of such associations upon their reaching retirement dates, or for the dependants of such members or former members upon the death of such members” (Republic of South Africa, 1956:2 & 8).

Included in the Act are various provisions related to the soundness of pension funds, including governance requirements. It details how investments should be made and what categories of investments are allowed. It also provides formulae for the calculation of member’s individual accounts, minimum individual reserves and minimum pension increases. Other important issues include third party administration and underwriting as well as the establishment of the

⁴⁹ Including the Congress of South African Trade Unions (COSATU); National Council of Trade Unions (NACTU); Federation of Unions of South Africa (FEDUSA).

⁵⁰ Financial Sector Campaign Coalition; Disabled People South Africa; National Co-operatives Association; Women's National Coalition; SA Youth Council; SA National Civics Organisation.

⁵¹ This includes a commitment from firms to annually invest a minimum of 0.2% of post-tax operating profits in consumer education programmes.

Pension Funds Adjudicator, to (more cost-effectively) deal with complaints. The Pension Funds Registrar is housed within the FSB and is responsible for the supervision of all retirement funds (Genesis Analytics, 2008:80-81; Republic of South Africa, 1956).

Somewhat unexpectedly, the Act does not differentiate between the types of retirement funds; rather these distinctions are found in the Income Tax Act (see section 3.5.3.5).

Important changes were announced⁵² to Regulation 28 of the Act during 2011, related to specific investment limits for different instruments. The preamble to this was that “a fund has a fiduciary duty to act in the best interest of its members whose benefits depend on the responsible management of fund assets. This duty supports the adoption of a responsible investment approach to deploying capital into markets that will earn adequate risk adjusted returns suitable for the fund’s specific member profile, liquidity needs and liabilities”. This introduced certain investment limits, defined as “the maximum percentage of aggregate fair value of total assets of a fund”, for example, a maximum of 25.0 per cent exposure to property or offshore assets, or 75.0 per cent exposure to equities (National Treasury, 2011). These investment limits were adjusted in February 2018 when both the offshore allocation limits, as well as allocation to African investments for institutional investors, were increased by 5.0 percentage points each (National Treasury, 2018b:23). This means that 30.0 per cent of funds could be invested offshore, while the special allocation to African investments (outside South Africa) increased from 5.0 per cent to 10.0 per cent.

Research among asset (fund) managers indicates that the average exposure of their investments to offshore funds remained below these limits, even before the February 2018 adjustments (Moneyweb, 2018). It is therefore unlikely that the latest adjustments will have a significant immediate impact on the performance of retirement savings in general.

3.5.3.3 Long-Term Insurance Act, 52 of 1998

The Long-Term Insurance Act (1998) consists of two parts: the Regulations passed under the Act, as well as the Policy Holder Protection Rules of 2004. The Act “provides for the registration of long-term insurers, for the control of certain activities of long-term insurers and intermediaries, and for matters connected therewith”. The purpose of the rules are to “enable a policyholder to make informed decisions with regard to long-term insurance products and to

⁵² On 23 February 2011 by the then Minister of Finance, Pravin Gordhan.

ensure that intermediaries and insurers conduct business honestly and fairly, and with due care and diligence” (Republic of South Africa, 1998:10 & 75).

The long-term insurance industries are closely linked to pension fund organisations as most major insurers are active in the retirement funds space through provision of group risk benefits, administration and investment management for retirement funds. Part of this interaction includes the provision of policy benefits under long-term policies, which according to the Act includes items such as disability policies, fund policies, health policies, life policies and sinking fund policies.

A fund policy means “a contract in terms of which a person, in return for a premium, undertakes to provide policy benefits for the purpose of funding in whole or in part the liability of a fund to provide benefits to its members in terms of its rules”. A sinking fund policy means “a contract, other than a life policy, in terms of which a person, in return for a premium, undertakes to provide one or more sums of money, on a fixed or determinable future date, as policy benefits; and includes a reinsurance policy in respect of such a contract”. This means that in a sinking fund the insurer conducts the long-term contractual saving itself, and it is independent of a life event. This is thus where a policyholder is insuring against investment risk and is a typical example of an endowment product.

A fund member policy is defined as “a long-term policy other than a fund policy: of which a fund is the sole policyholder; under which a specified member of the fund (or the surviving spouse, child, dependent or nominee of the member) is the life insured; and which is entered into by the fund for the purpose of exclusively funding the funds' liability to that member (or the surviving spouse, children, dependants or nominees of the member) in terms of the rules of the fund”. This means that a retirement annuity policy is defined as an individual policy for which a fund is the policyholder, but a member is the life insured (Genesis Analytics, 2008:82-83; Republic of South Africa, 1998:14, 74 & 150).

3.5.3.4 Collective Investment Schemes Control Act, 45 of 2002

The Collective Investment Schemes Control Act (CISCA) aims to “regulate and control the establishment and administration of collective investment schemes; to amend or repeal certain laws; and to provide for incidental matters”. A Collective Investment Scheme (CIS) is defined

as a scheme, in whatever form, including an open-ended⁵³ investment company, where members of the public are invited or permitted to invest money or other assets in a portfolio. Also, there has to be at least two or more investors that contribute money or other assets to the portfolio and the investors must share the risk and the benefit of investment in proportion to their participatory interest. The Act makes provision for different types of collective investment schemes, which is dealt with in different parts of the Act, for example, those related to securities, property, participation bonds and foreign CIS companies (Republic of South Africa, 2002).

All CISs must be administered by a manager licenced under CISCAs. The manager must administer the CIS honestly and fairly, with skill, care and diligence, and in the interests of the investors and the CIS industry at large. The assets of the CIS must be properly protected. There are also various other duties placed on the manager, for example, related to conflict resolution, record keeping, well-defined compliance procedures, and to maintain an open and cooperative relationship with the registrar.

As mentioned above, the amendment to Regulation 28 of the Pension Funds Act meant that investment restrictions were placed on CIS providing investment vehicles for retirement funds. This also included stipulations regarding permissible fees and other charges from the portfolio.

3.5.3.5 Income Tax Act, 58 of 1962

Section 2.5 provided the theory of how taxation policy impacts saving. In relation to personal finance, Botha et al. (2009:590) note that taxes are seen as an “expense”⁵⁴ that individuals aim to minimise. Personal income tax forms part of an individual’s disposable income calculation and features in various other calculations, including net return from investments – relevant when comparing different saving instruments.

The Income Tax Act, among others, aims to “consolidate the law relating to the taxation of incomes and donations, to provide for the recovery of taxes on persons” and “to provide for the deduction by employers of amounts from the remuneration of employees in respect of certain tax liabilities of employees” (Republic of South Africa, 1962).

⁵³ An open-ended investment company is defined in the Act as “a company with an authorised share capital, which is structured in such a manner that it provides for the issuing of different classes of shares to investors, each class of share representing a separate portfolio with a distinct investment policy” (RSA, 2002:12).

⁵⁴ The concept of “expenditure” is more relevant to the economic interpretation.

Various types of taxes, apart from personal income tax, fall under the statute of the Income Tax Act, which includes capital gains tax, dividends tax and donations tax. There are also a number of other taxes impacting on individuals, but falling under different statutes, for example, estate duty (Estate Duty Act), value added tax (Value Added Tax Act), transfer duty (Transfer Duty Act) and those related to customs and excise duties (Customs and Excise Act) (Botha et al., 2009:589; South African Revenue Services (SARS), 2019).

South Africa's taxation and expenditure framework provides for a strong transformational (or redistributive) mechanism, in part due to historic developments (see section 3.2). A progressive taxation system is in place, which means that the personal income tax (PIT) rate increases as an individual's taxable income increases.

During the 1970s, marginal PIT rates were as high as 60.0 per cent as part of the apartheid government's desperate attempt to acquire revenue. By 1991, it was at 43.0 per cent, but was raised again slightly to 45.0 per cent during 1995 to 2000. Strong economic growth performance during the mid-2000s meant that marginal rates could be lowered to 40.0 per cent, at which it remained for the period 2002 to 2014. However, rising state debt on the back of lacklustre economic growth performance again meant that the marginal PIT rate had to be increased to 41.0 per cent in 2016 and to 45.0 per cent in 2017 (see figure 3.5).

As far as the definitions of pension and provident funds are concerned, the Act requires several criteria to be met. Similarities between pension and provident funds include the fact that the fund must be registered with the Registrar of Pension Funds; an employer/employee relationship must be present; membership needs to be compulsory; and the fund must be a permanent fund, established *bona fide* for the purpose of providing annuities to members and their dependents.

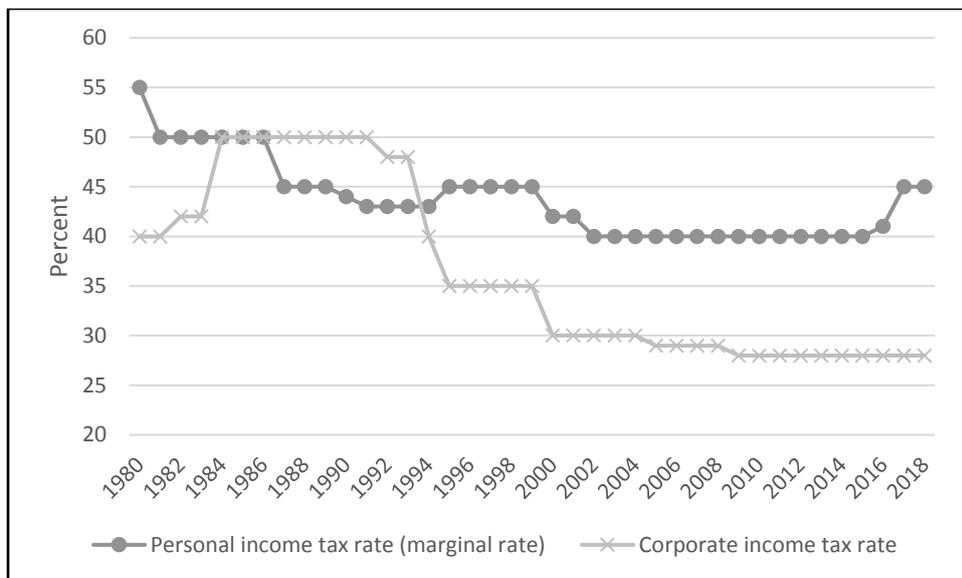


Figure 3.5: Personal and corporate* income tax rates, 1980 to 2018

Source: SARB; compiled by author

*As relating to companies including close corporations, but excluding mining companies (for which specific tax formulae and rates exist).

The main difference is that whereas a pension fund member is required to purchase an annuity with at least two-thirds⁵⁵ of the benefit, a provident fund member may take the entire benefit in cash (Botha et al., 2009:875-77). Important pieces of proposed legislation related to this are the 2017 Draft Taxation Laws Amendment Bill and Tax Administration Laws Amendment Bill, as published for comment during July 2017 by the National Treasury and SARS.

Included in these Bills are proposals that, in future, provident funds are treated the same as pension funds, including the fact that members will be required to reinvest at least two-thirds of their provident fund savings into a retirement annuity. However, these proposals were met with such fierce objection by labour unions (notably Cosatu) that Treasury delayed the implementation to provide time for more consultations with organised labour unions (SAICA, 2017). It is evident that labour unions want their members to have access to the full amount, while from a saving perspective this is seen as a sensible measure to force workers to be responsible with their retirement savings.

All lump sums received from a retirement fund, whether as a result of retirement or not (and from an employer in respect of a severance benefit), are taxed on a cumulative basis. This

⁵⁵ According to SARS (2019): “(w)hen you retire as a member of a pension fund, pension preservation fund or retirement annuity fund, and you wish to take a portion of your retirement interest as a lump sum, you are allowed to take (commute) a lump sum equal to a maximum of one-third of the retirement interest in that fund, unless the entire value of the fund does not exceed R247,500, in which case you may take the full retirement interest as a lump sum”.

implies that when the member eventually retires, the total value of all the lump sum benefits received by the member (since 1 October 2007) will be taken into account when calculating the tax payable on the member's current retirement fund lump sum benefit (SARS, 2019). The Income Tax Act differentiates between the taxation of retirement fund lump sum⁵⁶ benefits and severance⁵⁷ benefits versus lump sum withdrawal⁵⁸ benefits. The difference is that the first R500,000 of lump sum benefits and severance benefits are tax free (taxed at 0.0 per cent), while only the first R25,000 of withdrawal benefits are tax free. This is partly seen as a disincentive for early withdrawals. The possible types of funds are, however, the same, and for all options include pension, pension preservation, provident fund, provident preservation and retirement annuities.

As far as providing an incentive for additional saving goes, certain amounts contributed to pension, provident and retirement annuity funds are tax deductible⁵⁹ – limited to 27.5 per cent of the greater of remuneration for Pay As You Earn (PAYE) purposes or taxable income (both excluding retirement fund lump sums and severance benefits). This is subject to a yearly maximum of R350,000, but excess contributions can be carried over to the next tax year. The amounts carried forward are reduced by contributions set off against retirement fund lump sums and against retirement annuities (SARS, 2019).

Interest exemptions are available to monetary savings and, for individuals younger than 65, are capped at R23,800 per annum (R34,500 for people older than 65) (SARS, 2019). Assuming that the interest rate an individual can earn on savings products is 7.0 per cent (i.e. repo rate), this means that an individual could pay no taxes on interest earned in savings accounts up to R340,000 (under 65) or R490,000 (over 65), which are rather substantial amounts (calculation by author). These two amounts were not adjusted during the last two budgets (that is in 2018 and 2019).

Dividends are less straight forward as, although dividends from South African companies are not taxed in the hands of the individual, the entity paying the dividends is subject to a dividends tax. This tax is charged at 20.0 per cent on shareholders (beneficial owners) when dividends are paid to them and, under normal circumstances, is withheld from their dividend payment by

⁵⁶ These include death, retirement or termination of employment due to attaining the age of 55 years, sickness, accident, injury, incapacity, redundancy or termination of the employer's trade (SARS, 2019).

⁵⁷ These include lump sums from or by arrangement with an employer due to relinquishment, termination, loss, repudiation, cancellation or variation of a person's office or employment (SARS, 2019).

⁵⁸ These include withdrawal as well as the assignment in terms of a divorce order (SARS, 2019).

⁵⁹ S11(k) deduction (SARS, 2019).

a withholding agent (either the company paying the dividend or, where a regulated intermediary is involved, by the latter). It replaced Secondary Tax on Companies (STC) on 1 April 2012, which was originally introduced in 1993 to encourage the reinvestment of profits. During 2012, STC was charged at a rate of 10.0 per cent (SARS, 2019).

As an add-on to this section, corporate income tax (CIT) is briefly discussed as it directly impacts operation costs of companies, including companies providing saving products. During the political transition period, CIT rates were lowered significantly from 50.0 per cent in 1991 to 35.0 per cent in 1995. After that it was lowered even more and since 2009 it has remained at 28.0 per cent (see figure 3.5). This means that post-1994 there has been a significant shift in taxation policy away from CIT towards PIT (SARB, 2015a). More evidence of this is that in the 2016/17 fiscal year, PIT accounted for 37.5 per cent of government revenue, which is more than double the 16.9 per cent from CIT (National Treasury, 2017a).

3.5.3.6 Financial Advisory and Intermediaries Services Act, 37 of 2002

The Financial Advisory and Intermediaries Services (FAIS) Act establishes the core of market conduct regulation in the non-banking financial services industry. The Act aims to protect customers, to provide customers with adequate information so that they can make informed decisions, and to regulate the selling and advice-giving activities of financial advisors (Financial Services Board, 2017).

Botha et al. (2009:87) note that until the introduction of FAIS there was no legislation comprehensively regulating financial services providers (FSPs) and that the Act intended to properly regulate the profession by systemising and rationalising previously fragmented pieces of regulation related to certain activities. According to the FSB, the FAIS Act alone cannot guarantee consumer protection, so the Ombud for Financial Services Providers (“FAIS Ombud”) plays an integral role in providing consumer protection by acting as a “defender of the people”. The Office of the Ombud for FSP became mandated on 30 September 2004 to accept and deal with complaints (Financial Services Board, 2017).

Important regulation included in the Act is the so called “fit and proper”⁶⁰ requirements as well as the “codes of conduct” applicable to FSP, representatives and key individuals. Definitions for these are also provided in the Act. The FAIS General Code of Conduct has specific duties

⁶⁰ These include personal character qualities of honesty and integrity, operational ability, financial soundness, qualifications and experience requirements, continuous professional development (CPD), etc. (FSB, 2008).

that relate to authorised FSPs, and this includes the obligation to disclose specific information about the product supplier, the intermediary and the financial service (the product).

The Act allows for different categories of licenses that can be applied for, including:

- Category I: Financial services provider. Sub-categories for Category I include: long-term insurance, short-term insurance, retail pension benefits, pension fund benefits, health service benefits, long-term deposits, short-term deposits, friendly society benefits and forex investment business;
- Category II: Discretionary financial services provider (e.g. investment managers);
- Category IIA: Hedge fund financial services provider;
- Category III: Administrative financial services provider (e.g. linked investment services providers); and
- Category IV: Assistance business financial services provider.

(Botha et al., 2008; FSB, 2008).

Genesis Analytics (2008:91) makes the important observation that FAIS legislation may increase the cost of selling products to the low-income market, which could lead to a disincentive by intermediaries to serve this market segment. Alternatively, cost-limiting measures could lead to no advice being provided alongside products. This boils down to the overall value proposition for financial advice. What is imperative is that all individuals buying financial products should have access to at least some (basic) form of advice, and that there should be some regulation of the standard of advice provided.

3.5.3.7 National Credit Act 34 of 2005

The National Credit Act (NCA) establishes a National Credit Regulator (NCR) that is responsible for the regulation of the South African credit industry. The NCR is tasked with carrying out education, research, policy development, registration of industry participants, investigation of complaints, and ensuring enforcement of the Act. It aims to promote the development of an accessible credit market, and particularly to address the needs of historically disadvantaged persons, low-income persons, and remote, isolated or low-density communities. The NCR is also tasked with the registration of credit providers, credit bureaus and debt counsellors (National Credit Regulator, 2017).

In general, despite its good intentions, the Act received strong criticism for enabling “larger and longer-term unsecured loans”. During 2013, the sharp increase in unsecured lending

reached the point where it was labelled an “unsecured credit crisis”. This is also seen as a major contributing factor to the collapse of African Bank (Business Reports, 2017; Debt Busters, 2014).

Unfortunately, the situation continued to deteriorate and in the fourth quarter of 2016, there were 24.3 million credit active consumers in South Africa, of which 9.7 million (or 40.2 per cent) had an impaired⁶¹ credit record. A daunting fact is that during the same period, South Africa had 16.0 million formally employed workers, which means that credit customers outnumbered the formally employed by around 8.0 million individuals who most probably make a living in the informal sector. Although (secured) credit items, like mortgage advances, account for the bulk of credit in terms of value, unsecured (micro) loans far outnumbered other credit items (Business Day, 2017b; StatsSA, 2016).

Given the big overhaul in place related to regulation in the financial sector, it remains unclear why the NCA falls outside the ambit of the twin peaks model. Further confusing is why the NCR resides as one of the agencies overlooked by the Department of Trade and Industry (DTI), as it makes more sense that the NCR should report to an institution such as the National Treasury or the SARB.

Section 3.6 looks at incentives to promote saving in South Africa.

3.6 Saving incentives

The aim of this section is to identify incentives to promote saving in South Africa. Section 3.6.1 looks at government (public sector) incentives, followed by private sector initiatives in section 3.6.2.

3.6.1 Saving incentives: public sector

Three voluntary public saving incentives are identified, namely RSA Retail Saving Bonds, tax-free saving accounts (TFSA) and Fundisa, which is an incentive aimed at tertiary education funding. The three incentives are briefly discussed and are summarised in table 3.6.

⁶¹ An impaired credit record is when a debtor is three or more months in arrears on an account, if the debtor is under administration, or if there are judgements against a debtor (Business Day, 2017b).

Table 3.6: Public incentives for voluntary saving in South Africa

Incentive	Product/Structure	Purpose	Contributions	Growth/Earnings	Accessibility/Withdrawals
RSA Retail Savings Bonds	Government bonds, two options with pre-determined rates	Saving in general	After-tax income	Taxed (normal interest exemptions, as per IT Act apply)	Fixed for at least 12 ⁶² months
Tax-free savings accounts	Various	Saving in general	After-tax income	Linked to products; tax exempt up to a certain threshold	Flexible ⁶³
Fundisa	Money-market unit trust	Saving for tertiary education	After-tax income, co-contributions capped	N/A	Lose bonus payment if not used for educational purpose

Source: National Treasury, 2012a:15; RSA Retail Savings Bonds, 2017; compiled by author.

3.6.1.1 RSA Retail Savings Bonds

RSA Retail Savings Bonds were introduced by the National Treasury in 2004, with the aim to encourage households to start saving without necessarily having to make use of financial intermediaries. Retail bonds offer guaranteed returns and can be bought for as little as R1,000 from various outlets, including any branch of the South African Post Office, the RSA Retail Savings Bonds website or the National Treasury. It carries no commission, agency or service fees. It is available to all RSA citizens and permanent residents with a valid ID number and RSA bank account and is backed by the government.

There are two options available, namely a fixed interest and an inflation linked option. Current yields for the fixed option ranges between 8.25 (2 year) and 8.75 (5 year) per cent per year, while the current inflation linked rates available are from 1.75 per cent (3 years) to 2.25 per cent (10 years). It has attracted R9,1 billion of investment as at 30 June 2014, of which around 55.0 per cent has been taken up by female investors (Republic of South Africa, 2014:6; RSA

⁶² Certain exceptions do apply: “(i)investors may be allowed to withdraw a portion of (provided that the capital balance does not fall below R1,000), or the entire investment, within the first 12 months of the settlement date, only on the grounds of extraordinary changes in personal circumstances ...The National Treasury reserves the right to grant or refuse the request. Should the request be granted, the penalty for withdrawal prior to the expiry of 12 months from the settlement date shall be a total forfeiture of all interest received on such withdrawal, which amount shall be set-off against that portion of the amount being withdrawn” (RSA Retail Savings Bonds, 2017).

⁶³ Usually no penalties apply for withdrawing from a TFSA. However, once the R33,000 limit has been reached, any amount withdrawn cannot be put back into the account during the same year. That is an incentive for long-term investing.

Retail Savings Bonds, 2017). Retailers support this incentive; for example, it can be purchased at any PicknPay till (given that customers have registered) (PicknPay, 2017).

3.6.1.2 Tax-free savings accounts

Tax-free savings accounts were officially introduced in the 2015 National Budget and were made available to the public during March 2015 (Republic of South Africa, 2015:24). These are products on which no income tax, capital gains tax or dividend withholdings taxes are levied. Most unit trusts, exchange traded funds (ETF), savings accounts, fixed deposits and RSA Retail Savings Bonds meet the requirements to be classified as a TFSA (National Treasury, 2014a:3-4). In essence taxation laws are used to make existing financial products more appealing to individuals (also see Business Day, 2015; Mail&Guardian, 2015; Moneyweb, 2015).

The National Treasury (2012a:3) notes that these are products aimed at “encouraging discretionary non-retirement saving” by households within the “low-to-moderate levels of taxable income”. However, given that only a small part of the population is liable for PIT, this means that it is aimed at medium to high income individuals. No initial fees, exit penalties or administration fees apply, the funds do not have to comply with Regulation 28, and these accounts can be opened on behalf of minor children.

As far as limitations of TFSA are concerned, a regular income cannot be paid out of the investments, and interest and dividends earned are automatically re-invested. Contributions are restricted to a maximum of R33,000 per annum or R500,000 over an investor’s lifetime. In general, a long-term (15 years plus) horizon is recommended to fully realise the benefits of the compounding tax-free returns (Coronation, 2017; National Treasury, 2017a).

3.6.1.3 Fundisa

Fundisa is an incentive that allows investors to save money for the tertiary education of any South African child from a low-income household. In 2007 government and members of the Association for Savings and Investment South Africa (ASISA) launched a three-year pilot project to assess whether there was market demand for a product aimed at saving for higher education. Following the success of the pilot project, the second phase was launched during March 2013. The stakeholders include the Department of Higher Education and Training, the National Student Financial Aid Scheme (NSFAS) and ASISA.

A means test, which is a household income of less than R180,000 per annum, applies. However, high income earners are encouraged to invest on behalf of low-income families and therefore the means test does not apply to sponsors. The incentive works as a bonus⁶⁴ co-contribution, which can be as much as 25.0 per cent (one-quarter) of the money saved each year, to a maximum of R600 per child. These savings are to be used at a NSFAS accredited public Further Education and Training (FET) college or university; in order to benefit fully, the money may be used only for tertiary educational purposes (Fundisa, 2017).

In relation to Fundisa, Genesis Analytics (2008:100) pronounces that this type of innovation needs to be encouraged, and possibly also extended to items such as housing or retirement saving. However, they note that more research is needed, especially related to aspects such as its compatibility, the possibility of subsidies, as well as likely impacts on saving.

3.6.2 Saving incentives: private sector

South Africans are spoiled for choice when it comes to the “run of the mill” saving options as offered by various financial institutions and banks. Below are a few examples of some exceptional innovative products.

3.6.2.1 Prize-linked saving plans (Million-a-Month account)

The Million-a-Month account was launched in January 2005 by First National Bank (FNB) and was based on a minimum opening deposit and balance of R100, which allowed the holder entry to a randomly drawn prize. Each R100 represented one entry and balances were rounded down (for example R170 became one entry). Monthly draw prizes were guaranteed, but the amounts were subject to change at the bank’s discretion. This was funded via the nominal interest rates paid on the accounts, part of which were pooled, and then paid out as prizes. These included around 100 monthly prizes, ranging from R1,000 to R1,0 million.

There were no limits on the deposit amounts, given that individuals complied with FICA regulation (if not FICA compliant, deposits were limited to R25,000). The accounts were run on the basis of a 32-day notice deposit, meaning that people could access their funds after a notice period of 32 days (First National Bank, 2008).

⁶⁴ For example, by saving R100 a month for a year (R1,200 a year), the investor will receive a R300 bonus.

The concept of the prize-linked saving plan relates to “no-lose lotteries”, which combines “the excitement of a lottery” with the “safety of a savings account”. The aim is to encourage people to save money rather than to spend it on lottery tickets, where the expected pay-outs are typically very low (Freakonomics, 2010).

Similar instruments have been marketed in South Africa before, including so called “Bonus Bonds”. These saving bonds were issued by the National Treasury to help finance South Africa’s military related expenditure during the 1970s and 1980s. In this case, the underlying instruments were government bonds.

The project by FNB was an undeniable success with an estimated 750 000 accounts opened and R1,2 billion collected in deposits. Important is that 20.0 per cent of the people who opened these accounts had never engaged a bank before. Nevertheless, despite having cleared the accounts with various regulating bodies (including the Gambling and National Lotteries boards) beforehand, the lotteries board ultimately approach the courts to have the offering declared unlawful on the ground that it contravened the National Lotteries Act (Daily Maverick, 2012). FNB had to close its offering during the beginning of 2008 with the last accounts automatically transferred to 32-Day Interest Plus Notice accounts during May 2008.

Nevertheless, the success of the prize-linked saving plan provides insight into consumer behaviour and preferences. As various banks offer 32-day deposit options it is clear that the (relative) minimal interest earned on these do little to encourage saving (especially among low-income or unbanked individuals). But the notion of a no risk, (possible) great reward scenario, provided the required incentive.

3.6.2.2 Savings stamps offered by retailers

Retailers in South Africa provide a wide variety of financial services and products to their customers, but most of these are related to credit, insurance and transactional banking services. As far as saving products are concerned, only savings stamps⁶⁵ could be identified. Customers can purchase savings stamps in relatively small denominations (e.g. R10). The stamps are collected in a savings book, which the customer can redeem for the cash value of the stamps at any time (Finmark, 2014). However, only two retailers offering this product could be identified (these include retailers Shoprite Checkers and PicknPay). These products also retain a short-

⁶⁵ Finmark (2014) also lists lay-byes (where the retailer holds onto the goods until the consumer has paid it off over a predetermined period) as savings products. However, this seems more a consumption motivated activity than a saving activity.

term and largely consumption driven focus, making them unsuitable for long-term saving purposes.

3.6.2.3 Exchange traded funds

Technological advancement in general has opened up various new savings options. ETFs or tracker funds are listed investment products that track the performance of a group or "basket" of shares, bonds or commodities. These "baskets" are known as indices. These funds are seen as passive investments, which means that there is no active management (stock picking by exercising investment judgement) involved in selecting the underlying shares as the fund simply tracks the performance of a specified market index. It is an uncomplicated and cost effective way for individuals to get exposure to various asset classes and sectors (JSE, 2017; Satrix Managers, 2017).

Examples of companies where individuals can open an account and purchase ETFs in South Africa include EtfSA (2017) and Satrix Managers (2017), who notes that "tracker fund does not have to incur the high costs associated with research to perform active management and therefore can provide market returns at a lower cost".

Although the minimum investment amounts (R10,000 lump sum or R500 per month) seem very reasonable, within the South African context these products are most likely out of reach for most low-income individuals and more targeted at mid to high income earners. It also involves a high degree of risk as investment performance is directly linked to market movements.

3.6.2.4 Loyalty and rewards programmes

Various banks and financial product suppliers have introduced some form of loyalty or rewards programme for their clients (selected examples include FNB's eBucks rewards, Absa Rewards, Nedbank's Greenback Rewards and Standard Bank's UCount). Unfortunately these are primarily geared at rewarding customers for spending rather than saving.

The insurance industry has come up with some creative incentives. OUTbonus (by OUTsurance) is a cash bonus that rewards clients for not claiming. Similarly, Discovery provides PayBack benefits to their life insurance clients, based on medical claims and their health and wellness status. Discovery Invest further utilises clients' status to provide certain benefits to their retirement savings.

Having looked at the formal side of the market, the next section looks at informal saving schemes in South Africa.

3.7 Stokvels

Stokvels form part of what is globally referred to as saving “clubs” or “self-help groups” (SHGs), where members are supposed to help other members of their group to reach their savings goals. In Africa these groups are often referred to as Rotating Credit and Savings Associations (ROCSAs) – also known as “merry-go-rounds” or *tontines* in francophone countries. ROCSA members meet at regular intervals where each member is required to deposit a similar amount of money into a common kitty. Each time, on a rotating basis, one member gets to take home the whole amount (lump sum of members’ contributions). Trust between members is absolutely essential.

The advantages of ROCSAs over traditional saving accounts are that they don’t have fees, small deposits can be made, on average the member gets access to a lump sum of money faster than if small amounts were deposited over time, and the group is seen as a good place to ask for advice (financial or general) (Banerjee & Duflo, 2011:186-7).

The term, Stokvel, originated from the early 19th century when settlers in the Eastern Cape held rotating cattle auctions (“stock fairs”). The indigenous people, who also pooled resources to trade livestock, knew this as stokvels. Today the term is used overarching for informal community-based saving clubs. The National Stokvel Association of South Africa (Nasasa) (2017) was established in 1988 as a self-regulating body. The association estimates that the total number of stokvels, burial societies and credit associations are 810 000 in South Africa, with more than 11.5 million members. The value of savings in the sector is gauged at between R25,0 and R44,0 billion (Republic of South Africa, 2014:6). Table 3.7 provides a list of the various types of stokvels available.

Despite the large estimated number of stokvels, only 110 000 (or around 13.5 per cent) of stokvel groups are registered with Nasasa (Today’s Trustee⁶⁶, 2017; World Bank, 2011:30). Regulation regarding stokvels remains elusive and confusing. The Banks Act (1990), for example, was amended in 2006 to specifically exclude stokvels from the “meaning of the business of a bank” (SARB, 2006 and 2012), yet most retail banks today have a customised

⁶⁶ The author of the article, Andile Mazwai, is CEO of Nasasa.

stokvel account (see for example First National Bank, 2017). Similarly, in 2013 stokvels and burial societies were explicitly excluded from the Financial Advisory and Intermediary Service Act (37 of 2002) (Financial Services Board, 2013).

Table 3.7: List of stokvels

<p>Contributions stokvel: members contribute a fixed amount weekly, fortnightly, or monthly, with the pooled amount allocated on a rotational basis.</p> <p>Basic stokvel: covers specific events such as funeral assistance and Christmas.</p> <p>Purchasing stokvel: members contribute over a fixed term, at the end of which they purchase big-ticket items.</p> <p>Grocery stokvel: used to buy durable grocery items in bulk, thus taking advantage of economies of scale otherwise not possible for individuals.</p> <p>Investment groups: contributions are used for investment, and dividends are either shared or re-invested.</p> <p>Family stokvel: family members pool funds in a formal bank account to buy expensive items.</p> <p>Burial societies or <i>makgotlas</i>: used specifically for funerals, though these are not strictly stokvels. Some assist in acquiring and preparing food, and some cover the full cost of the funeral.</p>
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Source: World Bank 2011:30

Ardington, Lam, Leibbrandt, and Levinsohn (2004:633) seem reserved about the ability of what they call “traditional options” such as stokvels, to open up access to formal financial services to the poor. They see stokvels as a “complement rather than a substitute” to other formal financial services products.

Despite this, stokvels form an important informal financial saving product in South Africa and should receive more attention in research (see sections 6.2 and 6.3 that provide empirical evidence to support this notion).

The last section of this chapter briefly deviates from the main topic of this study to provide an overview of social assistance payments by the South African government. Despite being a pillar zero arrangement (and thus technically excluded from the focus area of this study), it provides vital insight into the financial realities facing a vast number of poor households in South Africa.

3.8 Social assistance

Social assistance payments play a critical role in South Africa as they provide the bulk of income to a significant number of South African households. In 2018, a total of 17.5 million beneficiaries (equal to 30.3 per cent of the population⁶⁷) received some form of grant from the state. Most grants were paid in relation to child support (12.4 million), old age allowance (3.5 million) and disability grants (1.0 million). These numbers are expected to grow on average by 1.7 per cent over the next three years, which means the total number of grant recipients will reach 18.2 million by 2021 (National Treasury, 2018c:62).

The grants amount to R162,9 billion (in 2018) with most funds being allocated for old age allowance (R70,5 billion), child support (R60,6 million) and disability grants (R22,1 billion).

In 2018, the average monthly social grant values were set at R1,695 for both the old age and disability grants, while the child support grant was R405 (National Treasury, 2018c:62). These values are adjusted annually to keep up with inflation. The upper-bound poverty line⁶⁸ for 2018 was estimated to be R1,183 per person per month (StatsSA, 2018c:3). Therefore, both the old age and disability grants were above this measure. However, the value of the child support grant falls well below the upper poverty line, and is also lower than the food poverty line⁶⁹. This implies that for instances where the child support grant is the only source of household income, individuals will struggle to buy even the bare necessities.

It is acknowledge that, although some of these grants fall short of the poverty mark, the payments are a vital income source for a large number of households and that the state at least provides a minimum income for these households. The detailed analysis of the impact of social grants on household income in South Africa falls beyond the scope of this study. Poverty lines are, however, again used as part of the analysis following in chapter 6.

⁶⁷ South Africa's estimated population in 2018 was 57.7 million (StatsSA, 2018b).

⁶⁸ The upper-bound poverty line is defined as "the food poverty line plus the average amount derived from non-food items of households whose food expenditure is equal to the food poverty line" (StatsSA, 2018c:3)

⁶⁹ The food poverty line (or "extreme" poverty line) refers to "the amount of money that an individual will need to afford the minimum required daily energy intake. It was estimated to be R547 per month in 2018 (StatsSA, 2018c:3).

3.9 Conclusion

The historic perspective sketched in this chapter indicates that South Africa's first democratic election in 1994 is certainly one of the most significant events experienced by this country that helped to inter alia shape the modern day financial landscape of the country. Before this date, South Africa had a volatile political and economic history and today still has an extremely heterogeneous population with significant financial inequalities.

In order to put the "New South Africa" on an elevated growth path, various development plans were implemented after 1994, with some of these (notably the GEAR and ASGISA), apparently achieving more success than others. The GFC brought a sudden halt to the strong growth that South Africa experienced during the years leading up to the crisis. This event brought with it an almost structural break in South Africa's growth performance, as economic growth remained low or subdued during the aftermath. All the blame can, however, not be placed on the GFC as rampant corruption and state capture also played an important role. Development plans implemented after the crisis were also unable to provide a roadmap for sustainable economic recovery. The high frequency of economic plans (roughly one every four years) can also be questioned.

Saving features prominently in these plans. The National Development Plan (2013), for example, set the optimistic target of ramping up gross national saving to 25.0 per cent of GDP by 2030. However, this study finds a decline in gross national saving from 18.0 per cent in 2010 to below 15.0 per cent in 2012. Although it improved marginally to 16.2 per cent by 2017, the analysis shows that the NDP's target is unlikely to materialise. Further analysis indicates that the corporate sector was, and remains the only strong saving sector, while government and household saving rates have been dismal since 1994 (household saving receives more attention in chapter 4).

Broadly applying the World Bank's (2005) general pension design to South Africa shows that the country caters for all the pillars, except a mandatory contribution publicly managed (pillar 1) arrangement. Despite this being the case, research indicates dismal participation in occupation pension funds (typical pillar 2 arrangements) among low-income households. There are also few private and voluntary long-term retirement savings products that are well suited to meet the needs of low-income individuals. These raise serious questions about the

adequateness and affordability of the pension system in South Africa. Ample evidence of voluntary saving (pillars 3 and 4) is provided in later chapters of this study.

The state has for some time now been investigating the establishment of a possible mandatory contribution publicly managed scheme to cover the gaps in existing pension provision, especially among low-income workers. Nevertheless, given the vast number of uncertainties and possible affected persons and institutions, it seems unlikely that such an arrangement will materialise any time soon.

South Africa's financial sector is relatively well regulated, and also recently underwent a major regulatory overhaul as it shifted towards the twin peaks model. This means that in future two major regulatory bodies will exist, with the Prudential Authority looking at the health of financial institutions, while the Financial Sector Conduct Authority is tasked with market conduct. However, more work may need to be done as there is evidence of informal (or unregulated) financial products that are widely used. Stokvels is one prominent example of such an informal financial (or saving) instrument.

Various public and private saving incentives were identified, indicating that saving is seen as a priority by both these sectors. However, it seems as if more can be done to incentivise especially low-income households who, for example, benefit little, if at all, from incentives related to taxation.

Lastly, a brief overview of the social assistance payments by the state indicates that roughly 3.5 million South Africans received some form of social pension allowance (or pillar 0 arrangement) in 2018.

In chapter 4, the focus is on quantifying aggregate household saving, using the SNA. The important link between household saving and wealth is also established and analysed.

Chapter Four: Household saving as measured by the South African System of National Accounts⁷⁰

4.1 Introduction

This chapter analyses household saving from a macroeconomic perspective by using South Africa's national accounts. Both the flow and stock measurements are analysed, as well as the link between the two. The flow concept relates to an income statement approach where saving is calculated as the part of income that is not consumed. The stock concept relates to savings that have been built up over time, defined as the value of all assets net of all debts.

The rest of the chapter reads as follows: section 4.2 provides an overview of the SNA. This is followed by a detailed description of the definitions and measurements of South African household saving from both the flow (section 4.3) and stock (section 4.4) perspectives. The theoretical link between the two measures is provided in section 4.5. Section 4.6 provides additional information obtained from the National Financial (flow-of-funds) Account. Conclusions are provided in section 4.7.

4.2 The System of National Accounts

Similar to the extent to which organisations are required to record their business activities according to a set of generally accepted accounting principles⁷¹ so too was a system developed to enable countries to record their macroeconomic activity according to a standard international accepted statistical framework. According to the UN's website, the SNA is defined as:

⁷⁰ An earlier draft of this chapter was presented to the South African Reserve Bank, during a meeting on 26 July 2017. Feedback from this meeting has been incorporated into the study for which the author is greatly thankful. Noteworthy (and to serve as a caution when interpreting the data) is that the SARB confirmed that they are in the process of a significant methodological overhaul for various sectors of the economy (including households). Once finalised, one should be able to close the "elusive" link between the various accounts, for example, household saving measurements as observed in the production, distribution and accumulation accounts, the household balance sheet and the National Financial Account. The SARB confirmed that the analysis in this chapter is based on the most relevant data and methodology publicly available at the time of the study.

⁷¹ In South Africa, these statements of Generally Accepted Accounting Principles (GAAP) are based on the relevant International Financial Reporting Standards (IFRS), as approved by the Accounting Practices Board (APB) (SAICA, 2019).

(a) statistical framework that provides a comprehensive, consistent and flexible set of macroeconomic accounts for policymaking, analysis and research purposes.

The SNA is a joint project produced and released under the auspices of the United Nations, the European Commission, the OECD, the International Monetary Fund and the World Bank Group (United Nations, 2009: iii).

For most countries, this official framework for reporting on economic activity began during or post-World War II, for example, the first official national accounts for the United States were published in 1942 (Mohr, 1998:17). South African national accounts data is available from 1946 and the latest version of the accounts is the 2008 SNA, which replaced the 1993 version (SARB, 2015b). The full set of national accounts includes various items such as the National Income and Production Accounts (NIPA), input-output tables, the National Financial Account (NFA), national balance sheets and the BoP. The responsibility for compiling these accounts is divided between Statistics South Africa (production and income side) and the SARB (expenditure side, as well as institutional sector accounts, balance sheets and accumulation accounts) (Orthofer, 2015:16).

In defining the household sector in South Africa, it is important to note that not only private households are included in the SNA, but also unincorporated business enterprises of households, non-profit institutions serving households (NPISHs), as well as private trusts and friendly societies. The justification for including unincorporated businesses is due to the unlimited liability of owners, which means that household assets are at risk in the case of bankruptcy. NPISH, private trusts and friendly societies are included because their boundaries to private households are not always clear (Orthofer, 2015:11).

There is a possibility that in future the SARB will exclude all, or at least some, of these four mentioned additional items, thus focusing on households only. Such an approach is welcomed as various items currently include (e.g. depreciation or rent on subsoil assets), are linked to the related enterprises and institutions, which creates confusion. Despite these objections these items are still included in this study.

4.3 The income statement approach

4.3.1 Overview

The flow measure of household saving relates to the concept that saving is the part of income that is not consumed, described as “abstinence” or “postponed consumption” in the literature (see section 2.1). In accounting terms it is seen as a flow measure typically found in the income statement of entities. The example often used to describe the term relates to changes in the water level of a dam, where the flow of water in and out of a dam is measured over a specific period of time, expressed as a rate. The flow concept has dominated the saving literature in most countries post-World War II, mostly due to data availability.

From a theoretical perspective, saving of the household sector, in its most basic form, is represented by:

$$S = Y - C \quad \text{Equation 4.1}$$

Where:

S : Household saving (*gross saving*)

Y : Household disposable income⁷²

C : Household consumption expenditure

(Hodgetts, et al., 2006:9).

However, an adjustment is also made for the consumption of fixed capital (CFK, depreciation of the household sector’s capital stock; or housing stock). This can be seen as the amount that households need to invest annually to maintain the housing stocks’ productivity. From here, net saving (S_N) can be calculated as follows:

$$S_N = Y - C - CFK \quad \text{Equation 4.2}$$

Where CFK is the depreciation in the housing stock⁷³.

⁷² Also referred to as ‘total available household’s resources’, see SARB, 2016: S-132, KBP6847.

⁷³ Also referred to as “consumption of fixed capital at replacement value”, see SARB, 2016:S-132, KBP6849.

Household saving is recorded in the production, distribution and accumulation accounts for households and NPISHs (see table 4.1). It includes six accounts, namely the production account, generation of income account, allocation of primary income account, secondary distribution of income account, use of disposable income account and a capital account⁷⁴. The first five of these accounts are discussed next, as they provide the calculation of gross (and net) saving of households.

The production account shows the net output of production where production is defined as an activity that “uses inputs of labour, capital, and goods and services to produce outputs of goods and services” (United Nations, 2009:95). An example is subsistence agriculture or other agricultural production, part of which is used by the household itself (intermediate production). As this is often part of the informal sector it provides various measurement challenges (United Nations, 2009:466). Output less intermediate consumption is stated as *gross value added at basic prices* (see table 4.1).

⁷⁴ The capital account looks at the changes in assets held by households, specifically the “values of non-financial assets that are acquired, or disposed of” (United Nations, 2009:195). Although important to calculate net lending/borrowing at an institutional level, it provides little additional insight into the income statement method of calculating saving, and is thus excluded. However, the concept of valuation adjustments of assets receives more attention in section 4.5.

Table 4.1: Production, distribution and accumulation accounts of South African households⁷⁵, 2017 (R millions)

Account	Categories	Code	2017
		KBP	
<i>Production account</i>	Output at basic prices	6820	R 1,321,321
	Less: Intermediate consumption	6821	R 535,521
	Gross value added at basic prices	6822	R 785,800
<i>Generation of income account</i>	Less: Compensation of employees	6823	R 164,030
	Less: Other taxes on production	6824	R 32,319
	Other subsidies on production	6825	R 355
	Gross operating surplus	6826	R 589,806
<i>Allocation of primary income account</i>	Compensation of employees	6240	R 2,217,709
	Property income received	6827	R 470,907
	<i>Interest</i>	6828	R 89,247
	<i>Dividends</i>	6829	R 147,332
	<i>Property income attributed to insurance policies</i>	6830	R 233,865
	<i>Rent on land and subsoil assets</i>	6831	R 463
	Less: Property income paid	6832	R 216,785
	<i>Interest</i>	6833	R 213,449
	<i>Rent on land and subsoil assets</i>	6834	R 3,336
	Gross balance of primary income	6835	R 3,061,637
<i>Secondary distribution of income account</i>	Social benefits received	6836	R 399,339
	Other current transfers received	6837	R 239,474
	<i>Non-life insurance claims</i>	6838	R 180,380
	<i>Miscellaneous current transfers</i>	6839	R 59,094
	Less: Current taxes on income and wealth	6845	R 465,800
	Less: Social contributions paid	6840	R 263,564
	Less: Other current transfers paid	6841	R 192,389
	<i>Net non-life insurance premiums</i>	6842	R 180,380
	<i>Miscellaneous current transfers</i>	6843	R 12,009
Gross disposable income	6844	R 2,778,697	
<i>Use of disposable income account</i>	Adjustment for the change in net equity of households in pension funds reserves	6845	R 57,034
	Less: Residual	6846	-R 3,978
	Total available household resources	6847	R 2,839,709
	Less: Final consumption expenditure	6007	R 2,764,397
	Gross saving	6848	R 75,312
	Less: Consumption of fixed capital	6849	R 66,607
	Net saving	6200	R 8,705

Source: SARB; compiled by author

The generation of income accounts is merely an extension of the production account as more production costs and subsidies are taken into consideration. It sees households in their capacity as producers, whose activities generate primary incomes (United Nations, 2009:131). The costs

⁷⁵ Households and non-profit institutions serving households.

include labour costs (compensation of employees⁷⁶) and taxes on production. This gives the *gross operating surplus* of household production. In 2017, the *gross operating surplus* contributed 21.2 per cent to the *gross disposable income* of households. Taken as a size of the economy, it remained very stable over time, equalling an average of 13.3 per cent of GDP from 2005 to 2017 (see figure 4.1).

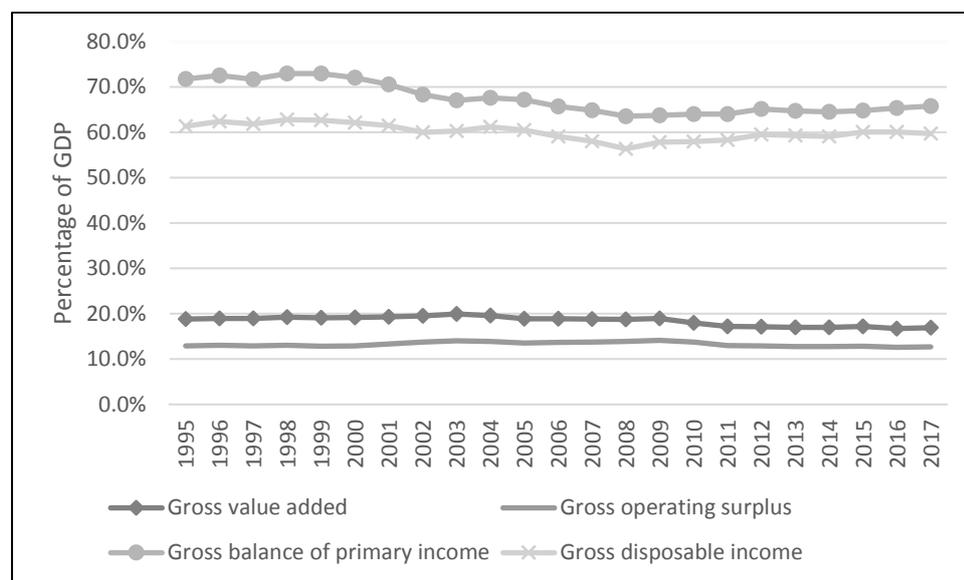


Figure 4.1: Value added, operating surplus, balance of primary income and disposable income of households in South Africa, 1995 to 2017

Source: SARB; compiled by author

In the allocation of primary income account the focus shifts from households as producers, to their capacity as recipients of primary incomes. Included in this account is the most prominent source of household income, namely the compensation of employees. The account also includes property income received and paid. Compensation of employees equalled 79.8 per cent of gross disposable income of households in 2017. Compared over time to the size of the economy, compensation of employees dropped from just below 50.0 per cent in 1998 to 43.5 per cent in 2002. It remained at, or close to this level until 2007, after which it started to recover markedly. By 2017, it had reached 47.7 per cent of GDP (see figure 4.2). Reasons for the recovery remain unsure, but it is likely linked to general above inflation salary adjustments, especially to individuals employed in the public sector during this period.

Property income received reached a high of 18.2 per cent of GDP in 1998. It declined afterwards with a noticeable drop of 4.0 percentage points from 2008 to 2010, linked to the

⁷⁶ This item relates to the compensation of employees by unincorporated enterprises owned by households (United Nations, 2009:131). It should not be confused with the compensation of employees' item, recorded in the primary income account.

economic recession experienced in the South African economy during this period, which was caused by the GFC. This also narrowed the gap between property income received and paid, thus placing pressure on household income. Property income received remained at the new lower level and measured 10.1 per cent of GDP in 2017 (see figure 4.2).



Figure 4.2: Allocation of primary income account: compensation of employees, property income received and property income paid, 1995 to 2017

Source: SARB; compiled by author

The secondary distribution of income account deals with current transfers or instances where income is received, without any goods exchanging hands nor services rendered (United Nations, 2009:157). This clearly differs from the primary income account in which actual goods or services are provided by households in exchange for compensation. Prominent items in this account include social assistance payments as well as taxes on income and wealth.

Social benefits received include current transfers to households by government. This item equalled 14.4 per cent of gross disposable income in 2017. Compared to the size of the economy, social benefits received rose sharply from 6.8 per cent of GDP in 2005 to 9.8 per cent in 2015 (see figure 4.3). Important is that although social assistance payments⁷⁷ (discussed in section 3.8) are included here, social benefits received are defined as a much broader concept, which also include, for example, payments due in respect of sickness, unemployment, housing, education or family circumstances (United Nations, 2009:172).

Also evident from this account is the impact of taxes on income and wealth, measuring 16.7 per cent of gross disposable income during 2017. Looking at the trend over time, it rose from

⁷⁷ Social assistance payments rose from around 2,5 per cent of GDP in 2005 to 3,0 per cent in 2015.

7.6 per cent of GDP in 2005 to 10.0 per cent in 2017. Again, as indicated in chapter 3, PIT has been contributing a relative larger share of total government revenue over time. Also noteworthy is the increase in the marginal rate of PIT to 41.0 per cent in 2016 and 45.0 per cent in 2017, no doubt contributing to the sustained upward trend observed in the analysis.

Social contributions paid should not be seen as the counterpart of social benefits received, and are defined as “actual or imputed payments to social insurance schemes”, which also include voluntary contributions or those made by employers on behalf of their employees (United Nations, 2009:158). This item measured 9.5 per cent of gross disposable income in 2017. Compared over time this item has been shrinking in importance as, with the exception of 2007, it dropped from 6.7 per cent in 2005 to 5.7 per cent in 2017.

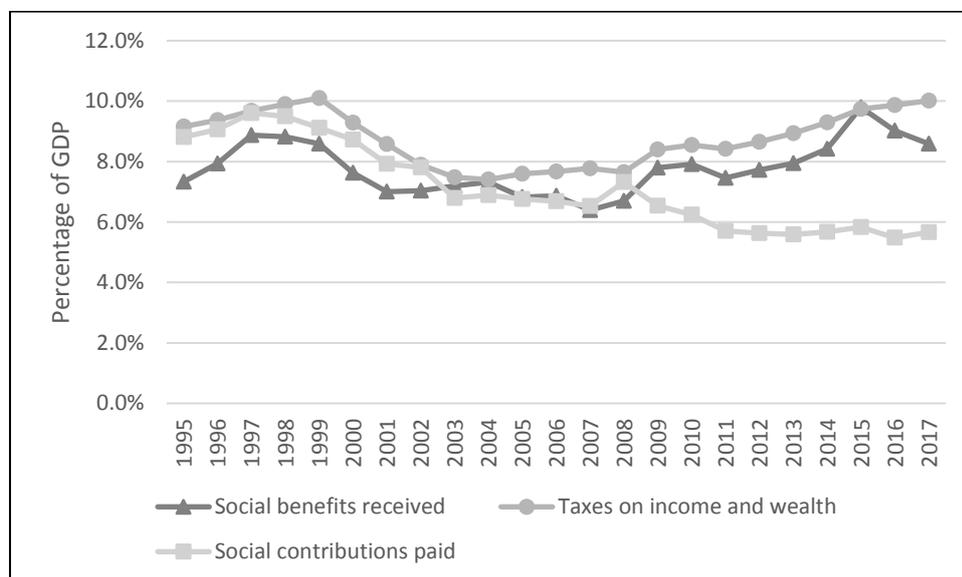


Figure 4.3: Secondary distribution of income account: social benefits received, social benefits paid and taxes on income and wealth, 1995 to 2017

Source: SARB; compiled by author

After taking into consideration the movements of the secondary distribution of income account, one arrives at the *gross disposable income* of households. Looking at *gross disposable income* over time, it trended down from above 60.0 per cent of GDP in 2005 to 56.4 per cent of GDP in 2008. Thereafter it improves again to 59.7 per cent of GDP in 2017 (see figure 4.4).

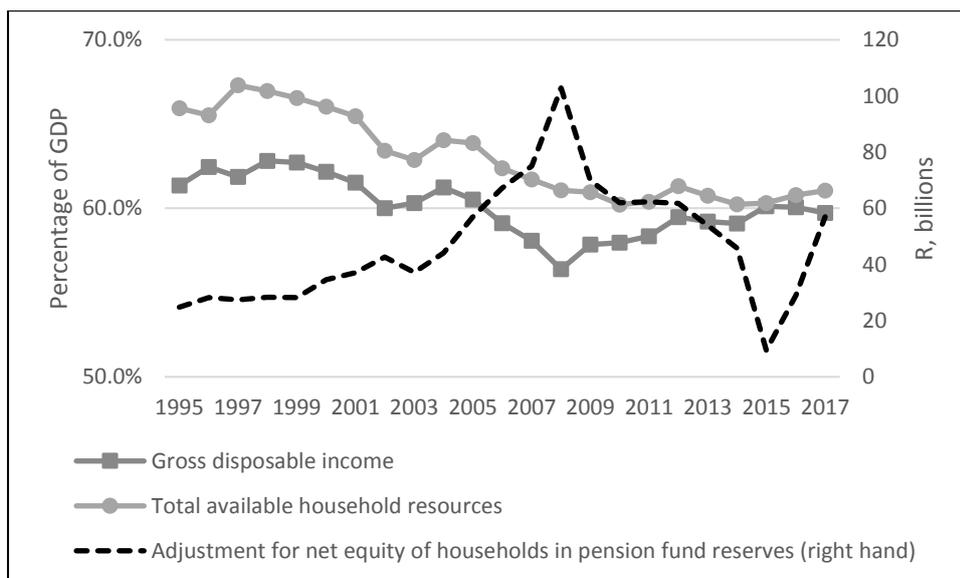


Figure 4.4: Gross disposable income and total available household resources, 1995 to 2017
 Source: SARB; compiled by author

It may be necessary to interrupt the discussion to focus on the effect that changes in income could have on saving in South Africa (note the theoretical and empirical links between these as provided in sections 2.3.2 and 2.9). The World Bank (2011:27-28) refers to this effect as the “income channel of saving” and notes that the size of the impact depends on the level of a country’s development and whether economic agents view movements in income of a transitory nature or regard it as a permanent change. In its analysis, the World Bank concluded that the role of household income growth was insufficient (“it did not play as a major role, as it could have”) to support household saving in South Africa. This is supported by the fact that, despite the marginal improvement between 2008 and 2015, when compared to the size of the economy, households’ gross disposable income in South Africa between 1995 and 2017 actually decreased.

Returning to the analysis of the production, distribution and accumulation accounts for households, the focus in the account shifts next from the allocation and distribution of household income, to its uses. This is captured in the use of disposable income of households’ account. The purpose of this account is to show how households allocate their disposable income between final consumption expenditure and saving (United Nations, 2009:179).

Two further adjustments need to be made to gross disposable income, namely for pension provisions and a *residual*⁷⁸. The *adjustment for the change in the net equity of households in*

⁷⁸ The *residual* represents the statistical discrepancy between the expenditure components of GDP (SARB, 2016). It remained small throughout the analysis period and seems to cancel out to almost zero over time. It is therefore not discussed in any further detail.

pension fund reserves is relatively small, and declined from around 4.4 per cent of GDP in 1995 to 1.2 per cent in 2017. From a rand value perspective, an interesting “inverted V” shape is evident as it rose from R28,5 billion in 1995 to more than R100,0 billion in 2008 and then fell back to only R9,5 billion in 2015 (see figure 4.4). This item was most likely influenced by the respective strong bull and bear markets experienced before and after the GFC, in both global and the South African equity markets. It recovered to R57,0 billion in 2017.

After taking into consideration the two adjustments, a value for the *total available household resources* can be calculated. This measure has been trending downwards from 63.9 per cent of GDP in 2005 to 60.3 per cent in 2015. The decline in the *adjustment for the change in the net equity of households in pension fund reserves* caused the gap between *gross disposable income* of households and *total available household resources* to shrink, to the point where in 2015 they were almost equal, but it did again open up slightly during 2016 and 2017.

The next important line item of the use of disposable income account is *final consumption expenditure of households*. Compared to the size of the economy, *final consumption expenditure* declined from 62.7 per cent of GDP in 1995 to 59.4 per cent in 2017 (see figure 4.5).

Taking a brief detour to compare the movements in consumption expenditure to that of household resources, indicates that both these items trended downwards, relative to GDP; however, disposable income of households decreased at a faster pace. This means that the financial buffer (or gap) that existed during the 1990s and early 2000s, was wiped out by 2006. Possible reasons for the buffer being wiped out can be gained from the BANKSERV Disposable Salary Index (BDSI), which mentions that although gross salary increases in general have been above the rate of inflation since the early 2000s, expenditure pressures were also severe, especially those related to income tax, medical aid and Unemployment Insurance Fund (UIF) contributions (Bankserv Africa, 2016).

Thereafter the gap did manage to open up again somewhat during 2008 to 2010 and again towards the end of the analysis period in 2016 and 2017. However, the size of the gap remains less than half the size it was during the late 1990s (see figure 4.5).

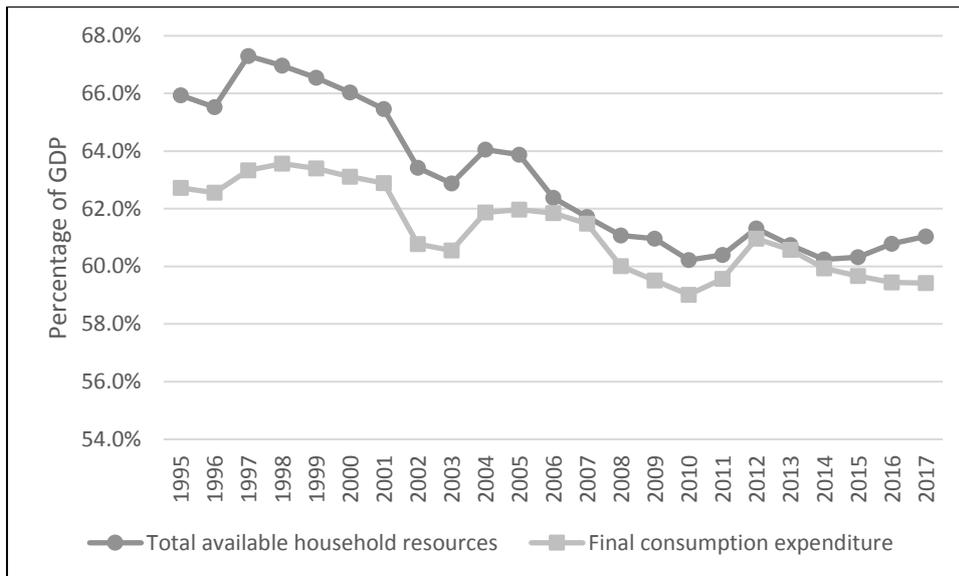


Figure 4.5: Total available household resources and final consumption expenditure by households, 1995 to 2017

Source: SARB; compiled by author

To return to *final consumption expenditure by households* (see figure 4.6), the SARB provides data for four categories of expenditure, namely durable goods, semi-durable goods, non-durable goods and service. Services has been the largest household expenditure category since 1998 (when it overtook non-durables) with major line items consisting of rent and other housing services, as well as transport and communication services. Services peaked at 27.9 per cent of GDP in 2001, after which it declined slightly to 25.8 per cent in 2017. Non-durable goods is the second largest item and bottomed at 22.8 per cent in 2010, after which it increased somewhat to above 24.0 per cent in 2017. The major line item for non-durable goods is food, beverages and tobacco.

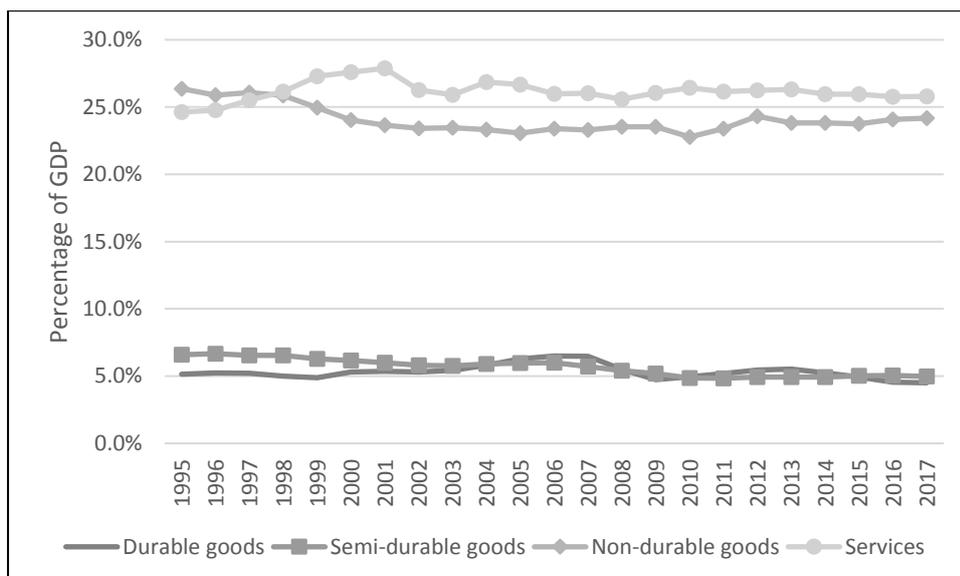


Figure 4.6: Final consumption expenditure of households: expenditure categories, 1995 to 2017

Source: SARB; compiled by author

Having looked at all the major line items of the NIPA account, *gross saving* of households can now be calculated by subtracting the final consumption expenditure from total available household resources. Gross saving amounted to R31,2 billion and R75,3 billion, in 2005 and 2017 respectively, with an average of R24,7 billion recorded during the period. Compared to the size of the economy, it declined from 1.9 per cent of GDP in 2005 to a mere 0.2 per cent in 2013. Thereafter it recovered and in 2017 it reached 1.6 per cent of GDP (see figure 4.7).

To determine the *net saving of households*, depreciation has to be taken into account. This item is also called *consumption of fixed capital* (at replacement value) and remained very stable throughout the period 1995 to 2017, averaging around 1.6 per cent of GDP.

The *net saving* of households peaked at 2.4 per cent of GDP in 1997, after which it declined to -1.4 per cent in 2007. It subsequently recorded negative (dissaving) values up until 2017. Its lowest point of -1.4 per cent of GDP was recorded in 2007; that is at the height of the strong economic growth spurt South Africa experienced at the time⁷⁹. It seems likely that the GFC brought with it some consumer caution, as net saving “improved” to -0.3 per cent of GDP by 2009. As soon as the economy regained traction (around 2010), net saving dipped again and continued to decline to a low of -1.4 per cent of GDP in 2013. Thereafter it improved again marginally and stood at 0.2 per cent in 2017.

⁷⁹ South Africa’s GDP rose on average by more than 5.0 per cent per year during the period 2004-2007 (SARB).

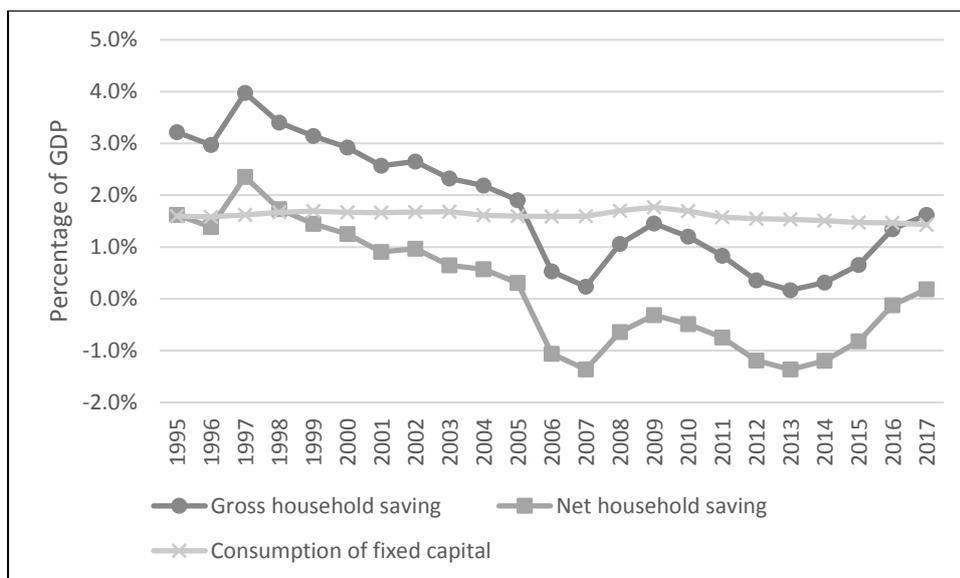


Figure 4.7: Gross and net saving of households, 1995 to 2017

Source: SARB; compiled by author

As a summary to this section, it is evident that household saving, as measured by the income statement approach, indicates a long-term declining trend in net household saving to GDP. Since 2006 it turned negative (dissaving). This decline stabilised around 2008, as net household saving has fluctuated around the -1.0 per cent to GDP level since then and actually improved to record a small positive figure of 0.2 per cent of GDP by 2017.

There are two major determinants of this trend, namely disposable income of households and final consumption expenditure of households. Compared to the size of the economy, both of these have been trending downwards, but over time the buffer that existed between them has been eroded to the point where it was wiped out in 2006. However, after 2010 the downward trend in both the disposable income of households and final consumption expenditure of households (seems to have) stabilised somewhat, which also explains the stabilisation in the saving rate.

4.3.2 Impact on voluntary saving

Glancing over the income statement approach, individual line items that provide some hints at voluntary saving behaviour included property income and non-life insurance premiums. During 2005 and 2017, net property income⁸⁰ contributed 17.6 per cent and 9.1 per cent respectively to gross disposable income. Similarly, net non-life insurance premiums

⁸⁰ Net property income is calculated as property income received less property income paid.

contributed 5.4 per cent and 6.5 per cent respectively of gross disposable income, with both these items putting negative pressure on saving.

Items such as social contributions paid and the net equity of households in pension funds could have both a voluntary and mandatory nature, making it impossible to separate the households' motives related to these items.

On aggregate, the data provides little more detail as far as the constituents of the various line items are concerned, and adds to the important caution (see chapters 1 and 4.1) that the saving data has to be analysed in more detail to determine households' motives when it comes to their finances. The next section looks at saving from a balance sheet (wealth) perspective.

4.4 The balance sheet approach

4.4.1 Overview

The balance sheet approach views household savings as the accumulation of wealth, and is measured at a specific point in time. Formal (or standardised) measures and accounting practices related to the household balance sheet have been lacking in the national accounts (both globally and in South Africa), and evidence of research aimed at reliable estimating techniques for South Africa could be found only from around the mid-2000s onwards. Still, South Africa remains one of the first emerging market countries to have incorporated household balance sheet estimates into its SNA. These calculations have since been recalculated to 1975 (Aron & Muellbauer, 2006; Orthofer, 2015:1-3, 16, 33).

Household wealth (W) is calculated as the market value of assets (A), less liabilities (L), or in mathematical terms:

$$W = A - L \qquad \text{Equation 4.3}$$

Household assets can be defined as:

a store of value representing a benefit or series of benefits accruing to the economic owner by holding or using the entity over a period of time. It is a means of carrying forward value from one accounting period to another (United Nations, 2009:39).

For almost all assets, there is a corresponding liability. Liabilities are defined as being established when:

one unit (the debtor) is obliged, under specific circumstances, to provide a payment or series of payments to another unit (the creditor) (United Nations, 2009:39).

From a theoretical perspective, strong emphasis is placed on the distinction between tangible and non-tangible assets. Using these concepts, the determinants of equation 4.3 can be further refined as follows:

$$A = (A_{t-1}^T - CFK + I^T + R^T) + (A_{t-1}^{NT} + I^{NT} + R^{NT}) \quad \text{Equation 4.4}$$

$$L = B_{t-1} + \Delta B + R^B \quad \text{Equation 4.5}$$

Where:

A : The value of tangible and non-tangible assets ($A^T + A^{NT}$)

A_{t-1}^T : The value of tangible assets (capital stock) in the previous period

A_{t-1}^{NT} : The value of non-tangible assets in the previous period

CFK : Consumption of fixed capital

I^T : Investment in tangible assets (e.g. residential property)

I^{NT} : Investment in non-tangible assets (e.g. financial assets)

R^T : Revaluation of tangible assets

R^{NT} : Revaluation of non-tangible assets

R^B : Revaluation of borrowed amount

B_{t-1} : Level of borrowing in the previous period

(Hodgetts et al., 2006:25-26).

The SARB uses the same concepts to present the household balance sheet, but refers to non-tangible assets as financial assets, while tangible assets are called non-financial assets. Non-financial assets include items such as residential buildings, while financial assets include items such as various bank deposits, interest in pension funds and long-term insurers, and even foreign assets. On the liability side of the household balance sheet, mortgage advances and other debt (including instalment sale and leasing, and personal loans) are listed (see table 4.2 for a detailed list of all household assets and liabilities included by the SARB).

Table 4.2: List of household assets and liabilities

<p>Assets:</p> <p><u>Non-financial assets</u></p> <p>Residential buildings</p> <p>Other non-financial assets Non-residential buildings, non-agricultural land, construction works (structures), machinery and equipment, computer and related equipment, transport equipment, agricultural land and orchards, and inventories</p> <p><u>Financial assets</u></p> <p>Monetary assets Deposits with banks and mutual banks, the Land and Agricultural Bank, and the Postbank</p> <p>Interest in pension funds and long-term insurers Official and private self-administered pension and provident funds</p> <p>Other financial assets Government and public enterprise stock, deposits in participation mortgage-bond schemes, corporate bonds and equities, and other, mainly longer-term, deposits. Also deposits with non-bank financial institutions such as the Public Investment Corporation and buy-aid associations</p> <p>Liabilities (debt):</p> <p>Mortgage advances</p> <p>Other debt Instalment sale and leasing, open accounts, securitisation, personal loans, debt with local authorities, and non-incorporated credit</p>

Source: Kuhn, 2010:66-69

According to the data, financial assets is the largest asset category and contributed two-thirds (66.8 per cent) to total assets in 2017. Interest in pension funds and long-term insurers is the largest financial asset. In contrast, non-financial assets contributed only 33.2 per cent, with residential buildings being the largest non-financial asset sub-category.

On the liability side, mortgage advances to households contributed roughly half (48.4 per cent) to total liabilities, while the other half is made up of other debt items, including instalment sale and leasing, as well as personal loans (see table 4.3).

Table 4.3: Balance sheet of the household sector, 2005 and 2017

Categories		Code	2005	2017
		KBP	R billions	R billions
Assets	Non-financial assets	6920	R 1,257	R 4,267
	Residential buildings	6921	R 1,022	R 2,693
	Other non-financial assets	6922	R 235	R 1,574
	Financial assets	6923	R 2,740	R 8,597
	Assets with monetary institutions	6924	R 352	R 1,174
	Interest in pension funds and long-term insurers	6925	R 1,410	R 4,509
	Other financial assets	6926	R 978	R 2,914
Total assets		6927	R 3,997	R 12,864
Liabilities	Mortgage advances	6929	R 389	R 982
	Other debt	6930	R 341	R 1,047
	Total liabilities	6928	R 730	R 2,029
Net wealth	Net wealth	6931	R 3,267	R 10,835

Source: SARB; compiled by author

Compared to the size of the economy, household assets performed strongly during the early 2000s as it rose from 217.5 per cent of GDP in 2002 to 295.7 per cent in 2006. It declined during the GFC to 253.8 per cent of GDP in 2008. By 2017 it had recovered to 276.5 per cent of GDP (see figure 4.8).

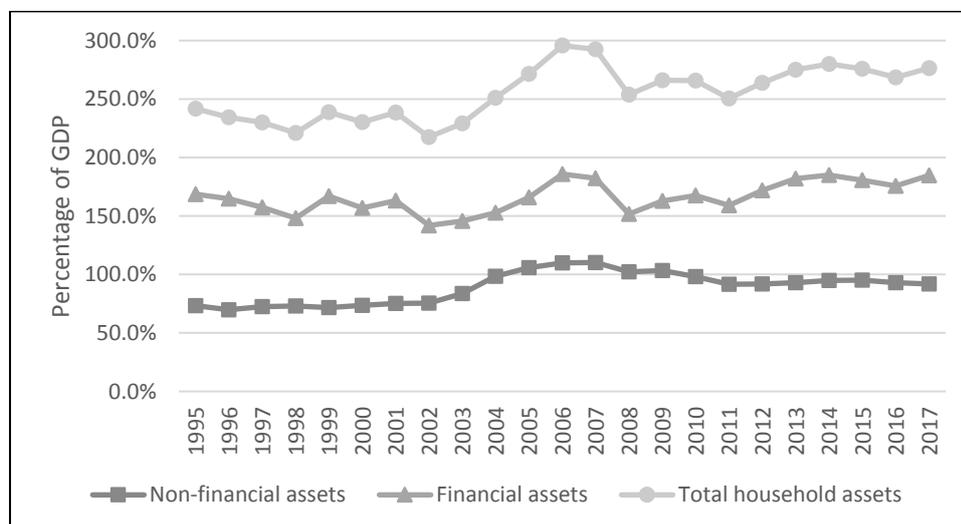


Figure 4.8: Total, non-financial and financial assets of households, 1995 to 2017

Source: SARB; compiled by author

Non-financial assets are driven strongly by the residential property market, and the housing boom experienced during the early 2000s in the South African economy is clearly visible in the data (see figure 4.9). Residential property assets almost tripled from R528 billion in 2002 to R1,5 trillion in 2008. Compared to the size of the economy, residential buildings peaked at

68.5 per cent of GDP in 2007. Post the GFC, this item decreased to 58.0 per cent of GDP in 2012, after which it again drifted marginally higher, but remained well below its previous peak.

The Absa house price index (2019) is a well-known indicator to gauge the strength of the residential property market in South Africa. According to this measure, house prices (as measured by the “All-sizes⁸¹” index) peaked around the end of 2004 (October 2004, recorded a 35.7 per cent year-on-year growth rate). From there the index decreased to the point where annual changes turned negative around December 2008. After 2008 house prices remained rather muted, averaging around 5.8 per cent year on year growth from 2009 to 2015.

Other non-financial assets⁸² (including items such as non-residential buildings, non-agricultural land and construction works) also performed strongly during the early 2000s, most likely benefitting from the general positive economic sentiment at the time.

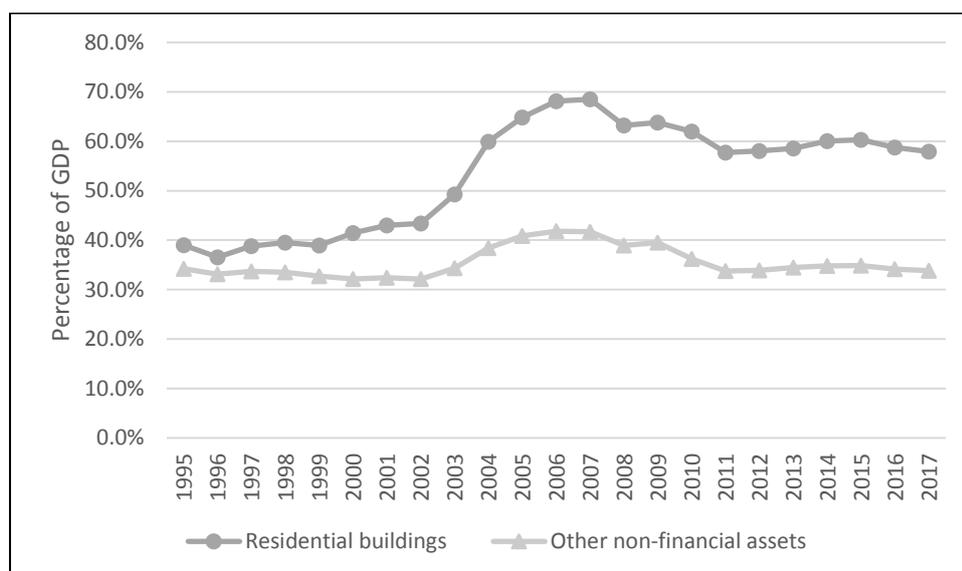


Figure 4.9: Residential buildings and other non-financial assets, 1995 to 2017
 Source: SARB; compiled by author

Interest in pension funds and long-term insurers is the largest financial asset class and it contributed 52.5 per cent to financial assets during 2017 (it is also the largest of all asset classes, both non-financial and financial). Looking at this item’s performance over time, a distinctive “W” patterns is evident as interim high points were reached during 2006 (96.7 per cent of GDP) and 2014 (100.0 per cent of GDP) respectively. This is most likely linked to strong bull runs

⁸¹ The All-sizes index includes small, medium and large houses, ranging in size from 80m² to 400m², Absa House Price Index (2019).

⁸² Based on the definition of voluntary saving (see section 1.5), other non-financial assets fall outside the ambit of this study. However, it has been left in this section of the study for completeness’ sake.

in local equities, experienced around both these periods (see figure 4.11). After 2014, the item decreased marginally, and measured 96.9 per cent of GDP in 2017.

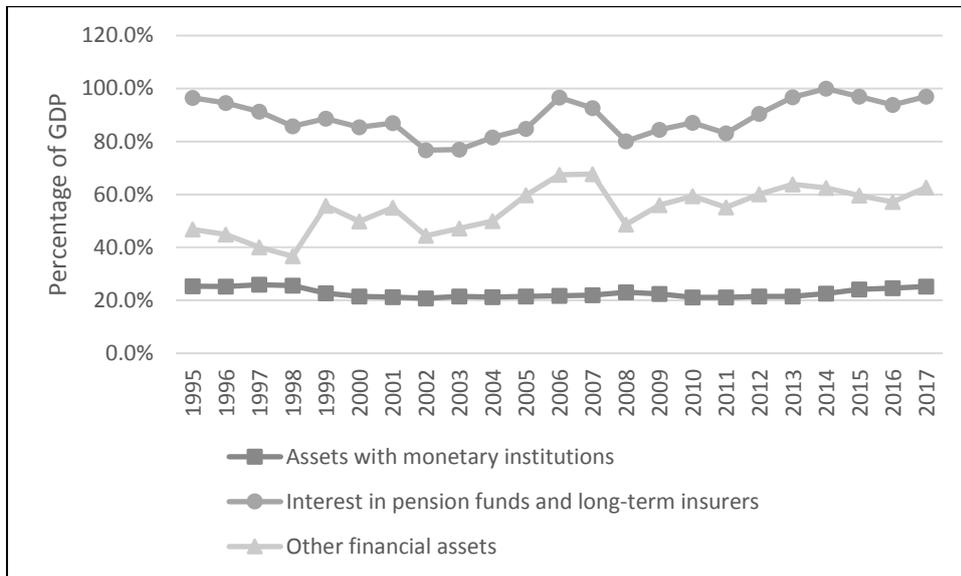


Figure 4.10: Assets with monetary institutions, interest in pension funds and long-term insurers and other financial assets of households, 1995 to 2017

Source: SARB; compiled by author

Other financial assets (including items such as corporate bonds and equities) is the second largest financial asset category and recorded a trend similar to interest in pension funds and long-term insurers. Monetary assets (including deposits with banks) did not change much during the analysis period (see figure 4.10). Drivers of financial assets include movements in equity and bond markets, as well as the interest rate cycle (see figure 4.11).

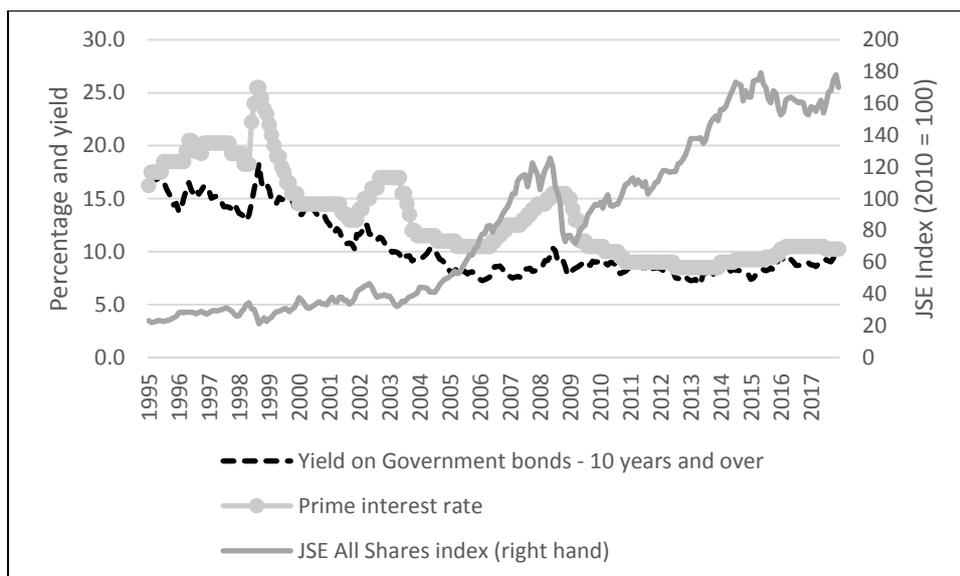


Figure 4.11: South African bonds, equities and the interest rate, 1995 to 2017
 Source: SARB; compiled by author

Turning to liabilities, mortgage advances was the largest contributor to total liabilities during most of the analysis period, and rose especially strongly around the residential property boom of 2003 to 2007 (see figure 4.12). However, other debt items caught up in 2014 and have been recording higher values since then.

To interrupt the discussion to look at the impact that credit could have on saving, private sector credit extension (PSCE) in South Africa rose strongly from 54.2 per cent of GDP in 1994 to 83.7 per cent of GDP in 2008. Although the PSCE figures include both households and private businesses, Prinsloo (2000:21) notes that an inverse relationship can be expected between consumer credit and saving. Various researchers tested this empirically and found evidence of a negative (inverse) correlation between the liberalisation (expansion) of credit markets and household saving in South Africa (see for instance Viegi, 2014:134-136; Aron & Meullbauer, 2000 and 2012; and Harjes & Ricci, 2005).



Figure 4.12: Financial liabilities, 1995 to 2017

Source: SARB; compiled by author

Related to household debt, Ardington et al. (2004) propose that households can find themselves in one of three possible vulnerability categories (profiles), namely stable (non-poor), vulnerable or in poverty (poor). Vulnerability analysis is described as proactive in the sense that it expands the scope of poverty analysis. This in turn links to the concept of mobility⁸³, or the effect that life course events can have on households’ vulnerability. Ardington, et al. (2004:634) make the valid observation that “while access to credit can reduce a households’ vulnerability by improving their ability to smooth consumption, over-indebtedness can lead to increased vulnerability” (section 4.6 looks in more detail at the incurrence of household liabilities).

The focus now falls on net wealth that is calculated as assets less liabilities. Compared to the size of the economy, net wealth in South Africa peaked in 2006 at 245.4 per cent of GDP. It dropped to 201.9 per cent of GDP in 2008, as the GFC impacted on asset valuations. A distinctive “W” pattern is evident again between 2007 and 2014 as wealth fluctuated in accordance with economic growth and financial market trends during the period. By 2017, net wealth had recovered to 233.0 per cent of GDP (see figure 4.13).

⁸³ Mobility studies focus on the movement of individuals or households through the distribution of economic well-being over time. The concept is discussed again in detail in chapters 5 and 6.

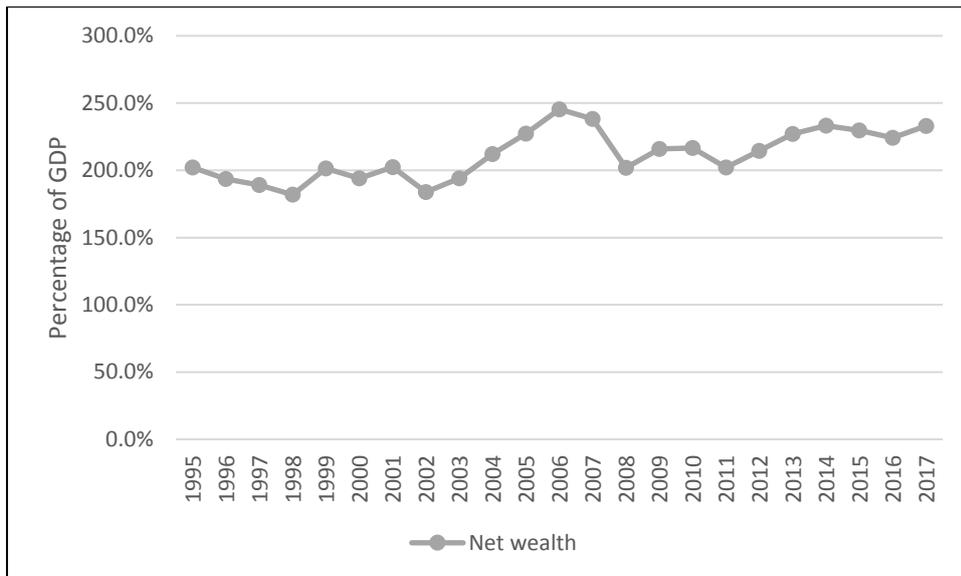


Figure 4.13: Households' net wealth, 1995 to 2017

Source: SARB; compiled by author

Another measure is to look at how household net wealth performed when compared on an annual basis. This indicates an average annual increase of 10.9 per cent for the period 2005 to 2017. The strongest performances were measured during 1999, 2004 and 2006, which all recorded above 20.0 per cent rises. The only negative figure was recorded in 2008, which measured -4.8 per cent (see figure 4.14).

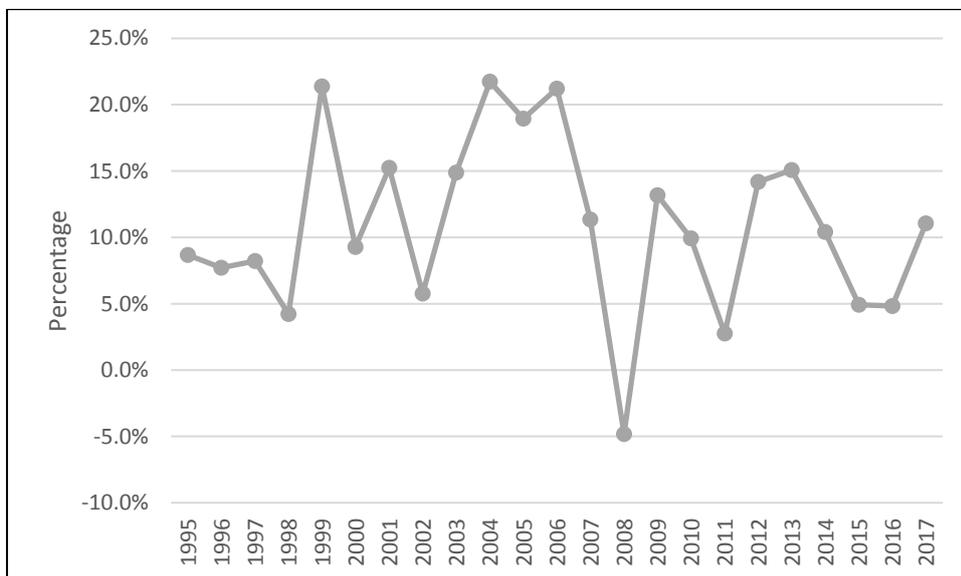


Figure 4.14: Households' net wealth: percentage change, 1995 to 2015

Source: SARB; compiled by author

4.4.2 Impact on voluntary savings

Using the household balance sheet approach, voluntary savings during 2005 and 2017 represented respectively 58.8 per cent and 52.7 per cent of household assets; and 72.0 per cent and 62.6 per cent of household net wealth. This is calculated by excluding the other non-financial assets and the interest in pension funds and long-term insurers⁸⁴ line items. This is a significant finding for this study as it indicates that the bulk of household's wealth is kept in some form of voluntary accumulated assets.

4.5 The link between households' saving and their accumulated savings

The reason why the link between the income statement and balance sheet approaches is important is because it enables analysts to determine the extent to which households' decisions in one time period affects their financial circumstances in another time period. More specifically, research should be able to identify how saving decisions affect the accumulation of wealth.

Unfortunately, as indicated below, one of the theoretical factors (namely valuation adjustments) dominates the results, at least during the period 2005 to 2015. However, it remains an important research challenge and is therefore included in this study.

Given the fact that saving is a flow concept while savings is a stock concept, the link between the two concepts becomes evident only when time (e.g. change in wealth over a given period) is factored into the analysis. An identity can be used to assist in this regard. It relates to the fact that investment must be financed with one of three sources, namely from current income, by borrowing or by capital transfers⁸⁵, which equals:

⁸⁴ It is excluded as parts of it are expected to be of a mandatory occupational (pillar 2) nature. It also means that the values are likely underestimated due to the voluntary part of interest in pension funds and long-term insurers – by implication, also excluded.

⁸⁵ Capital transfers are cash injections into the household sector, which is not part of current income, for example, capital transfers by immigrants (Hodgetts et al., 2006:9).

$$I^T + I^{NT} = S + \Delta B + CT \quad \text{Equation 4.6}$$

Where:

I^T : Investment in tangible assets⁸⁶

I^{NT} : Investment in non-tangible assets⁸⁷

S : Gross saving

ΔB : Net change in household borrowing

CT : Capital transfers (including those from overseas)

(Hodgetts et al., 2006:25).

By subtracting liabilities from assets (that is subtract equation 4.5 from equation 4.4), and using the identity provided in equation 4.6, it can be shown that:

$$W = W_{-1} + R^{NET} + S_N + CT$$

Or stated differently

$$\Delta W = R^{NET} + S_N + CT \quad \text{Equation 4.7}$$

Where

ΔW : Change in wealth ($W_t - W_{t-1}$)

$R^{NET} = R^T + R^{NT} - R^B$ (net revaluations)

$S_N = Y - C - CFK$

(Hodgetts et al., 2006:26).

The three theoretically contributing factors to the change in household wealth are thus: net revaluations, net saving and capital transfers.

⁸⁶ This item includes houses or flats. (Hodgetts et al., 2006:9).

⁸⁷ This includes financial assets (Hodgetts et al., 2006:9).

Alternatively, yet similar to this, Orthofer (2015:5) defines the change in household wealth in more detail as:

$$S_{S,t} = S_{F,t} + \frac{\Delta P_t}{P_{t-1}} \times W_{t-1} + K_t + O_t \quad \text{Equation 4.8}$$

Where:

$S_{S,t}$: Stock of savings (changes in wealth)

$S_{F,t}$: Flow of saving (“saving-induced wealth”)

$\frac{\Delta P_t}{P_{t-1}} \times W_{t-1}$: Asset revaluations

K_t : Capital transfers

O_t : Other⁸⁸ factors

Both Hodgetts et al. (2006) (see equation 4.7) and Orthofer (2015) (see equation 4.8) list the three factors contributing to the changes in household wealth as net revaluations, net saving and capital transfers; however, Orthofer (2015) also explicitly includes a fourth, namely *other factors* (for example destruction or a discovery).

Returning to what was discussed in section 4.3, net saving represents the part of disposable income that is not spent on consumption expenditure. When positive, it can be used “to acquire non-financial or financial assets of one kind or another, including cash, or to repay liabilities”. But when negative, “the excess must be financed by disposing of assets or incurring new liabilities” (United Nations, 2009:197). Stated differently, a high level of saving should mean that net worth and assets could be acquired without increasing debt. Conversely, in a situation of low savings (or dissaving), wealth should be reduced and existing assets be decreased and/or liabilities will have to be increased (Hodgetts et al., 2006).

Using the methodology of Hodgetts et al. (2006), the change in South African households’ net wealth consists of three factors, namely net saving, revaluations and capital transfers. Net

⁸⁸ Examples of other factors can be the “result of the discovery of a subsoil resource or the destruction of assets as a result of war or a natural disaster” (United Nations, 2009:330).

saving and capital transfer data are available from the SARB; however, the revaluation of assets is treated as a balancing⁸⁹ item.

The contribution of net saving to the acquisition of wealth peaked in 1998 at 24.0 per cent, after which the contribution of saving declined to the point where it turns negative in 2006 (see table 4.4). In other words, households were increasing their borrowing and/or utilising existing wealth. In 2017, saving was again able to make a small positive contribution.

The prominence of the net revaluation of assets (treated as the balancing item in the calculation) is evident as it alone explains almost all the movement in the change of wealth, especially from the mid-2000s onwards. It is very likely that the stellar rise in residential property prices and equity markets is responsible for the bulk of the revaluation adjustments.

The contribution of capital transfers remains rather insignificant throughout, with the exception of 2008 and 2011 when it recorded contributions of 6.0 per cent and 10.0 per cent respectively. This is, however, due to weak changes in net wealth recorded during the two periods.

International evidence supports these findings by suggesting that asset revaluations are often the most important driving factor for household wealth. Hodgetts et al. (2006) analysed data for New Zealand and indicated how the revaluation effects completely “swamped” other factors between 2002 and 2005. The problem is that this can fluctuate significantly according to, among others, different accounting principles used (e.g. book or market values), to the point where it could be viewed as merely “paper profits”. Orthofer, (2015:4) ran a similar test and found that between 1975 and 2014, South African real net household saving, accounted for merely 15.0 per cent of the increase in real household wealth.

⁸⁹ Orthofer (2015:21) encounters a similar challenge and laments the fact that a fully integrated set of national accounts (from which this type of data could simply be read) has not been published by the SARB.

Table 4.4: Decomposition of households' net wealth, 1996 to 2017

	Change in net wealth*	Net revaluations of assets (balancing item)		Net saving**		Net capital transfers#	
	billions	billions	% total	billions	% total	billions	% total
1996	R 88	R 79	90%	R 9	10%	R 0	0%
1997	R 101	R 84	84%	R 17	16%	R 0	0%
1998	R 56	R 42	75%	R 13	24%	R 1	1%
1999	R 296	R 281	95%	R 12	4%	R 3	1%
2000	R 156	R 141	90%	R 12	8%	R 3	2%
2001	R 280	R 263	94%	R 9	3%	R 7	3%
2002	R 122	R 106	87%	R 12	10%	R 4	4%
2003	R 333	R 319	96%	R 9	3%	R 5	2%
2004	R 559	R 546	98%	R 8	2%	R 5	1%
2005	R 593	R 584	99%	R 5	1%	R 3	1%
2006	R 790	R 805	102%	-R 19	-2%	R 5	1%
2007	R 512	R 531	104%	-R 29	-6%	R 10	2%
2008	-R 242	-R 241	99%	-R 15	-6%	R 14	6%
2009	R 630	R 626	99%	-R 8	-1%	R 11	2%
2010	R 537	R 539	100%	-R 13	-2%	R 11	2%
2011	R 164	R 170	104%	-R 23	-14%	R 17	10%
2012	R 867	R 889	102%	-R 39	-4%	R 17	2%
2013	R 1,053	R 1,082	103%	-R 48	-5%	R 19	2%
2014	R 836	R 862	103%	-R 46	-5%	R 19	2%
2015	R 436	R 450	103%	-R 33	-8%	R 19	4%
2016	R 449	R 435	97%	-R 5	-1%	R 19	4%
2017	R 1,079	R 1,053	98%	R 9	1%	R 17	2%

*Calculated as annual change in net wealth (KBP6931)

**Household net saving (KBP6200)

#Calculated as the difference between capital transfers receivable (KBP6850) and capital transfers payable (KBP6851)

Source: SARB; compiled by author

During a discussion with employees of the SARB regarding the calculation, they warned that such an analysis should be made cautiously as various assumptions and estimates are made when calculating these line items. The bank employees also confirmed that they were in the process of a major overhaul regarding various aspects of the household sector data. This means that in future data from the SARB should enable analysts to construct more reliable tables, such as table 4.4 (also see the first footnote of this chapter).

The next section utilises the NFA, in which flow-of-funds data is analysed to reveal additional information.

4.6 The National Financial Account

4.6.1 Overview

The main reason for including the financial account as part of this study is because it enables the elimination of valuation changes in asset values, thus only reflecting the transaction flows. Section 4.5 highlighted the large impact that valuation adjustments can have on household savings, thus making use of data drawn from the financial account is an attractive alternative measurement to take into consideration.

The NFA is a systematic macroeconomic analysis of financial interlinkages between the real, financial, fiscal and external accounts of the economy. It is accomplished by the collection, processing and consolidation of balance sheet data on a sector-to-sector basis (SARB, 2015c:84).

The financial account records transactions that involve financial assets and liabilities that are undertaken between resident institutional units, and also between these units and the rest of the world (United Nations, 2009:219). It distinguishes between five major economic sectors: the foreign sector, financial intermediaries, general government, corporate business enterprises and households.

The information is presented in a matrix structure, with sources (S) and uses (U) of funds per sector shown in columns, while the transaction items are shown in the rows. Sources represents the net increase in liabilities, while uses is the net increase of assets, with both being measured in terms of transaction values.

The *net lending/net borrowing* for each sector is calculated as the difference between its sources of funds and its uses of funds; that is:

$$\text{Net lending/net borrowing} = S - U \quad \text{Equation 4.9}$$

The *net financial investment balance* for each sector is given by the difference between its net financial assets (uses of funds) and its net financial liabilities (sources of funds); that is:

$$\begin{aligned} \text{Net financial investment} &= \Sigma A - \Sigma L && \text{Equation 4.10} \\ &= U - S \end{aligned}$$

Although the sources and uses of funds will be equal on a national (total) basis, this is not necessarily the case for individual sectors.

Using the above framework, the sectoral financing balances in the economy can be calculated. Table 4.5 provides the 2005 and 2017 sectoral gross saving, gross capital formation⁹⁰ and net lending/borrowing⁹¹ balances for South Africa.

Some observations from the sectoral financing receive attention here since it provides valuable insight into the interactions between major sectors in the economy and highlights the role of the household sector. Financial intermediaries and the foreign sector are the main lenders during both 2005 and 2017. The foreign sector filled the domestic funding gap to the extent of R58,2 billion and R114,1 billion during 2005 and 2017 respectively.

Table 4.5: Sectoral financing balances*, 2005 and 2017 (R millions)

	2005			2017		
	Gross saving	Gross capital formation	Net lending (+) or borrowing (-)	Gross saving	Gross capital formation	Net lending (+) or borrowing (-)
Foreign sector	R 58,191		R 58,191	R 114,071		R 114,071
Financial intermediaries	R 30,399	R 5,396	R 25,003	R 113,289	R 19,858	R 93,431
General government	R 9,986	R 41,245	R -31,259	R -36,709	R 148,816	R -185,525
Public NFBE*	R 38,737	R 30,062	R 8,675	R 72,987	R 173,830	R -100,843
Private NFBE*	R 112,178	R 165,121	R -52,943	R 510,808	R 426,589	R 84,219
Households	R 31,425	R 39,092	R -7,667	R 90,874	R 96,227	R -5,353
Total	R 280,916	R 280,916	-	R 832,045	R 832,045	-

* Non-financial business enterprises

Source: SARB; compiled by author

General government was a net borrower in both periods with the size of its deficit (in nominal terms) expanding almost five fold during the period. The Reserve Bank notes that this was in response to the GFC and in order to be able to maintain appropriate levels of spending, especially related to infrastructure and service delivery. Similarly, public non-financial business enterprises regressed significant during the period, as it went from a surplus position

⁹⁰ Line item no. 4 in the National Financial Account as taken from the NIPA accounts.

⁹¹ Line items no. 5 and 6 in the National Financial Account.

in 2005 to a deficit of R100,8 billion in 2017. However, the bulk of this is linked to capital spending in the electricity, transport and logistics sectors (SARB, 2016:87-90).

Private non-financial business enterprises maintained its position as the biggest saver, as it was responsible for around 40.0 per cent and 62.0 per cent respectively of gross saving in 2005 and 2017. What has changed is that whereas the sector was a net borrower to fund its large capital formation activities during 2005, it turned into a net lender (around R84,2 billion) during 2017.

Households were net borrowers during both periods. Short-term credit (bank loans and advances) became more popular (especially after 2009) even outpacing mortgage borrowing. The SARB states "... real estate as a key physical wealth-generating asset in the households' balance sheet was very slow, and suggested that other factors, including higher income growth, were needed to reignite households' demand for mortgage borrowing...". The asset side of the balance sheet was adversely impacted by, among others, "... muted employment gains and an episode of resignation and withdrawal of retirement savings by a number of public servants, owing to misunderstanding and fears related to the 2015 Taxation Laws Amendment Bill"⁹² (SARB, 2016:91). Next, section 4.6.2 looks in detail at the household sector.

4.6.2 Households in the financial account

This section focus on the transaction flows related to households in the financial account. The analysis starts by showing the different items of the account for one specific year (in this case 2017). Thereafter, the information in presented as time series data covering 1995 to 2017 to indicate the relative importance of the different items over time.

Looking at the various line items, the first four rows represent non-financial (real sector) data including net saving, consumption of fixed capital, capital transfers and gross capital formation. The link between the real and financial account items are provided in rows 5 (net lending or borrowing) and 6 (net financial investment). For each sector these two items should be the same. The totals for net acquisition of financial assets and liabilities are provided in rows 7 and 8 respectively. Rows 9 to 33 represent 24 categories of financial assets and liabilities, including a balancing item (i.e. row 33). The classification of financial instruments is based on the

⁹² Updated to the 2017 Draft Taxation Laws Amendment Bill and Tax Administration Laws Amendment Bill, as published for comment during July 2017 by the National Treasury. See section 3.6.3.5 for more detail.

liquidity of the instruments, starting with the most liquid⁹³ (cash and demand deposits) at the top, while less liquid items (e.g. mortgage loans and interest in pension funds) are found more towards the bottom (see table 4.6).

Table 4.6: National Financial Account, household sector flow of funds, 2017

Transaction items	Households	
	Sources (S)	Uses (U)
	millions	millions
1 Net saving	R 7,122	
2 Consumption of fixed capital	R 66,607	
3 Capital transfers	R 17,252	R 107
4 Gross capital formation		R 96,227
5 Net lending (+)/net borrowing (-) (S)	-R 5,353	
6 Net financial investment (+) or (-) (U)		-R 5,353
7 Net incurrence of financial liabilities (total S 9-33)	R 270,354	
8 Net acquisition of financial assets (total U 9-33)		R 265,001
9 Gold and other foreign reserves		
10 Cash and demand monetary deposits		R 18,562
11 Short/medium-term monetary deposits		R 49,489
12 Long-term monetary deposits		R 26,977
13 Deposits with other financial institutions		R 48,328
14 Deposits with other institutions		R 1,569
15 Treasury bills		
16 Other bills		
17 Bank loans and advances	R 26,049	
18 Trade credit and short-term loans	R 11,354	R 4,198
19 Short-term government bonds		-R 2
20 Long-term government bonds		-R 5
21 Non-marketable government bonds		R 477
22 Securities of local governments		
23 Securities of public enterprises		-R 100
24 Other loan stock and preference shares		-R 1
25 Ordinary shares		
26 Foreign branch/head office balances		
27 Long-term loans	R 2,167	-R 666
28 Mortgage loans	R 33,835	
29 Interest in retirement and life funds		R 120,246
30 Financial derivatives		
31 Amount receivable/payable	R 181,148	-R 4,071
32 Other assets/liabilities	R 15,801	
33 Balancing item		

Source: SARB; compiled by author.

⁹³ It is unclear why *Gold and other foreign reserves* are listed first; however, it has little influence on the household sector.

It is now necessary to focus on how the data changed over time (see figure 4.15). Households' net lending (borrowing) position started to deteriorate, especially after the early 2000s. In 2004 households switched from being net lenders to net borrowers. Between 2005 and 2017 the average net funding requirement was R32,0 billion per year (about 1.2 per cent of GDP), with 2007 recording the highest borrowing requirement of R57,3 billion (2.7 per cent of GDP) (see figure 4.15).

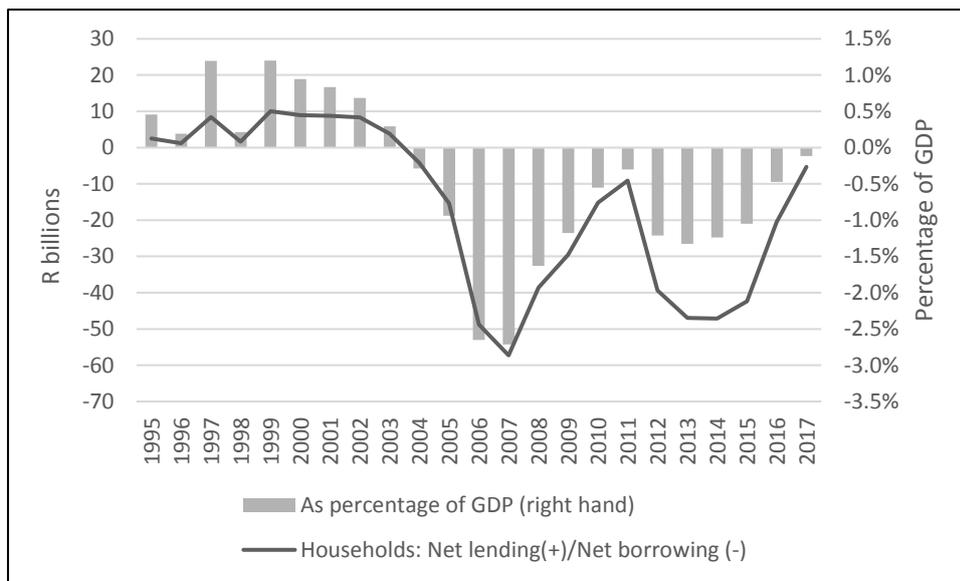


Figure 4.15: Households: net lending (+)/net borrowing (-), 1995 to 2017
 Source: SARB; compiled by author

Between 1995 and 2003, the value of households' incurrence of financial liabilities and their acquisition of financial assets remained fairly equal. However, between 2004 and 2015 financial asset accumulation struggled to keep track with the incurrence of financial liabilities. This meant that the household sector became a net borrowing sector (see figure 4.16). During 2016 and 2017, households were able to shrink this gap, but the sector remained a borrower.

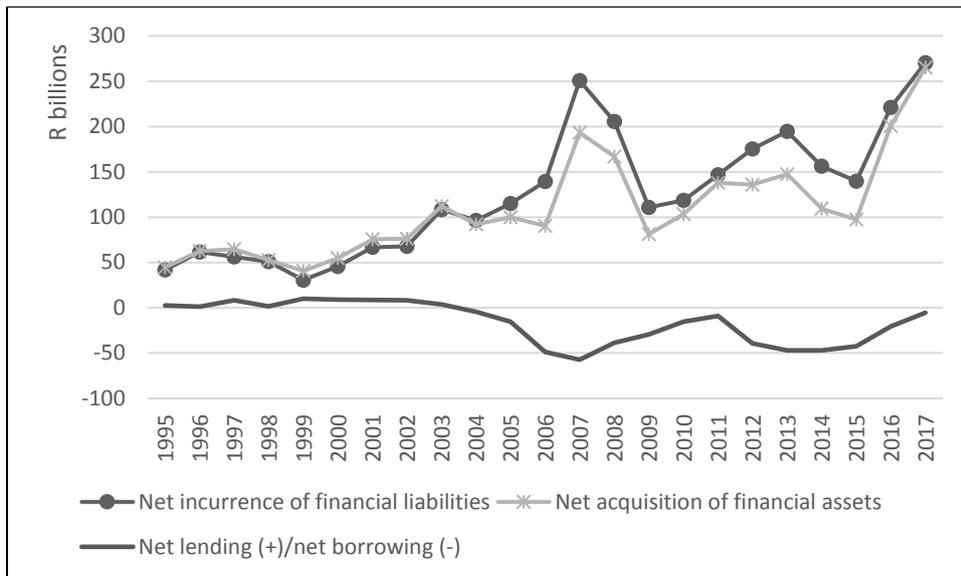


Figure 4.16: Households: net incurrence of financial liabilities and net acquisition of financial assets, 1995 to 2017

Source: SARB; compiled by author

Focusing in more detail on the acquisition of financial assets, it is observed that retirement and life funds were the preferred asset class for most of the period (see figure 4.17). Flows to this item peaked in 2007 at R121,8 billion, after which it remained more muted post the GFC. In 2016 and 2017 flows to retirement and life funds picked up again as R88,5 billion and R120,2 billion were recorded respectively. Unfortunately, no further detailed distinction is provided between the mandatory or voluntary nature of flows to retirement and life funds.

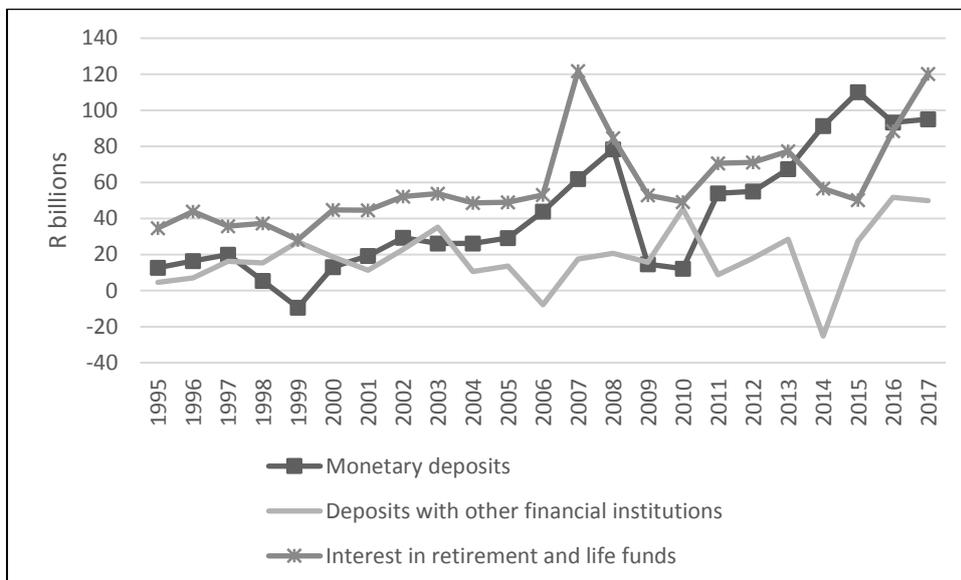


Figure 4.17: Households' net acquisition of financial assets, 1995 to 2017

Source: SARB; compiled by author

Monetary deposits⁹⁴ also increased during the mid-2000s as flows increased from R29,1 billion in 2005 to R78,4 billion in 2008. Also noteworthy is the temporary weaker flows in monetary deposits recorded around 1999 and again in 2009-2010. These are most likely responses to interest rates being cut aggressively during both these periods (see figure 4.11). By 2014, flows to monetary deposits had recovered strongly and actually recorded higher flows than that of retirement and life funds for 2014 to 2016. Further analysis of the underlying items indicates that this is strongly driven by demand as well as short/medium-term deposits, while long-term deposits were lagging behind.

A highly significant finding is that between 2012 and 2015 the flows to monetary deposits more than doubled, which highlights a shift towards a voluntary household saving instrument. Reasons for this could be linked to 2012 being a lower turning point in the interest rate cycle in South Africa (see figure 4.11). Also, during the latter part of the period (2015) the bull market in equities was starting to lose momentum (see figure 4.11). This period was also marked by an increase in political uncertainty in South Africa, notably the untimely firing of the minister of finance in December 2015, which likely increased precautionary type saving among households.

Deposits with other financial institutions refer to those with institutions and financial institutions other than banks. The situation remained very volatile throughout, making it difficult to link performance to developments in financial markets.

Moving to liabilities, it is evident that credit extension, in general, increased rapidly from 2003 onwards. The two main culprits were mortgage advances and bank loans (see figure 4.18).

⁹⁴ Monetary deposits consist of cash and demand deposits, short/medium-term and long-term deposits. It includes deposits with the SARB, the Corporation for Public Deposits, banks, the Land Bank, mutual banks and the Postbank.

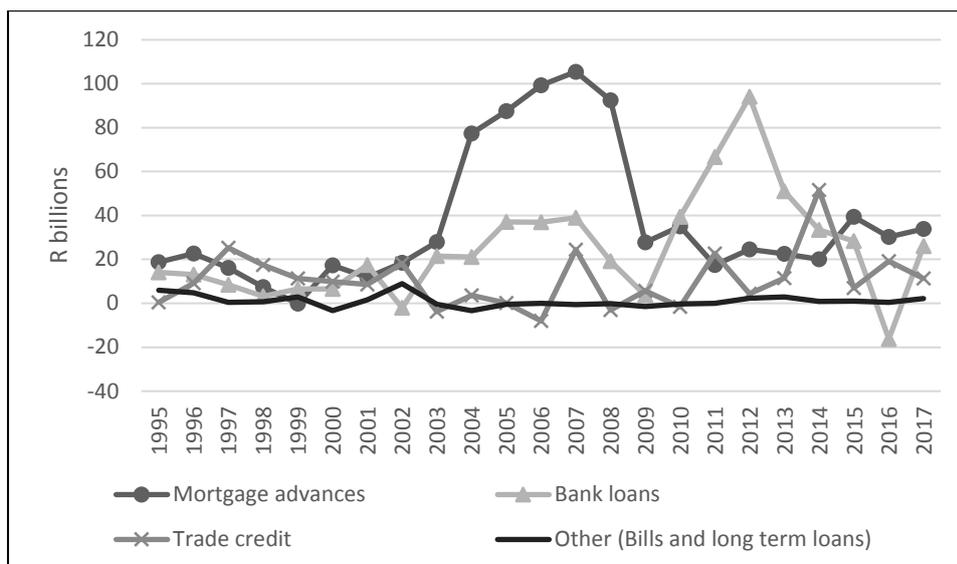


Figure 4.18: Households' net incurrence of financial liabilities⁹⁵, 1995 to 2017
 Source: SARB; compiled by author

Financial flows into mortgage advances rose nearly fourfold from R27,9 billion in 2003 to R105,5 billion in 2007. The dampening effect that the GFC had on the residential property sector is evident, with demand for mortgage advances plummeting and remaining relatively low between 2009 and 2014. It did pick up again somewhat towards the end of the analysis period. As expected the general trend in mortgage advances mirrors that of residential property in the household balance sheet, despite the fact that the latter includes valuation adjustments (see section 4.4.1).

Bank loans almost doubled between 2003 and 2007. They again surged between 2010 and 2013, reaching R94,0 billion in 2012. After that flows to this item decreased considerably and even recorded a negative value of –R16,3 billion in 2016 (interpreted as households opting to pay back loans). In trying to understand what these trends entail, a written enquiry was sent by the author to the SARB. The SARB confirmed that this item is constituted mainly of bank loans (and does not include loans by all financial institutions), but that banks can also issue unsecured loans. The SARB also referred to the African Bank debacle (2014), which highlights the risks related to the spike in bank loans observed around 2012 (see Mail&Guardian, 2016).

The fact that households became net borrowers around 2003 can be attributed mainly to the sharp increase in household debt, caused by sharp increases in mortgage debt (2004-2008) and

⁹⁵ Not all financial liabilities, as per S-47, are included here, but only the primary identifiable items appear. A notable exclusion is the line item no. 30, *Amounts receivable/payable*. The handbook to the System of National Accounts 2008 notes that “The amounts receivable and payable do not always coincide with the amounts actually received and paid” (United Nations, 2009:107). At times this item can become significant in size, for example in 2017 it is equal to 67.0 per cent of households’ total incurrences of financial liabilities.

bank loans (2010-2012). Whereas mortgage advances is linked to developments in the residential property market (that is regarded as secured lending), bank loans also include unsecured loans. This tendency makes bank loans a higher risk item to both banks and households themselves.

4.7 Conclusion

Household saving, as measured by the income statement approach, shows a long-term declining trend in net household saving expressed as a percentage of GDP, which turned negative (dissaving occurred) since 2006. This decline stabilised around 2008, but remained negative as net household saving fluctuated around the -1.0 per cent to the GDP level between 2008 and 2015. After that it improved slightly as 2017 recorded a small positive value of 0.2 per cent of GDP.

Household savings – measured with the aid of the balance sheet approach – indicate that net wealth rose significantly for the period 2005 to 2017 as an average annualised increase of 10.9 per cent was recorded. Compared to the size of the economy, net wealth in South Africa peaked in 2006 at 245.4 per cent of GDP. Thereafter it dropped to 201.9 per cent of GDP in 2008, as the GFC impacted on asset valuations. By 2017, net wealth had recovered to 233.0 per cent of GDP. A decomposition of the drivers of net wealth indicates that the net revaluation of assets was primarily responsible for the rise in net wealth (see section 4.5).

Data used from the NFA indicates that households switched from being net lenders to being net borrowers in 2003. Between 2005 and 2017 the average net funding requirement was R32,0 billion per year, or 1.2 per cent of GDP. An analysis of the underlying assets and liabilities indicate that the switch (deterioration) was primarily due to the rise of household debt, caused by a sharp increase in mortgage debt (2004-2008) and bank loans (2010-2012).

The salient trends observed in this chapter provide evidence of households increasing their spending and debt during times when the South Africa economy was growing strongly, notably for the period 2004-2007. Strong rising asset prices acted as impetus for a spending and debt spree to continue, as the net worth of individuals continued to improve regardless of their rising debt. The GFC brought an abrupt change to the situation as it caused a sharp devaluation of asset prices (notably residential property and equities). Liquidity for mortgage loans

plummeted while bank loans (including credit cards) increased as households tried to maintain their standards of living.

The situation improved marginally during the latter part of the analysis (after 2010) when the trends in net saving and net borrowing requirements of households both stabilised. However, both of these indicators remained in negative territory.

After analysing the trends in household saving from an aggregate (or national) level, the focus of the study now shifts to household level (sampling) data. In chapter 5 the methodology for the analysis is discussed, while the results are presented in chapter 6.

Chapter Five: Research methodology for the household surveys and study data

5.1 Introduction

The methodology for obtaining and analysing the household data is presented in this chapter. Data is sourced from the IES, the LCS and the NIDS. The study therefore makes use of two types of research designs, namely regular surveys and longitudinal studies.

The chapter consists of section 5.2, which provides an overview of regular surveys, while section 5.3 discusses longitudinal studies. Section 5.4 provides an overview of both the IESs and LCSs, including the methodology and data used for analysis, while section 5.5 provides information about the background, methodology and data for the NIDS. A summary of the methodologies used are provided in section 5.6.

5.2 Regular surveys

Regular surveys are repeated at regular intervals or carried out on a continuous basis and are therefore also often referred to as repeated cross-sectional studies. Most of these surveys focus on individuals or households, but they can also look at various social groupings or organisations. Because they are repeated at regular intervals, regular surveys can achieve continuous improvements by adjusting survey procedures. However, this can also lead to a discontinuity problem when data is compared over time.

Regular surveys are often multi-purposed as they typically have a set of “core” focus areas, including a number of ad hoc topics that can be rotated in or out of the survey between different sweeps/waves. A very important differentiator is that these surveys usually use a fresh⁹⁶ sample for each sweep (Hakim, 2000:95-96).

⁹⁶ Or at least differing partly from the previous sample (for example, rotating sample designs, as discussed later in this section).

Certain concepts can help to clarify the difference between regular and other types of surveys. They can be identified by looking at the type of information different surveys provide. In this regard an important distinction can be made between net and gross changes.

Net changes at the aggregate (macro) level can be viewed as “the product (aggregate) of all movements, swings and changes at the individual level” (Hakim, 2000:96). In many instances, information at the net level suffices the research objective, for example, approximations of zero sum games or situations in which overall shifts (“right” to “left” or rising and falling) are studied.

On the other hand, *gross changes* focus on micro level changes (flows) or on causal processes at the individual level. Therefore gross changes look beyond the net aggregate changes to identify the various individual (and often opposing) flows that take place underneath. In order to obtain flow data, some type of longitudinal study is required (see section 5.2.3).

Hakim (2000:96) notes that as most regular surveys use a fresh (or partly refreshed) sample each time and they provide information on net changes, they fall somewhere between “single-time cross-sectional surveys and longitudinal surveys”. Relating this to the data structures of surveys (discussed in more detail in section 5.5 below), this refers to pooled cross sections that have both cross-sectional and time series features, but uses new random samples for each sampling wave (Wooldridge, 2020:8).

According to their definition, regular surveys are carried out at a particular point in time and at pre-determined intervals (typically quarterly, annually or biennially). However, in practice it may vary more, for example, some national surveys are carried out without precise pre-determined dates, or at differing time gaps⁹⁷. The main sampling designs for regular surveys include repeated cross-sectional samples (using a fresh sample during each sweep) and rotating samples (some portion of the original sample is replaced with a new sample of equal size during each sweep).

Data is collected through questionnaires, often using Computer Assisted Personal Interview (CAPI) or Computer Assisted Telephonic Interview (CATI) systems⁹⁸. These systems combine interviewing and data capturing into a single operation as the coding, routing, editing and logic

⁹⁷ An example of this is the British Crime Survey series carried out during 1982, 1984, 1988, 1992, 1994, etc., which clearly has different time gaps between surveys (Hakim, 2000:98).

⁹⁸ Another example is Computer-Aided Self-Completion Interview (CASI) systems, sometimes used for the gathering of highly-sensitive data such as drug use (Hakim, 2000:106).

checks are carried out during the interview, resulting in higher quality data. Another advantage is a reduced time lag between data capturing and data analysis. However, there is a trade-off as the above advantages come at a substantial cost, especially related to hardware, software and interviewer training. Given their design, which is aimed at speed and to limit mistakes, they are also less flexible than traditional (paper based) surveys (Hakim, 2000:92, 106).

In social sciences in general, cross-sectional type studies are by far the most commonly used data collecting tool for assessing the determinants of behaviour (Wooldridge, 2020:5; Woolard & Leibbrandt, 2006:14).

An example of a South African repeated cross-sectional social survey is the General Household Survey (GHS) conducted by Statistics South Africa. The GHS is conducted annually (since 2002) among more or less 30 000 households, and collects information on a variety of subjects including education, health, the labour market, dwellings, access to services and facilities, transport, and quality of life (StatsSA, 2017a). Other well-known examples include the Labour Force Surveys⁹⁹ (LFS) and the IES (which are used in this thesis and are discussed in detail in section 5.4). These surveys provide information about the well-being of sub-groups at a specific point in time.

5.3 Longitudinal studies

5.3.1 Background

Longitudinal and regular studies are complementary as they both try to explain social change processes. However, whereas regular surveys provide information related to net changes at a macro level, longitudinal studies look at the various gross changes (or flows) at a micro level. Longitudinal studies are often initiated when regular studies identify trends that they cannot explain (Hakim, 2000:109).

⁹⁹ The LFS is technically a rotating panel, but due to compatibility challenges between sampling waves, it is treated mostly as a regular (cross-sectional) survey (Woolard & Leibbrandt, 2006:8).

The notion of what qualifies as a “long”¹⁰⁰ period of time is somewhat subjective and depends on various factors such as the subject matter, context and issues to be addressed. However, at the absolute minimum, a single follow-up after the first data collection is required.

Again relating the study type to the data structure (see section 5.5 below), longitudinal studies make use of longitudinal (or panel) data sets, which consist of a time series value for each cross-sectional member in the dataset. As these studies in essence compare data between periods, different designs exist for capturing longitudinal evidence, including:

- repeated cross-sectional studies (regular surveys);
- panel surveys; and
- retrospective studies.

(Woolard & Leibbrandt, 2006:14).

Using the broad definition, repeated cross-sectional studies technically falls under the category of longitudinal studies. However, as these are essentially the same as regular surveys (as discussed in section 5.2.1), the distinction with “true”¹⁰¹ longitudinal studies should be evident and will not be discussed further.

Retrospective studies also utilise a continuous time frame, but data is collected retrospectively using the whole life course of individuals. An example of a retrospective study is the UK 1980 Women and Employment Survey, which covered a sample of 5 588 women in Great Britain aged 16-59. The study’s main objectives were to establish the role of employment in women’s lives, and to establish how important a paid job was for women and how much time of their lives was spent in employment (UK Data Service, 2017). Although retrospective studies are usually cheaper to conduct, compared to panel surveys for example, they have various drawbacks including recall bias, respondents’ tolerance for the amount of data collected and misrepresentation issues (survivors bias and treatment of emigrants) (Woolard & Leibbrandt, 2006:16).

Given their complexities, panel surveys are discussed separately in section 5.3.2.

¹⁰⁰ Typical distinctions include employment studies (which could focus only on a couple of years), compared to medical/developmental studies (which could require data over multiple decades).

¹⁰¹ See 5.3.1 for a description of “true” longitudinal surveys.

5.3.2 Panel surveys

5.3.2.1 An overview of panel surveys

In classic panel surveys¹⁰² the same sampling unit is interviewed repeatedly over time. These surveys are indefinite as additions to the sampling unit are automatically added to the sample. Some examples of this include children born to members of a selected household, or new household members as a result of changes in the composition of the original household. A key feature of panel data is that the same cross-sectional unit (whether individuals, households, firms, countries, etc.) is followed over a certain time period. This feature enables panels to detect and establish the nature of change related to a sampling unit (Woolard & Leibbrandt, 2006:10-11, 15-17).

Classical panels differ from rotating panels¹⁰³ as the latter have a finite or fixed period. Information from households is collected over a fixed period, after which portions of the sample are dropped and replaced with new but comparable samples drawn from the current population. Woolard and Leibbrandt (2006:17) state that “some analysts consider that only panel surveys without rotating samples are true longitudinal surveys, while rotating panel surveys are not”.

Cohort surveys are another distinguishable form of a panel study and take generational replacement explicitly into account. A cohort is defined as “people within a geographically or otherwise delineated population who experienced the same significant life event within a given period of time”. In essence, one or more generations are followed over the course of their lives. Birth-to-Twenty (Bt20)¹⁰⁴ is an example of a South African cohort study, which followed 3 273 children (and their families) born during 1990 within the Johannesburg-Soweto metropolitan area for 20 years. Its aims included determining the impact of social-economic, social-political, demographic and nutritional transitions in South Africa in the lives of children (Wits, 2017; Woolard & Leibbrandt, 2006:15).

Panel data provides researchers the opportunity to better understand “dynamic” type concepts such as mobility, social change and changes in poverty (Woolard & Leibbrandt, 2006:8). These concepts receive further attention below. Design topics related to longitudinal studies (such as

¹⁰² Also referred to as “indefinite-life” panels, or a panel survey without rotating samples (Woolard & Leibbrandt, 2006:15-17).

¹⁰³ Also referred to as “revolving” panels.

¹⁰⁴ Also referred to as Mandela's Children, based on Nelson Mandela's release from prison in 1990 (Wits, 2017).

representativeness and attrition) are also discussed, while data related issues are addressed in section 5.6.

5.3.2.2 Mobility

Mobility is a generic concept related to movement or changes over time and as such can be applied to various fields of study. Mobility measures are regarded as “dynamic”, and should be used to supplement “static”¹⁰⁵ (traditional) measures (Shorrocks, 1978:376).

Methodological aspects regarding mobility include the fact that its analysis follows certain units through time, it can be applied to a variety of recipient units, it can be applied to various indicators within the field of study, and different time dimensions¹⁰⁶ can be analysed (Fields, 2001:106). It therefore focuses on who is getting ahead, who is falling behind, and what the reasons for these changes are.

Peoples’ economic mobility experiences are further linked to life course events that can have important economic consequences, for example, marriage and divorce, academic progression, career related movements (e.g. promotion or retrenchment) and retirement.

Terms such as economic mobility and income mobility are closely related. Fields (2001) suggests that income mobility is reserved for the generic concept while other specific aspects of income mobility can include the following:

- Time dependence: It looks at the extent to which past economic well-being influences (limits) present well-being.
- Positional movement: This measures an individual’s position in the income distribution. Various measurements can be used, for example, deciles, quintiles or ranks. It is a highly popular measure that is often utilised in income mobility studies.
- Share movement: This occurs when an individual’s share of the total income changes. In this sense people, often being relativists, differentiate between their absolute income changes and their income changes compared to those of other people.

¹⁰⁵ Typical economic examples of static measures are the various indices of inequality (e.g. income or wealth), corresponding to a particular point or period of time (Shorrocks, 1978:376).

¹⁰⁶ Time dimensions can, for example, compare a unit to some base year, or assess a unit’s position between multiple periods. It can also relate to inter- and intra-generational comparisons.

- Symmetric income movement: This measurement is interested in the magnitude of change in income¹⁰⁷, but not the direction of change. Given the non-directional focus, these calculations are often done using absolute values.
- Directional income movement: Here income gains and losses are treated separately. Particularly, how many people are experiencing income gains and losses; of what magnitude; and who the gainers and losers are.

5.3.2.3 Social change

Social change is linked to concepts such as socioeconomic mobility or socioeconomic dynamics. Whereas “economic mobility” is often gauged by indicators such as income, earnings or expenditure, “socioeconomic mobility” has a qualitative dimension such as indicators looking at an occupational or educational index (Fields, 2001:105; Woolard & Leibbrandt, 2006:10). Section 3.2 highlighted the fact that historically South Africa has had an extremely heterogeneous population, and that society is undergoing various political and social transformations. This makes it important for South African policy-makers to be able to determine emerging patterns of socioeconomic mobility and to analyse how policies are (not) shaping these patterns – something with which panel data analysis can assist.

5.3.2.4 Poverty dynamics

Poverty is difficult to define, given its implicit multidimensional nature including facets such as income, asset, service or social capital poverty (Gumede, 2014:286). As far as quantifying poverty is concerned, another difficult (and somewhat arbitrary) issue relates to the choice of a poverty line. For example, Finn, Leibbrandt and Ranchhod¹⁰⁸ (2014) chose the cost-of-basic-living poverty line method to calculate a poverty line for South Africa. Despite these challenges, panel data provides scope for detailed poverty analysis, for example, differentiating

¹⁰⁷ Also referred to as “income flux”.

¹⁰⁸ These authors calculated the poverty line to be R573 per person per month in real 2010 rands. Using a head count poverty ration (that is the proportion of the population living below the poverty line) they calculated a poverty rate of 54 per cent for 2010.

between structural¹⁰⁹ and transitory¹¹⁰ poverty. The concept of a household vulnerability profile was introduced in section 4.4.1 as it relates to a proactive poverty measurement system.

5.3.2.5 Representativeness and attrition

Longitudinal surveys are representative only of the entire population during the first survey round. The representativeness of subsequent rounds is diminished due to factors such as sample attrition, while rapid change within a country can also affect it (Woolard & Leibbrandt, 2006:6).

Attrition is caused when sampled units cannot be re-contacted and is thus calculated by comparing the number of successful interviews in one wave to those in preceding waves. Possible reasons for attrition include refusals, or individuals being non-contactable or deceased. (Chinhema, M., Brophy, T., Brown, M., Leibbrandt, M., Mlatsheni, C., & Woolard, I., eds. 2016:9-10).

The longer a panel study runs, the less representative the panel will become of the current population. As a result, the decision about whether to incorporate new selections in later rounds is likely to depend in part on the expected life span of the panel (SALDRU, 2015a).

However, the mere presence of attrition is not necessarily an indicator of attrition bias. Magruder and Natrass (2006:769) note various preliminary questions that need to be answered, including: does attrition exist in the study?; which categories of respondents are disproportionately affected?; as well as, whether it matters for the specific issue being analysed. The same authors researched attrition bias in the 2000/2004 Khayelitsha panel study and found that attrition is prevalent among women, shack-dwellers and people living in smaller households. The coefficients generated using restricted samples of non-attritors did not differ significantly from those generated by the entire sample. Therefore, attrition bias was rejected as a problem for this particular data set.

¹⁰⁹ Structural poverty is defined as individuals being trapped in poverty with no assets or other means to fashion a positive livelihood trajectory. They require welfare support, related to both human and social capital in order to be able to break the poverty trap (Woolard & Leibbrandt, 2006:11).

¹¹⁰ Transitory or temporary poverty refers to individuals who have suffered a short-term shock, but with the capacity and the assets to recover after an adjustment period. They require policies that facilitate access to short-term finance and insurance options to cope with the temporary poverty (Woolard & Leibbrandt, 2006:11).

5.3.2.6 Survey weights

As surveys are based on estimated values taken from a larger population, the use of weights becomes critically important. Chinhema et al. (2016:65) state that “it would be simply inappropriate to do unweighted analysis”. Different weights are utilised during different stages of the surveys and analysis and typical types of weights include the following:

- **Design weights:** Used during the initial design and first sampling wave. Due to various reasons (e.g. non-contact, refusals, etc.), not every household selected by the sampling design provides usable information. It is also possible that “missing” sampling units could be typically different (non-random) from those that responded. Thus by treating household non-response as random within primary sampling units (PSUs), those households that did respond within a low-response PSU will get a larger weight (NIDS, 2017b).
- **Calibrated (post-stratified) weights:** Although design weights go a long way to adjust for household non-response, the actual (realised) sample often still differs from the national population in systematic¹¹¹ ways. Households with pensioners could, for example, be overrepresented because they were more likely home when the survey teams visited the household. Post-stratification involves adjusting the weights of a survey so that the application of those weights makes the sample correspond with the population, for example, in terms of its distribution across provinces and demographic characteristics (age, gender and race) (Chinhema et al., 2016:61; Wittenberg, 2009:5).
- **Panel weights:** Used for panel data regression when the analysis restricts the sample to two specific (multiple) waves. Individuals (or households) who are successfully re-interviewed in subsequent waves of longitudinal studies are not necessarily a random subset of all the individuals’ (or households’) surveys during the first wave. Thus, similar to the function of post-stratified weights, panel weights are intended to correct for attrition bias (Chinhema et al., 2016:62).

5.3.2.7 Panel conditioning

Another unique challenge related to panel studies is panel conditioning, which happens when panel members’ responses are affected when they are being interviewed repeatedly. It is seen

¹¹¹ Research focusing on the NIDS survey specifically indicates that, for example, it includes 35 per cent too few Indians and 17 per cent too few whites than is required. Certain age groups are also prone to be overrepresented (in particular the elderly), while young adults (25 to 29 year olds in particular) are significantly underrepresented (Wittenburg, 2009:5).

as the reactive effect that prior interviews have on a respondent's current responses, due to various possible factors, including the following:

- Prior interviews may inform respondents and may also cause them to reflect on issues;
- Quality of reports may improve due to respondents being more aware of what is expected of them;
- Quality of reports may worsen due to respondents becoming bored or less-diligent¹¹²; and
- Changes in the attitudes¹¹³ of interviewers.

(Woolard & Leibbrandt, 2006:24-25).

Panel conditioning can cause bias, which can affect both the estimates and the level of change of variables. To guard against this, panel surveys should adhere to high quality standards and have a proper set of rules to guide interviewers during each wave of sampling (Woolard & Leibbrandt, 2006).

Having looked at an overview of research designs, it should be evident that different survey methods all have their strengths and weaknesses. By utilising both traditional (cross-sectional) and longitudinal survey methods this study aims to mitigate some of these challenges. However, given the nature of statistical sampling the results remain, at best, estimates of the larger population realities (see also limitations as discussed in section 5.6 below).

The remaining parts of this chapter focus on the methodology of sourcing and analysing the data used in the study.

5.4 Income and Expenditure Survey and Living Conditions Survey

5.4.1 Background

The IES and the LCS are both household surveys conducted by Statistics South Africa. Their sampling coverage is based on the information obtained from the rotating panel of the LFS. The main purpose of these household expenditure surveys is to determine the detailed income

¹¹² For example, respondents may learn that responding to certain questions may lead to additional questioning (which they would rather choose to avoid).

¹¹³ Interviewers might be less formal or diligent during follow-up meetings than during the original questioning session.

and expenditure patterns of households. This subsequently forms the basis for the determination of the weights¹¹⁴ for the basket of consumer goods and services used for the calculation of the Consumer Price Index.

The survey is repeated roughly every five¹¹⁵ years by Statistics South Africa on a rotating basis between the IES and the LCS. However, in addition to the main purpose of updating household consumption expenditure patterns to inform the updating of the basket of goods and services for the consumer price index (CPI), the LCS also includes a strong focus on poverty levels and patterns (StatsSA, 2017d:1). Existing IESs¹¹⁶ are those for 1995, 2000, 2005/2006 and 2010/2011, while the LCS was conducted in 2008/09 and 2014/15 (StatsSA, 2012:4; StatsSA, 2014:6; StatsSA, 2017d:2).

Both are stratified¹¹⁷ and representative samples of households in South Africa. Although the main focus of the surveys is on household expenditure, additional information related to, among others, household and individual income and saving, is also captured. These features make these surveys highly useful sources of information for studies intended to utilise representative household level data. Yu (2008:3) also mentions the “absence of other¹¹⁸ detailed datasets containing income and expenditure data”.

As is the case with most surveys, questions change over time as survey methodologies are updated and aligned to international best practices (Bosch, 2015:6). Two major methodological changes have occurred since the IES 2005/06 survey.

Firstly, the method of capturing data changed from only a recall method (households were given a questionnaire and were required to recall income and expenditure related to the month or the 12 months prior to the interview) to also include a diary method (using a diary to record the household’s daily acquisitions). This meant that during the IES 2005/06 survey, households

¹¹⁴ “The weights of a specific product/group are calculated by dividing the total amount spent by all households in South Africa on the specific product/group by the total amount spent on all goods and services by all households” (StatsSa, 2002:87).

¹¹⁵ During a presentation to the Department of Economics (Unisa) in February 2018, Mr Werner Ruch (StatsSA) confirmed that StatsSA was planning to keep the five-year rotating survey method, but that this was subject to securing funding for the surveys. Therefore, if sufficient funding is available, the next IES release should be expected around 2019/2020.

¹¹⁶ Earlier versions of the survey are available (e.g. the 1985 Income and Expenditure Survey); however, they are not comparable to the more recent versions due to, among other reasons, differences in coverage (Yu, 2008:3).

¹¹⁷ For example, by race, province and urban versus rural setting (Yu, 2008:4).

¹¹⁸ Examples of other StatsSA surveys include the Census, LFS and GHS. However, Yu (2008:3) points out various problems related to using the above for detailed analysis related to income and expenditure (or for that matter saving), including weak reporting and little detail related to income related questions. This also relates to the primary aim of the surveys, not necessarily relating to financial type data.

had to complete the main questionnaire (i.e. recall method) and also keep a weekly diary. However, the diary method is not perfect. Positives, such as limiting recall bias and respondents being able to complete surveys at more comfortable times, is traded off against negatives such as respondent fatigue and issues related to literacy (for a full list of pros/cons see Yu, 2008:9). Based on these factors, the diary-keeping period was reduced from one month to two weeks for the IES 2010/2011. StatsSA (2014:6) notes that:

After extensive testing, the reduced diary-keeping showed an increase in the number of items reported in the weekly diary and had a noticeable impact on reducing respondent fatigue (meaning households were less likely to drop out during data collection).

Secondly, the classification of expenditure items changed from the Standard Trade Classification, to the Classification of Individual Consumption According to Purpose (COICOP). COICOP is a reference classification published by the United Nations Statistics Division to divide individual¹¹⁹ consumption expenditures by purpose.

Other changes that were introduced during the IES 2005/2006 survey relate to sampling design, questionnaire structure, number of visits to households, as well as some changes in the categorisation of income and expenditure items (Yu, 2008:3). This requires caution because the different surveys are not directly comparable and reiterates the above mentioned warning by Woolard and Leibbrandt (2006) that regular type studies remain inappropriate for studying developmental patterns within cohorts and cannot be used to determine causal order. Their cross-sectional properties will therefore be used to provide detailed, time-bound (“snapshot”) overviews. Table 5.1 provides a summary of the methodologies utilised during the IES 2005/2006 and the LCS 2014/2015 surveys.

¹¹⁹ Individuals are further divided into three “institutional sectors”, namely households, non-profit institutions serving households and general government. Only households were included in the 2005/06 samples.

Table 5.1: Summary of IES 2005/2006 and LCS 2014/2015 methodologies

Distinguishing features	IES 2005/2006	LCS 2014/2015
Sample size households (Dwelling Units ¹²⁰)	21 144 (24 000)	23 380 (30 818)
Methodology	Diary and recall	Diary and recall
Household questionnaire	Five modules	Four modules
Diaries	Four weekly diaries	Two weekly diaries
Data collection period	September 2005 to August 2006	October 2014 to October 2015
Visits per household	Six	Four
Classification of expenditure items	COICOP	COICOP

Source: StatsSA, 2012:1; StatsSA, 2014:7, StatsSA, 2017d:2

As far as the information gathered goes, table 5.2 provides an overview of the main categories according to the COICOP classification. There are 11 main groups in the COICOP, and only the items found in group 1 (CPI consumption) are included in the compilation of CPI.

Group 5 (savings) and group 3 (income) are of special interest to this study and are discussed in more detail in the next section.

¹²⁰ Dwelling unit is defined as a “structure or part of a structure or group of structures occupied or meant to be occupied by one or more than one household” (StatsSA, 2012:31).

Table 5.2: Main categories in the COICOP classification

Group 1	CPI consumption
(a)	Food and non-alcoholic beverages
(b)	Alcoholic beverages, tobacco and narcotics
(c)	Clothing and footwear
(d)	Housing, water, electricity, gas and other fuels
(e)	Furnishings, household equipment and routine maintenance of the house
(f)	Health
(g)	Transport
(h)	Communication
(i)	Recreation and culture
(j)	Education
(k)	Restaurants and hotels
(l)	Miscellaneous goods and services
(m)	Other unclassified expenditure
Group 2	In-kind consumption
Group 3	Income
Group 4	In-kind income
Group 5	Savings
Group 6	Taxes
Group 7	Transfers to others
Group 8	Debt
Group 9	Loss
Group 10	Not CPI consumption
Group 11	Products not in income

Source: Yu (2008)

5.4.2 Methodology and data

The IES and LCS data is sourced directly from Statistics South Africa. The dataset is analysed using descriptive analysis to provide insight into household saving behaviour. However, as these surveys focus on flow data, only the income statement approach is (can be) utilised to analyse the data.

Bosch (2015) and Yu (2008) used IES data, including comparisons between the various StatsSA publications, while Bosch (2015) analysed saving(s) specifically. The description and methodologies used by these authors provide a good basis for the further analysis of the data.

It is important to note that between the IES 2005/2006 and LCS 2014/2015 surveys, various items were either updated, newly included or left out. This means that there is great, but not perfect, similarity¹²¹ between the two surveys. This is especially evident for the household income items, where various differences occur. However, very few differences between saving items are present. Household income for the IES and LCS is calculated by using the variables as set out in table 5.3.

Table 5.3: IES and LCS: Household income variables

Variable name	COICOP code	IES	LCS
Household salaries and wages	50110000	x	x
Household self-employment and business	50120000	x	x
Income from subsistence farming	50121000		x
Income from letting of fixed property	50210000	x	x
Royalties	50220000	x	x
Interest received	50230000	x	x
Dividends of listed companies	50241000	x	x
Dividends of unlisted companies	50242000	x	x
Unit trust income	50243000		x
Income from share trading	50243200		x
Other dividends	50250000	x	
Pension from previous employment	50310000	x	x
Annuities from own investment	50320000	x	x
Old age pensions	50331000	x	x
Disability grants	50332000	x	x
Child support grants	50332100		x
Care dependency grants	50333100		x

¹²¹ As mentioned in section 5.4, StatsSA runs the IESs and LCSs on a complimentary rotating basis. The sampling coverages for both are also based on the same information obtained from the rotating panel of the Labour Force Survey (LFS).

Foster care grants	50333200		x
Family and other allowances	50333000	x	
Grant-in-aid	50333300		x
Other assistance from government (social relief)	50333500		x
Income from other funds (unemployment insurance)	50333600		x
Workmen's compensation funds	50334000	x	
Alimony, palimony and other allowances	50410000	x	x
Other income from individuals	50420000	x	x
Hobbies	50510100	x	
Side lines and part time activities	50510200	x	
Sale of vehicles, property, etc.	50510300	x	
Payments received from boarders	50510400	x	
Goods and services received by virtue of occupation*	50510500	x	
Claims	50510600	x	
Stokvel	50510700	x	
Non-refundable bursaries*	50510800	x	
Benefits, donations and gifts	50510900	x	
Cash	50511000	x	
Value of food received	50511100	x	
Value of housing*	50511200	x	
Value of clothing	50511300	x	
Value of transport*	50511400	x	
Value of other benefits, donations, gifts, etc.	50511500	x	
Lobola or dowry received	50511600	x	
Income from gambling	50511700	x	
Tax refunds received	50511800	x	
Income not elsewhere specified	50511900	x	
Gratuities and other lump sum payments	50512000	x	
Total			

*Classified as products not in income (group 11)

Source: StatsSA; compiled by author

Table 5.4 indicates the extensive list of saving variables provided by StatsSA. The calculation of all (total) saving is done by adding all the variables. However, *withdrawals from savings* (5272000) is subtracted, as this is a dissaving.

Table 5.4: All saving questions in IES 2005/2006 and LCS 2014/2015

Variable name	COICOP code	IES	LCS
Improvements, additions and alterations	52110000	x	x
Services for improvements, additions and alterations	52122000	x	x
Security structures (including fences, electronic gates)	52130000	x	x
Other building materials	52140000	x	x
Labour and material for improvements, additions and alterations	52150000	x	x
Cost of other dwellings	52210000	x	x
Capital payments (including deposit)	52220000	x	x
Monthly capital payments	52230000	x	x
Other payments such as transfer duty and bond registration	52240000	x	x
Purchase of timeshare	52251000	x	x
Levy on timeshare	52252000	x	x
Life and endowment policies	52310000	x	x
Life insurance covering mortgage debt	52320000	x	x
Repayment on loans and overdrafts	52410000	x	
Contribution to pension, provident and annuity funds	52421000	x	x
Employer contribution to pension, provident and annuity funds	52422000	x	x
Contributions to a stokvel	52500000	x	x
Listed company – shares	52610000	x	x
Unlisted company – shares	52620000	x	x
Unit trusts	52630000	x	x
Investment plans	52640000	x	
Offshore	52650000	x	x
Other investments	52660000	x	x
Deposits into savings	52710000	x	x
Withdrawals from savings	52720000	(x)	(x)
Total			

Source: StatsSA; compiled by author

Voluntary saving is calculated by adding the relevant saving variables that conform to the definition, as provided in section 1.5. Table 5.5 provides the list of variables. Also important to note is that two of the variables are subtracted, namely *employer contribution to pension, provident and annuity funds* and *withdrawals from savings*. A brief description is provided below of the reasons for this and also of some of the other variables, where additional clarity is deemed necessary to explain why it was included or not.

Residential property and improvements provided some definitional difficulties as it includes a vast array of saving items. Ultimately two items were eliminated from the list, namely the *cost of other dwellings* (the description seems vague as to the purpose of these structures), as well

as *other payments such as transfer duties and costs* (although necessary for legal purposes, this is seen as a once off cost not truly reflecting individuals' saving habits).

The *purchase (and levy on) timeshare* variables were excluded from the calculation of voluntary saving. An inspection of the data indicated that these two variables were negligibly small in terms of occurrence and value. Definitional difficulties (including restricted ownership) typically associated with timeshare schemes also lead to its exclusion.

Table 5.5: Voluntary saving calculations: IES 2005/2006 and LCS 2014/2015

Variable name	COICOP code	IES	LCS
Improvements, additions and alterations	52110000	x	x
Services for improvements, additions and alterations	52122000	x	x
Security structures	52130000	x	x
Building materials	52140000	x	x
Labour and material for improvements, additions and alterations	52150000	x	x
Capital payments (including deposit)	52220000	x	x
Monthly capital payments	52230000	x	x
Life and endowment policies	52310000	x	x
Life insurance covering mortgage debt	52320000	x	x
Repayment on loans and overdrafts	52410000	x	
Contribution to pension, provident and annuity funds	52421000	x	x
Employer contribution to pension, provident and annuity funds	52422000	(x)	(x)
Contributions to a stokvel	52500000	x	x
Listed company – shares	52610000	x	x
Unlisted company – shares	52620000	x	x
Unit trusts	52630000	x	x
Investment plans	52640000	x	
Offshore	52650000	x	x
Other investments	52660000	x	x
Deposits into savings	52710000	x	x
Withdrawals from savings	52720000	(x)	(x)
Total			

Source: StatsSA; compiled by author

Pension, provident and annuity funds is an important variable due to its meaningful definitional impact (i.e. clearly differentiating, for example, between occupational saving and voluntary saving) as well as its relative large (expected) size. For the purpose of this study only the residual value (or difference) is used, after *employer contribution to pension, provident and annuity funds* is subtracted from the *contribution to pension, provident and annuity funds*.

Net bank savings is calculated as the difference between *deposits into savings* and *withdrawals from savings*.

In order to facilitate analysis (and to provide a less cluttered view), voluntary saving is divided into eight categories for the IES, and seven categories for the LCS. The reason for there being only seven categories in the LCS is due to data not being made available for the *repayment of loans and overdrafts*¹²² variable. Table 5.6 provides the categories and list of variables in each category.

Table 5.6: Voluntary saving categories: IES 2005/2006 and LCS 2014/2015

Category	Variable name	COICOP code	IES	LCS
Residential property (and improvements)	Improvements, additions and alterations	52110000	x	x
	Services for improvements, additions and alterations	52122000	x	x
	Security structures	52130000	x	x
	Building materials	52140000	x	x
	Labour and material for improvements, additions and alterations	52150000	x	x
	Capital payments (including deposit)	52220000	x	x
	Monthly capital payments	52230000	x	x
Life insurance and endowments	Life and endowment policies	52310000	x	x
	Life insurance covering mortgage debt	52320000	x	x
Repayment on loans and overdrafts	Repayment on loans and overdrafts	52410000	x	
Pension, provident and annuity funds	Contribution to pension, provident and annuity funds	52421000	x	x
	Employer contribution to pension, provident and annuity funds	52422000	(x)	(x)
Stokvels	Contributions to a stokvel	52500000	x	x
Shares	Listed company – shares	52610000	x	x
	Unlisted company – shares	52620000	x	x
Other investments	Unit trusts	52630000	x	x
	Investment plans	52640000	x	
	Offshore	52650000	x	x
	Other investments	52660000	x	x
	Deposits into savings	52710000	x	x
	Withdrawals from savings	52720000	(x)	(x)

Source: StatsSA; compiled by author

¹²² The author raised this matter with StatsSA in various written (e-mail) requests; however, no reason was provided for the exclusion of the line item: repayment of loans and overdrafts. It is unfortunate, as this item represented 8.8 per cent of total voluntary saving in the IES 2005/06 survey.

This section concludes with some brief notes clarifying various important issues that are relevant to the analysis of both the IES and LCS data in general, which will be encountered in chapter 6.

Descriptive statistics are provided for the income, saving and voluntary saving variables for both the IES and LCS data. Behavioural insights are obtained from cross-tabulations with various variables including province, settlement type, race, gender, household size and income (poverty lines). The breakdown of categories is determined (or limited) by the data itself. However, two of the categories, namely household size and income, are categorised by the author and therefore some brief explanatory notes are provided.

Household size is divided into five sub-categories based on the number of individuals who indicated that they are part of the same household. The sub-categories are as follows: one individual; two individuals; 3 to 5 individuals; 6 to 10 individuals; and 11 or more individuals who form part of the same household.

Income is categorised according to poverty lines¹²³. Different institutions calculate such lines for South Africa including NIDS and StatsSA, and both of these sets of lines are used in this study. As far as the IES and LCS data is concerned, the inflation adjusted poverty lines of StatsSA are utilised (StatsSA, 2017c:8).

StatsSA employs the cost-of-basic-needs approach to produce three poverty lines, namely the food poverty line (FPL), the lower-bound poverty line, and the upper-bound poverty line. The FPL is defined as “the rand value below which individuals are unable to purchase or consume enough food to supply them with the minimum per-capita-per-day energy requirement for adequate health”. The lower-bound poverty line includes individuals who do not have sufficient resources to purchase both essential food and non-food components. Upper-bound poverty line individuals can purchase both adequate levels of food and non-food items. (StatsSA, 2017c:7).

Inspection of the data reveals that the difference between the food and lower-bound poverty lines are often not significant and will thus result in minimal insight for analysis purposes. Therefore, only one of these lines (in this case the FPL) is used in this section, and is referred

¹²³ A challenge is to decide on income brackets that will be used and is rather subjective. Using poverty lines provides a more scientific approach and is often utilised in similar studies related to household finances (see for instance Finn, Leibbrandt & Levinson, 2012).

to as the lower poverty line. This should provide a more logical distinction. It also conforms to the terminology used for the analysis of the NIDS data (discussed in section 5.5.2.4).

Based on the above, the study proceeds by setting up four income (or poverty related) brackets. These include: below the lower poverty line (LPL); between the LPL and the upper poverty line (UPL); between the UPL and two times the UPL (2xUPL); and above 2xUPL (this is similar to the procedure used by Finn, Leibbrandt and Levinsohn, 2012). Table 5.7 provides the values of the brackets used for analysis of the IES and LCS data.

Table 5.7: IES and LCS: Poverty lines

Annual brackets	Below LPL	Between LPL and UPL	Between UPL and 2x UPL	Above 2x UPL
IES 2005/06	R0 - R2,628	R2,629 - R6,900	R6,901 - R13,800	R13,801+
LCS 2014/15	R0 - R5,004	R5,005 - R11,304	R11,305 - R22,608	R22,609+

Source: StatsSA, 2017c:8; calculations by author

5.5 National Income Dynamics Study

5.5.1 Background

The NIDS (2019) is a national representative longitudinal panel study for South Africa. It is a first for the country and was launched by the Presidency of South Africa in 2005 to provide insight into social dynamics and transformation in post-apartheid South Africa. The SALDRU, based in the School of Economics at the University of Cape Town, is responsible for the implementation of the survey.

The first wave of sampling took place in 2008, covering a nationally representative sample of over 28 226 individuals from approximately 7 300 households. In total there were five sampling waves between 2008 and 2017 (see table 5.8).

Table 5.8: NIDS interview dates

	Start	End
Wave 1	February 2008	December 2008
Wave 2	May 2010	September 2011
Wave 3	May 2012	December 2012
Wave 4	September 2014	August 2015
Wave 5	February 2017	December 2017

Source: Brophy, Branson, Daniels, Leibbrandt, Mlatsheni, and Woolard, 2018:3

In order to identify the first sample members, a list of roughly 400 clusters (or spatial units) was selected based on the 2003 population estimates of Statistics SA. From these the survey team constructed an up-to-date list of households within each of the sampled clusters. For wave 1, a total of 28 226 respondents were resident in these households and they became the continuing sample members (CSMs) of the study. This is an important fact as NIDS is essentially a survey of CSMs; that is, all persons who were resident in the original (wave 1) selected households plus any new babies born¹²⁴ to CSM females after wave 1.

A second important category is temporary sample members (TSMs) defined as “a person who is not a CSM but is co-resident with a CSM at the time of the interview”. This implies that TSMs are relevant only from wave 2 onwards.

Household membership is defined as individuals “spending more than 15 days in the last 12 months at the household and sharing food and resources” (Brown, Daniels, De Villiers, Leibbrandt, & Woolard, eds., 2012:3).

As explained above, attrition is caused when individuals cannot be contacted between sampling waves, which leads to a decrease in the (original) sample size and representativeness of the sample over time. This also means that it could become necessary to refresh (top-up) the panel once attrition is severe enough to start causing attrition bias. Due to “attrition of white, Indian/Asian and high income respondents”, a top-up sample was added during wave 5 of the NIDS “to maintain the representativeness of the sample”. In total, 2 775 CSMs were added (Brophy et al., 2018:1). Although this is perfectly sound according to theoretical practices, it did have a meaningful impact on the results of this study, as will be highlighted in chapter 6.

¹²⁴ This also includes children adopted by CSM mothers.

Other life events (e.g. deaths and births) are also recorded and have a meaningful impact on the number of respondents. A summary of the number of CSMs, TSMs and households across the five sampling waves, also including life events, is presented in table 5.9.

Table 5.9: NIDS: Number of CSMs, TSMs and households across waves

	Continuing sample members	Temporary sample members	Households
Wave 1	28 226	N/A	7 296
Wave 2 (between waves 1&2)	28 555 (deaths 876, births 1 205)	5 739	9 125
Wave 3 (between waves 2&3)	29 011 (deaths 613, births 1 069)	8 542	10 218
Wave 4 (between waves 3&4)	29 822 (deaths 745, births 1 556)	12 550	11 889
Wave 5 (between waves 4&5)	33 206 (deaths 606, births 1 215) Original: 30 431 Top-up: 2 775	13 849	13 719

Source: Brophy et al., 2018:10, 21; compiled by author

With regard to the data collecting process, from wave 2 onwards, CAPI software is used. Four types of questionnaires are used, consisting of the following:

- Household questionnaire: One per household, completed by the oldest woman.
- Adult questionnaire: Completed by all CSMs present as well as household resident members who are aged 15 years and older.
- Proxy questionnaire: Completed on behalf of an absent qualifying individual, by another present resident adult. Also in cases where a CSM has moved out of scope¹²⁵.
- Child questionnaire: Collects information about all CSMs and household residents younger than 15 years. Completed by the caregiver of the child. (Chinhema et al., 2016:26).

Questions asked in the various interviews cover a broad spectrum of research fields, ranging from demographics and labour market participation to education, health, social cohesion and

¹²⁵ Out of scope: A person residing outside of the sampling frame and who has a zero probability of being interviewed. Examples include people living in institutions (such as hospitals, prisons and boarding schools) and those who move outside of South Africa (Brophy et al., 2018:17).

personal ownership and debt. Sections F (various income sources) and G (personal income and debt) from the Adult Questionnaire and section F2 (household net assets) in the Household Questionnaire, are of particular importance to this study as they are used to calculate household saving (see table 5.10 for a full list of the contents of the Adult and Household Questionnaires).

Table 5.10: NIDS: Contents of Adult (15+) and Household questionnaires

Adult (15+) Questionnaire

Section B: Demographics

Section C1: Children ever born

Section C2: Birth history

Section D: Parents' education, living arrangements and vital status

Section E: Labour market participation

Section F1: Individual income from non-employment sources

Section F2: Grants received on your behalf

Section F3: Contributions received

Section F4: Contributions given

Section G: Personal ownership and debt

Section H: Education

Section J: Health

Section K: Emotional health

Section L: Household decision-making

Section M: Well-being and social cohesion

Section N: Measurements

Section R: Alternative contact information

Section S: Interviewer evaluation

Household Questionnaire

Section B: Household roster

Section C: Mortality history

Section D: Household living standards

Section E1: Food spending and consumption
Section E2: Non-food spending and consumption
Section F1: Durable goods
Section F2: Household net assets *
Section G: Negative events
Section H: Agriculture
Section J: Interviewer evaluation

** Household net assets forms part of the wealth module, which is included only in waves 2, 4 and 5.
Source: NIDS, 2017*

Derived variables are made available by the NIDS team. These include variables that are finalised after the fieldwork is completed (through post-coding exercises) or variables that are the result of a combination of other variables (Chinhema et al., 2016:38). Important derived variables include those for income, expenditure, assets and debts as these variables form the basis from which saving is calculated. These derived variables are discussed next.

Income

Household income in the NIDS surveys reflects regular income received by households on a monthly basis. It is derived from variables found in the Adult, Proxy and Household datasets and provides an after-tax value. Table 5.11 provides details of the various household and individual income items.

Table 5.11: NIDS: Components of household income

Household level variable	Individual level variable
Labour market income	Main and second job Casual wages Self-employment income 13th cheque Bonus payment Profit share “Help friends” income Extra piece-rate income
Government income: grants and other	State old age pension Disability grant Child support grant Foster care grant Care dependency grant Unemployment Insurance Fund Workmen’s compensation
Investment income	Interest and dividend income Rental income
Remittance income	Remittances received
Subsistence agriculture income	Income for subsistence agriculture Value of own production consumed
N/A (not included on household level)	Private pensions and annuities

Source: Chinhema et al., 2016:42

Expenditure

Expenditure is available only in the Household Questionnaire and focuses on the total household expenses during the last 30 days. It includes three main categories, namely food, non-food and rental expenditure (see table 5.12 for a list of the main expenditure categories).

Table 5.12: NIDS: Components of household expenditure

Household level variable
Total food expenditure
Total non-food expenditure
Rental expenditure
Imputed rent for owner-occupied housing

Source: Chinhema et al., 2016:49

An estimate for *imputed rental income from owner-occupied housing* is included to “avoid underestimating household welfare”. This imputed rent variable features in both the total income and expenditure values in order to “avoid selecting one measure of welfare (for example income) over another (expenditure)” (Chinhema et al., 2016:48). This item seems very

similar to the *Owners' equivalent rent* variable included in the estimation of the CPI by StatsSA. However, as this item includes various assumptions and not actual data, *imputed rent for owner-occupied housing* is not included in the calculation of any of the voluntary household figures in this study. This also conforms to the methodology used in the literature (see for instance Finn and Leibbrandt, 2013:7; Leibbrandt, Woolard, Finn, & Argent, 2010).

Wealth (assets and debts)

Wealth is a speciality theme included during waves 2, 4 and 5 of the NIDS survey, in both the Household and Adult Questionnaires. Wealth is particularly difficult to measure in surveys due to various factors including social sensitivity, a high cognitive burden due to the complex calculations required and recall bias. This means that these questions often have high non-response rates (Daniels, Finn & Musudwa, 2012:4). In order to address some of these associate challenges, NIDS utilises a two prong approach to estimate wealth, namely a direct (“one shot”) and a derived method.

The direct method (for both individuals and households) asks the respondents to estimate their net worth, which can be either positive, zero or negative. If respondents are unable to provide an answer, the questionnaire guides them into a series of unfolding brackets that identifies a plausible range of answers.

The indirect method constructs an estimated (derived) net worth variable as the difference between total assets and total liabilities (Daniels et al, 2012:4-7). Tables 5.13 and 5.14 list the components of total household assets and debt (liabilities) respectively.

Table 5.13: NIDS: Components of household assets

Asset category	Household level variable	Individual level variable
Real estate	Value of house Value of other property	Value of house Value of other property
Business	Business equity left	Business equity left
Vehicle	Value of vehicles	Value of vehicles
Financial	Bank account Stocks	Bank account Stocks
Superannuation	Pension/Retirement annuity	Pension/Retirement annuity
Livestock	Livestock	N/A
Possessions	Possessions	Possessions

Source: Chinhema et al., 2016:53-54

Table 5.14: NIDS: Components of household debts

Debt category	Household level variable	Individual level variable
Real estate	Bond owing on main house	Home loans
	Bonds owing on other	Bonds owing on other
Business	Business equity debt	Business equity debt
Vehicles	Vehicle finance	Vehicle finance
Financial	Loans	Loans

Source: Chinhema et al., 2016:53-54

5.5.2 Methodology and data

Data from all five waves of the NIDS is used for this analysis. Cleaning the dataset means potential missing values and outliers are taken into account, as well as being cognisance of panel attrition by applying relevant weights to variables. For this study, the post-stratified weights (wj_wgt) are used (see section 5.3.2.6). This creates (as close as possible) a balanced panel, meaning that data is available for all variables across households (Stata - j) and waves (Stata - i).

There is both a flow and a stock dimension included, which enable this study to provide both an income statement and balance sheet (wealth) view of saving(s).

5.5.2.1 Income statement approach

Using the income statement approach, saving is calculated as the difference between income and expenditure. In order to be able to do this, an income statement is calculated for each wave. However, as the focus is on voluntary saving, only the components of income and expenditure that align to the definition of voluntary household saving (see section 1.5) are utilised. Table 5.15 shows the methodology for calculating voluntary saving, using the NIDS data.

Table 5.15: NIDS: Calculation of voluntary households' saving, waves 1 to 5

Variable	NIDS code*
Labour market income	wX_hhwage
Investment income	wX_hhinvest
Remittance income	wX_hhremitt
Subsistence agriculture income	wX_hhagric
Less	
Total food expenditure	wX_h_expf
Total non-food expenditure	wX_h_expnf
Rental expenditure	wX_h_rentexpend
Total voluntary household saving	

* The prefix "wX" refers to the wave number, e.g. w2 refers to wave 2

Source: SALDRU; compiled by author

5.5.2.2 Balance sheet approach

Looking at savings from a balance sheet (wealth) perspective, derived variables for household assets and debts are available. As mentioned in section 5.4.2, the data allows for either a direct or derived method of calculating wealth variables. This study follows the derived method to estimate voluntary household savings. The reason for this is that the derived method has been shown to produce superior results, compared to the difficulty of recalling or accurately estimating the market value of assets, based on a direct (one shot) measurement (see Brophy et al., 2018:58 and 62).

The constituents for the calculation are selected based on the definition of voluntary household saving (see section 1.5). The methodology for calculating voluntary savings (net worth) is provided in table 5.16. The assets and liabilities as shown in the table are a part of derived variables provided by SALDRU.

A household's net worth is calculated as household assets less household liabilities. Looking in more detail at the three assets and three liabilities presented in table 5.16, net business equity is defined as "the net value of all business shares owned by all household members". Net real estate equity is "the net value of all properties owned by the household" and includes not only the principle home, but also items such as holiday homes and other property. Net financial wealth includes items such as interest-bearing assets held in banks and other institutions, stocks and mutual funds, life insurance funds, trust funds and collectibles (Brophy et al., 2018:58).

Table 5.16: NIDS: Calculation of voluntary households' net worth, waves 2, 4 and 5

Variable	NIDS code
Assets	
Real estate	wX_re_ass
Business	wX_b_ass
Financial	wX_f_ass
Liabilities	
Real estate	wX_re_deb
Business	wX_b_deb
Financial	wX_f_deb
Total voluntary net worth	

Source: SALDRU; compiled by author

It is important to note that for the calculation of total voluntary net worth, the following items are excluded: vehicle, livestock, possessions and superannuation assets (See tables 5.13 and 5.17). Reasons for these exclusions are now briefly discussed.

The exclusion of the first three asset types (vehicle, livestock and possessions) is justified because they do not conform to this study's definition of voluntary saving: that is, "non-financial items are restricted to fixed domestic property" (see section 1.5).

Ideally one would want to include the voluntary component of superannuation assets, including voluntary contributions to pension and other retirement funds (similar to the method utilised for calculating the *Pension, provident and annuity funds* item in the IES). Unfortunately, the NIDS data does not differentiate between employer and employee contributions or to additional voluntary contributions made by employees, therefore it was decided to exclude this item. This implies that assets will be underestimated. However, as the focus of this study is on voluntary saving, it does not make sense to include mandatory type items (or parts of items) into the analysis. This unfortunately creates a "lesser of two evils" situation.

Chapter 5 concludes with remarks relevant to the analysis of the NIDS data in general, clarifying various important issues to be encountered during chapter 6.

5.5.2.3 Age categories

Similar to the IES data, age cohorts are constructed according to seven age categories, based on literature published by StatsSA. These categories are: 0 to 17; 18 to 24; 25 to 34; 35 to 44; 45 to 54; 55 to 64; and older than 65 (StatsSA, 2017c: 60). The age of the resident head is used as a proxy for the household's "age" in all instances.

5.5.2.4 Unique household identifiers

In order to perform a mobility analysis, some unique identifier needs to be attached to variables, which can be linked between survey waves. It is evident that the dynamics of households change over time, therefore the household identifier (hhid) variable, is not a unique identifier. To overcome this problem, the resident head of the household is used as a proxy for the household. It is accepted that this is not a perfect proxy as various factors (including attrition and death) of resident heads could affect the dynamics within a household.

5.5.2.5 Quantile analysis

Quantile analysis forms an important part of the results presented throughout section 6.4, and therefore a brief overview is necessary. Falling within the realm of summary statistics, quantile analysis forms an important companion to other well-known measures such as the arithmetic mean and standard deviation. To find quantiles, the position of observations within a sorted list of data is used. For example, the p -quantile splits a distribution into two parts such that the first part contains $p \times 100$ per cent of the data and the second part contains $(1-p) \times 100$ per cent. The values of the data are of interest only insofar as they determine the position of observations within a sorted list. The dispersion of values, or, for example, if some values are much higher or lower than others, is irrelevant. Quantiles are therefore very robust against outliers (Kohler & Kreuter, 2012:174-176). Outliers are expected when analysing household survey data, as is also clearly the case with the data used in this study (as highlighted on various occasions in chapter 6).

This study utilises five quantiles, called quintiles, thus dividing the data into five equally sized categories. This is similar to the methodology utilised by other researchers using NIDS data (see for instance Finn, Leibbrandt, & Levinsohn, 2012). Note that, although this is a trusted method of analysing results, quintile analysis is limited in as far as it provides a view of relative movements between categories. For absolute movement analysis, one has to make some assumptions about actual income levels or brackets, as discussed next.

5.5.2.6 Poverty lines

Similar to the approach adopted for the IES and LCS (see section 5.4.2), income is again categorised according to poverty lines for the NIDS analysis. It is done for wave 2¹²⁶ only, since this wave included both income statement and balance sheet data.

Four brackets are created, namely: below the LPL; between the LPL and the UPL; between the UPL and two times the UPL (2xUPL); and above two times the upper poverty line (above 2xUPL). These values relate to 2010 poverty line estimates, released by SALDRU (Budlender, Leibbrandt & Woolard, 2015:35). Table 5.17 provides the values for the various brackets. This is applied in sections 6.4.1.4 and 6.4.2.4.

Table 5.17: NIDS: Poverty lines

Annual brackets	Below LPL	Between LPL and UPL	Between UPL and 2x UPL	Above 2x UPL
Wave 2 (2010)	R0 - R6,132	R6,133 - R11,988	R11,989 - R23,976	R23,977+

Source: Budlender et al., 2015:35; calculations by author

Various methodological differences exist between the poverty line estimates of StatsSA and SALDRU. Closer inspection of similar years indicates that SALDRU lines are in general higher in rand terms. However, as far as this study is concerned, it makes sense to use the StatsSA data and lines together as well as the NIDS (SALDRU) data and lines.

5.6 Conclusion

The methodology for obtaining and analysis of the household data is provided in this chapter. It highlights various technical aspects of regular and panel surveys to take into consideration in the analysis. The IES and LCS data will cover two time periods (2005/06 and 2014/15). Only flow data is available for the IES and LSC surveys, which means that the analysis will focus exclusively on an income statement approach. Various saving items are available from which voluntary household saving will be constructed by selecting those variables that conform to the definition used in this study.

The analysis of the NIDS data will utilise data from all five available waves (2008, 2010/2011, 2012, 2014/15 and 2017). Flow data is available for all waves, which means that an income

¹²⁶ Doing this type of analysis for all five waves runs the risk of over complicating the analysis. Also, as explained in section 6.4.1.4, the main focus of this study is not on poverty.

statement approach is calculated for each. Derived income and expenditure variables are used to calculate voluntary household saving. This means that a significant difference exists between the methodologies followed in the IESs and LCSs (where voluntary households' saving is constructed by selecting variables), compared to the NIDS (where it is calculated as the difference between income and expenditure). However, both of these methods are theoretically accepted.

Stock data forms part of a special wealth module included during waves 2, 4 and 5 of the NIDS study. Therefore net wealth (or savings using a balance sheet approach) will be calculated and analysed for only these three waves of NIDS.

By combining the findings from the IES, LCS and NIDS, a more holistic picture should emerge of voluntary household saving in South Africa, spanning the period 2005 to 2017.

Chapter Six: Analysis of household level data

6.1 Introduction

The results from the analysis of the household level data are presented in this chapter. The aim is to calculate voluntary household saving in South Africa. Additionally, detailed statistical analysis of the data is performed. The results are presented as follows:

- Section 6.2: Income and Expenditure Survey (2005/2006)
- Section 6.3: Living Conditions Survey (2014/2015)
- Section 6.4: National Income Dynamics Study (waves 1 to 5)
 - Section 6.4.1: Income statement approach
 - Section 6.4.2: Balance sheet approach

6.2 The Income and Expenditure Survey

The analysis of the IES 2005/06 data is presented in this section. The section starts with an analysis of household income. This is followed by an overview of all saving related items, after which voluntary household saving is calculated and analysed.

During the IES, the total mean annual income was R52,870, while the median (50th percentile) income was significantly lower at R20,941. This provides evidence of a skew income distribution within the sample, which also corresponds with the skew distribution of income generally experienced in South Africa (see section 3.2). Therefore, although both the mean and median values are given throughout this chapter, the median value is preferred as it adjusts the results for the effect of outliers.

An inspection of the distribution of income indicates a cluster of values around the lower end of the spectrum, followed by clear outliers towards the upper end (see figure 6.1). Summary statistics indicate a positive skewness of 16.5 (skewness should be zero for symmetry), meaning a long rightward tail in the distribution. Kurtosis¹²⁷ is a separate measure of tallness or flatness with a value of 3 given to a normally distributed random variable (Stock & Watson,

¹²⁷ Technically a distribution with a value of K equal to 3 is called mesokurtic (for example, the normal distribution), K less than 3 is called platykurtic (flat or short tailed) and K greater than 3 is called leptokurtic (slim or short tailed) (Gujarati & Porter, 2009:816).

2012:65-67). The high positive value of 497.5 (see table 6.1) indicates an extremely “tall” distribution.

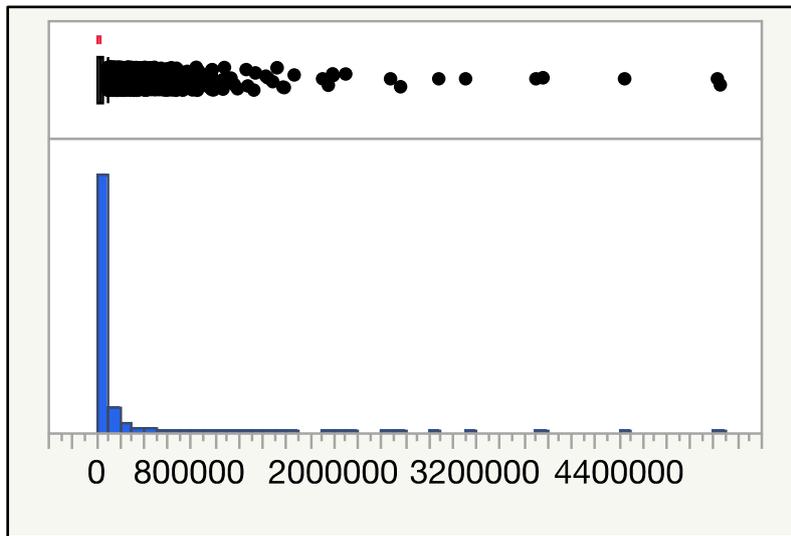


Figure 6.1: IES 2005/06: Household income distribution
Source: StatsSA; compiled by author

Table 6.1: IES 2005/06: Household income quantiles and summary statistics

100.00%	Maximum	R 5,263,286	Mean	R 52,870
99.50%		R 635,591	Std Dev	R 125,217
97.50%		R 295,293	Std Err Mean	R 862
90.00%		R 122,962	Upper 95% Mean	R 54,560
75.00%	Quartile	R 49,058	Lower 95% Mean	R 51,181
50.00%	Median	R 20,941	N	21 102
25.00%	Quartile	R 10,853	Skewness	16.5
10.00%		R 6,164	Kurtosis	497.5
2.50%		R 2,437		
0.50%		R 839		
0.00%	Minimum	R 10		

Source: StatsSA; compiled by author

Quantile analysis indicates the maximum income declared was R5,26 million, while 10.0 per cent of households indicated that they earned more than R122,962 per annum. From here income decreases rapidly, with 75.0 per cent indicating that they earned less than R49,058, as is evident from the third quartile reading (see table 6.1).

Household salaries and wages provided the bulk (around 65.0 per cent) of income in terms of value, followed by household self-employment and business income (11.6 per cent). See table 6.2 for a full list of income categories.

Table 6.2: IES 2005/06: Household income

Variable name	N	Mean	Median	Sum	% Total
Household salaries and wages	12914	R 56,297	R 23,536	R 727,019,441	65.2%
Household self-employment and business income	3059	R 42,665	R 8,610	R 130,511,658	11.7%
Income from letting of fixed property	242	R 22,996	R 6,194	R 5,565,132	0.5%
Royalties	9	R 24,684	R 3,102	R 222,154	0.0%
Interest received	210	R 29,685	R 7,487	R 6,233,843	0.6%
Dividends of listed companies	84	R 19,034	R 1,550	R 1,598,885	0.1%
Dividends of unlisted companies	22	R 24,390	R 1,071	R 536,571	0.0%
Other dividends	57	R 9,159	R 1,369	R 522,070	0.0%
Pension from previous employment	4941	R 6,539	R 183	R 32,309,618	2.9%
Annuities from own investment	1440	R 4,723	R 218	R 6,801,487	0.6%
Old age pensions	5121	R 9,936	R 9,527	R 50,881,899	4.6%
Disability grants	7963	R 2,841	R 134	R 22,621,278	2.0%
Family and other allowances	8129	R 4,765	R 3,227	R 38,731,667	3.5%
Workmen's Compensation Funds	276	R 6,825	R 722	R 1,883,784	0.2%
Alimony, palimony and other allowances	2612	R 7,618	R 4,844	R 19,898,370	1.8%
Other income from individuals	1141	R 5,686	R 3,075	R 6,488,099	0.6%
Hobbies	232	R 2,823	R 938	R 654,870	0.1%
Side lines and part time activities	801	R 5,999	R 1,436	R 4,805,376	0.4%
Sale of vehicles, property, etc.	191	R 120,842	R 18,279	R 23,080,878	2.1%
Payments received from boarders	246	R 5,609	R 1,840	R 1,379,862	0.1%
Goods and services received	1722	R 11,114	R 4,410	R 19,137,828	1.7%
Claims	235	R 13,341	R 5,093	R 3,135,083	0.3%
Stokvel	1702	R 2,381	R 1,383	R 4,052,880	0.4%
Non-refundable bursaries	159	R 7,119	R 1,070	R 1,131,926	0.1%
Benefits, donations and gifts	3220	R 1,252	R 507	R 4,032,818	0.4%
Cash	1273	R 1,335	R 414	R 1,699,229	0.2%
Value of food received	4693	R 991	R 402	R 4,651,528	0.4%
Value of housing	674	R 2,712	R 486	R 1,828,148	0.2%
Value Of clothing	2508	R 707	R 398	R 1,773,162	0.2%
Value of transport	659	R 1,661	R 204	R 1,094,872	0.1%
Value of other benefits	1325	R 1,284	R 258	R 1,701,243	0.2%
Lobola	246	R 5,206	R 3,043	R 1,280,684	0.1%
Income from gambling	1778	R 772	R 151	R 1,372,346	0.1%
Tax refunds received	578	R 3,627	R 1,411	R 2,096,273	0.2%
Income not elsewhere specified	269	R 5,460	R 376	R 1,468,671	0.1%
Gratuities and other lump sums	240	R 27,734	R 8,068	R 6,656,122	0.6%
Total income	21102	R 52,870	R 20,941	R 1,115,666,981	100.0%

Source: StatsSA; compiled by author

Households in Gauteng and the Western Cape recorded the highest median income, while Limpopo Province had the lowest. Two settlement types are available, which indicates that the median income of households residing in urban settings was more than double that in rural settings.

Looking at demographics, the information of the household head is used as a proxy for the household. White and Indian or Asian headed households recorded incomes of respectively six and three times that of the total sample. African households recorded the lowest value and also measured below the average of the sample. Households with a male head recorded a significantly higher income, compared to female headed households.

Mean household income roughly doubles when household size increases from one to two persons. It stagnates at three to five members after which it starts to decline. However, the median values show a positive correlation (or rising trend) as household size increases (see table 6.3). A possible explanation is the additional social grant income received by households with more members.

Table 6.3: IES 2005/06: Income according to province, settlement type, race, gender and household size

Province	N	Mean	Std Dev	Median
Western Cape	2402	R 88,448	R 214,739	R 38,141
Eastern Cape	2825	R 42,396	R 79,170	R 17,076
Northern Cape	1722	R 48,145	R 76,892	R 20,494
Free State	1751	R 51,922	R 117,868	R 19,977
KwaZulu-Natal	4724	R 37,191	R 73,401	R 17,408
North West	1562	R 42,949	R 71,677	R 19,434
Gauteng	2488	R 89,410	R 198,860	R 36,031
Mpumalanga	1678	R 47,041	R 109,898	R 20,002
Limpopo	1950	R 33,570	R 60,210	R 16,411
All	21102	R 52,870	R 125,217	R 20,941
Settlement				
Urban	11831	R 70,481	R 148,680	R 29,695
Rural	9271	R 30,396	R 81,110	R 15,489
All	21102	R 52,870	R 125,217	R 20,941
Pop group of head				
African/black	16072	R 32,047	R 49,597	R 17,391
Coloured	2688	R 52,968	R 72,065	R 28,593
Indian/Asian	348	R 119,914	R 151,377	R 71,699
White	1974	R 210,317	R 327,698	R 131,469
Unspecified	20	R 66,396	R 59,729	R 48,173
All	21102	R 52,870	R 125,217	R 20,941
Gender of head				
Male	11791	R 68,440	R 150,032	R 27,043
Female	9292	R 33,120	R 79,635	R 16,138
Unspecified	19	R 49,342	R 56,330	R 24,315
All	21102	R 52,870	R 125,217	R 20,941
Household size				
1	3698	R 33,560	R 61,595	R 13,692
2	3482	R 63,411	R 136,590	R 20,305
3 to 5	8951	R 63,002	R 155,453	R 22,029
6 to 10	4451	R 41,583	R 83,899	R 22,954
11+	520	R 41,821	R 42,973	R 29,822
All	21102	R 52,870	R 125,217	R 20,941

Source: StatsSA; calculations by author

Table 6.4 focuses on the available saving items. Roughly half of the total households surveyed (or 10 782 households) indicated that they made provision for some form of saving (compared to 21 102 households that received income).

The maximum saving was R9,21 million, while 10.0 per cent of the sample indicated that they saved more than R44,468 per annum. From here saving decreases rapidly, with 50.0 per cent indicating that they saved less than R3,677 per annum as is evident from the median reading (see table 6.4). As per definition, saving can be negative and 2.5 per cent of the sample reported dissaving. There is also a noteworthy dissaving of R357,664 by the household that recorded the minimum value.

The total mean annual saving was R23,903, while the median saving was R3,677. A highly skewed distribution for saving is evident from the high positive values for skewness (32.0) and kurtosis (1596.2) (see table 6.4 and figure 6.2).

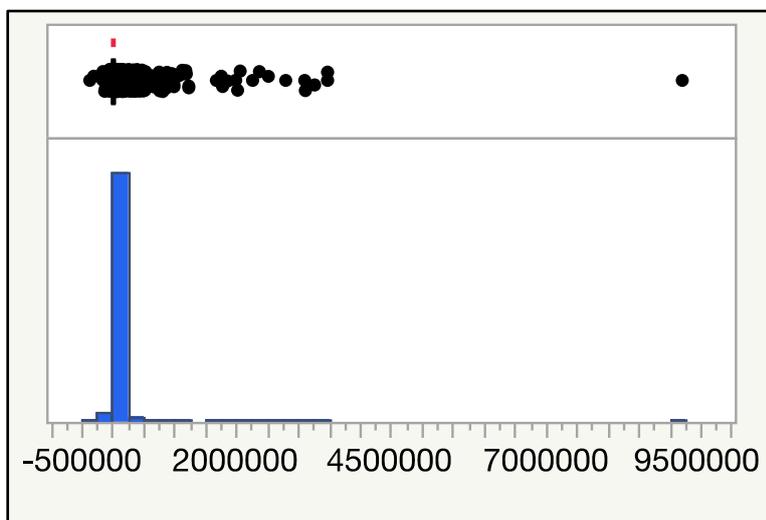


Figure 6.2: IES 2005/06: Household saving distribution
Source: StatsSA; calculations by author

Table 6.4: IES 2005/06: Household saving quantiles and summary statistics

100.00%	Maximum	R 9,212,399	Mean	R 23,903
99.50%		R 529,217	Std Dev	R 146,682
97.50%		R 138,133	Std Err Mean	R 1,413
90.00%		R 44,469	Upper 95% Mean	R 26,672
75.00%	Quartile	R 15,014	Lower 95% Mean	R 21,134
50.00%	Median	R 3,677	N	10 782
25.00%	Quartile	R 992	Skewness	32.0
10.00%		R 305	Kurtosis	1596.2
2.50%		-R 412		
0.50%		-R 24,467		
0.00%	Minimum	-R 357,664		

Source: StatsSA; calculations by author

Table 6.5 focuses on all saving line items available in the IES 2005/06 survey. Looking at the most prominent categories based on the value of flows, net bank deposits (deposits into savings minus withdrawals from saving) (20.5 per cent of total) received most flows, followed by capital payments related to residential property (12.0 per cent) and contributions to pension, provident and annuity funds (8.6 per cent).

Table 6.5: IES 2005/06: All saving line items

Variable name	N	Mean	Median	Sum	% Total
Improvements, additions and alterations	2373	R 2,531	R 1,563	R 6,005,687	2.3%
Services for improvements, additions and alterations	195	R 2,483	R 890	R 484,243	0.2%
Security structures	286	R 3,926	R 1,080	R 1,122,852	0.4%
Other building materials	886	R 1,923	R 405	R 1,703,848	0.7%
Improvements, additions and alterations	572	R 13,783	R 1,533	R 7,883,690	3.1%
Cost of other dwellings	792	R 21,999	R 3,331	R 17,423,164	6.8%
Capital payments (including deposit)	218	R 50,070	R 16,574	R 10,915,170	4.2%
Monthly capital payments	987	R 31,310	R 13,281	R 30,902,705	12.0%
Transfer duty and bond registration	89	R 34,507	R 10,339	R 3,071,092	1.2%
Purchase of timeshare	71	R 29,210	R 7,072	R 2,073,899	0.8%
Levy on timeshare	126	R 4,507	R 2,056	R 567,931	0.2%
Life and endowment policies	2782	R 6,673	R 3,034	R 18,565,536	7.2%
Life insurance covering mortgage debt	501	R 17,373	R 3,112	R 8,704,034	3.4%
Repayment on loans and overdrafts	1033	R 17,011	R 7,124	R 17,572,502	6.8%
Contribution to pension, provident and annuity funds	3722	R 5,964	R 3,126	R 22,199,574	8.6%
Employer contribution to pension, provident and annuity funds	2631	R 6,634	R 3,293	R 17,453,465	6.8%
Contributions to a stokvel	2489	R 1,781	R 1,206	R 4,432,932	1.7%
Listed company – shares	130	R 104,141	R 5,842	R 13,538,327	5.3%
Unlisted company – shares	24	R 99,433	R 3,300	R 2,386,380	0.9%
Unit trusts	166	R 30,001	R 4,784	R 4,980,130	1.9%
Investment plans	466	R 23,268	R 3,656	R 10,842,901	4.2%
Offshore	22	R 65,153	R 10,063	R 1,433,362	0.6%
Other investments	73	R 9,010	R 1,216	R 657,705	0.3%
Deposits into savings	3374	R 20,102	R 4,021	R 67,825,253	26.3%
Withdrawals from savings	813	R 18,486	R 5,982	- R 15,028,903	-5.8%
Total	10782	R 23,903	R 3,677	R 257,717,479	100.0%

Source: StatsSA; calculations by author

Next the focus falls on voluntary household saving, which is calculated by using the methodology as explained in chapter 5 (see section 5.4.2). Some type of voluntary saving was

reported by 10 546 households (see “N, All” in table 6.7). This number is very close to half (49.8 per cent) of the households that reported income.

The total mean and median annual voluntary saving are R18,934 and R2,513 respectively. This again provides evidence of a highly skewed voluntary household saving distribution, skewed rightwards, or towards the upper end.

In order to provide a clearer picture, all line items that conform to the definition of voluntary saving are organised into eight categories (see table 6.6).

Table 6.6: IES 2005/06: Voluntary household saving categories

Category	Sum	Percentage of Total
Residential property and improvements	R 59,018,195	29.6%
Life insurance and endowments	R 27,269,570	13.7%
Repayment on loans and overdrafts	R 17,572,502	8.8%
Pension, provident and annuity funds	R 4,746,109	2.4%
Stokvels	R 4,432,932	2.2%
Shares	R 15,924,707	8.0%
Other investments*	R 17,914,098	9.0%
Bank savings (Net)	R 52,796,350	26.4%
Total voluntary household saving	R 199,674,463	100.0%

*Includes unit trusts, investment plans, offshore and other investments

Source: StatsSA; calculations by author

The voluntary saving category for residential property and improvements was the largest in terms of value (29.6 per cent of total), followed by net bank savings (26.4 per cent). Costs related to property, such as improvements, additions and security related costs, contributed a significant part (more than a quarter) of the value of residential property and improvements. Life insurance and endowments (13.7 per cent) was the third largest category and includes the line item for life insurance covering mortgage debt (IES code: 52320000), which could arguably also be included in the residential property and improvements category.

For the purpose of this study only the voluntary part of contributions to pension, provident and annuity funds are taken into account. These voluntary (additional) retirement provisions equalled a meagre 2.4 per cent of total voluntary saving. Also prominent is the significant repayment of loans (8.8 per cent of the total). However, this could be traded off against withdrawals from (previous) savings, equalling almost the same amount during the period of analysis.

Based on the above mentioned categories, voluntary household saving represents 77.5 per cent of all (total) saving.

In order to provide further detailed analysis, the study cross-tabulates voluntary saving to various demographic, geographic and other descriptive variables (see table 6.7). As far as location is concerned, the Western Cape and Gauteng reported the highest median voluntary saving. Urban households reported median voluntary

saving of almost double the sample median, while households residing in rural areas reported values well below the sample median.

Households with a white household head performed best by recording voluntary saving of more than six times the sample median. Indian/Asian households came in second according to this measure, but also outperformed the sample median notably (by more than five times). Coloured and African households were both struggling to save voluntarily, with African headed households being the only category to perform weaker than the sample median.

Relating to gender, male headed households reported median voluntary saving of almost double that of female headed households.

Household size proved to have a significant impact on households' ability to save voluntarily. Voluntary saving rose by 49.5 per cent when household size doubled from one to two persons. However, compared to 2 member households, the median declined by 15.6 per cent for households with 3 to 5 members and 46.5 per cent then compared to households with 6 to 10 members. In summary, households with 2 and 3 to 5 members, recorded above average median voluntary saving.

Table 6.7: IES 2005/06: Voluntary household saving according to province, settlement type, race, gender, household size and income

Province	N	Mean	Median
Western Cape	1251	R 25,973	R 3,857
Eastern Cape	1399	R 10,309	R 2,055
Northern Cape	687	R 12,677	R 2,991
Free State	907	R 19,634	R 3,617
KwaZulu-Natal	2127	R 20,144	R 1,999
North West	808	R 14,364	R 2,159
Gauteng	1518	R 25,691	R 4,892
Mpumalanga	806	R 25,272	R 2,261
Limpopo	1043	R 11,910	R 1,502
All	10546	R 18,934	R 2,513
Settlement			
Urban	6478	R 23,067	R 4,069
Rural	4068	R 12,352	R 1,412
All	10546	R 18,934	R 2,513
Population group of head of household			
African/black	7636	R 9,393	R 1,855
Coloured	1092	R 14,946	R 2,937
Indian/Asian	242	R 82,188	R 13,914
White	1565	R 58,499	R 16,024
Unspecified	11	R 16,969	R 5,209
All	10546	R 18,934	R 2,513
Gender of head of household			
Male	6249	R 24,962	R 3,434
Female	4284	R 10,188	R 1,803
Unspecified	13	R 3,197	R 3,930
All	10546	R 18,934	R 2,513
Household size			
1	1691	R 12,678	R 2,370
2	1676	R 33,562	R 3,542
3 to 5	4704	R 20,629	R 2,991
6 to 10	2214	R 9,898	R 1,858
11+	261	R 11,628	R 1,470
All	10546	R 18,934	R 2,513
Income (poverty lines)			
Below LPL	72	R 996	R 658
Between LPL and UPL	378	R 2,178	R 707
Between UPL and 2X UPL	1328	R 4,546	R 929
Above 2X UPL	8764	R 21,988	R 3,445
All	10542	R 18,937	R 2,513

Source: StatsSA; calculations by author

This section concludes by looking at how voluntary saving is distributed according to income. As specified in chapter 5 (see section 5.4.2), income brackets are created using poverty lines. As expected, the amount of voluntary saving increases in line with household income, or stated differently, as households' poverty levels decrease. However, it is very interesting that 72 households that fell below the LPL (that is below the FPL) still managed to save some of their income. Also noteworthy is how the median differs only slightly between the bottom three brackets. This indicates that, on average, the ability of households to contribute to saving in the middle two income brackets is only marginally better compared to households whose income falls below the FPL.

The next section provides the results for the LCS 2014/2015 roughly a decade later, which enables a good comparison to the findings of the IES 2005/2006.

6.3 The Living Conditions Survey

The analysis and findings of the LCS 2014/2015 are presented in this section. The section starts with a look at household income, followed by an overview of all saving related matters. Thereafter voluntary household saving is calculated and analysed.

The total mean annual income during the LCS 2014/2015 was R97,819, or almost double the R52,870 recorded in the IES 2005/06 survey (ignoring the effect of inflation). The median (50th percentile) income was R41,440 (median was R20,941 in the IES), which is significantly lower than the mean. This indicates a skew income distribution within the sample, and corresponds to the skew distribution of income as measured in the IES 2005/06 survey (see section 6.2), although the gap between the mean and the median income has decreased slightly.

In terms of value, salaries and wages is again the largest category as it provided 68.9 per cent of income (IES: 65.0 per cent). It was followed by household self-employment and business income that contributed 12.7 per cent (IES: 11.7 per cent). The various government grants contributed around 10.3 per cent to income (IES¹²⁸: 6.6 per cent) (see table 6.8).

¹²⁸ The IES data included only old age pensions and child support grants.

Table 6.8: LCS 2014/15: Household income categories

Variable name	N	Mean	Median	Sum	% Total
Household salaries and wages	13816	R 112,166	R 54,000	R 1,549,680,632	68.9%
Household self-employment and business income	3785	R 75,619	R 30,000	R 286,217,498	12.7%
Income from subsistence farming	306	R 39,891	R 12,480	R 12,206,526	0.5%
Income from letting of fixed property	463	R 30,708	R 19,600	R 14,217,914	0.6%
Royalties	15	R 61,670	R 39,420	R 925,048	0.0%
Interest received	202	R 53,589	R 32,005	R 10,824,919	0.5%
Dividends of listed companies	110	R 38,209	R 16,000	R 4,203,042	0.2%
Dividends of unlisted companies	11	R 172,773	R 50,000	R 1,900,500	0.1%
Unit trusts	39	R 40,396	R 15,000	R 1,575,442	0.1%
Income from share trading	12	R 138,323	R 55,000	R 1,659,878	0.1%
Pension from previous employment	819	R 88,989	R 60,000	R 72,881,955	3.2%
Annuities from own investment	56	R 70,798	R 36,000	R 3,964,669	0.2%
Old age pensions	5854	R 19,355	R 16,300	R 113,306,070	5.0%
Disability grants	2141	R 16,825	R 16,200	R 36,022,291	1.6%
Child support grants	9172	R 8,002	R 7,440	R 73,392,526	3.3%
Care dependency grants	186	R 15,051	R 16,160	R 2,799,438	0.1%
Foster care grants	487	R 12,801	R 10,040	R 6,234,148	0.3%
Grant-in-aid	26	R 4,812	R 3,790	R 125,120	0.0%
Other assistance from government	10	R 1,705	R 1,425	R 17,050	0.0%
Other funds (workmen's compensation, unemployment insurance)	76	R 20,271	R 16,128	R 1,540,594	0.1%
Alimony, palimony and other allowances	1777	R 16,504	R 11,116	R 29,327,433	1.3%
Other income from individuals	1740	R 15,238	R 9,600	R 26,514,345	1.2%
Total income	22997	R 97,819	R 41,440	R 2,249,537,038	100.0%

Source: StatsSA; calculations by author

According to table 6.9 the maximum income declared for the LCS was R7,56 million, which is up from R5,26 million declared in the IES. Ten per cent of the sample indicated that they earned more than R240,000 per annum (R122,962 per annum in IES). Thereafter it decreases

rapidly, with 75.0 per cent indicating that they earned less than R103,200 (IES: R49,058), as is evident from the third quartile reading.

An inspection of the distribution of income indicates a cluster of values at the lower end of the spectrum, and outliers towards the upper end (see figure 6.3). Summary statistics confirm this lack of symmetry and expected outliers. This is indicated by the positive skewness of 8.1; however, it is lower than the 16.5 reported for the IES.

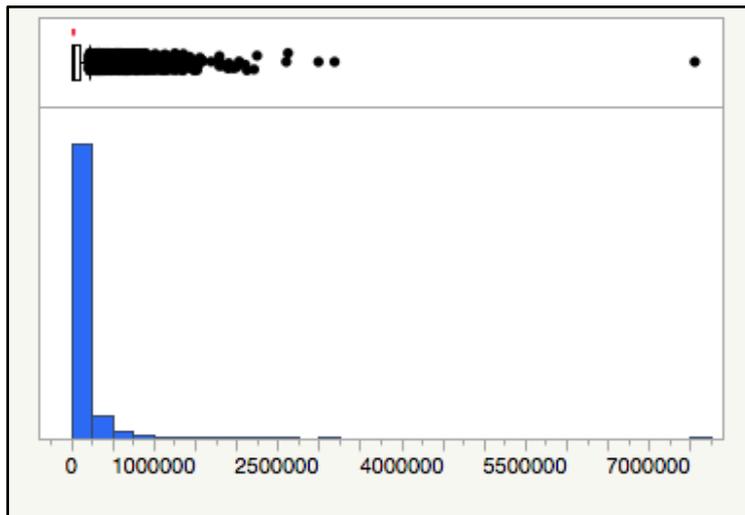


Figure 6.3: LCS 2014/15: Household income distribution
 Source: StatsSA; calculations by author

Table 6.9: LCS 2014/15: Household income quantiles and summary statistics

100.00%	Maximum	R 7,560,000	Mean	R 97,819
99.50%		R 979,100	Std Dev	R 168,575
97.50%		R 543,605	Std Err Mean	R 1,112
90.00%		R 240,000	Upper 95% Mean	R 99,998
75.00%	Quartile	R 103,200	Lower 95% Mean	R 95,640
50.00%	Median	R 41,440	N	22 997
25.00%	Quartile	R 19,200	Skewness	8.1
10.00%		R 10,200	Kurtosis	201.4
2.50%		R 3,720		
0.50%		R 1,150		
0.00%	Minimum	R 120		

Source: StatsSA; calculations by author

Table 6.10 shows that as far as location is concerned, the Western Cape and Gauteng recorded the highest average (median) income, while Limpopo Province had the lowest (this corresponds with the IES findings).

The LCS provided additional breakdown according to settlement types, which indicates that households living in formal urban areas recorded the highest median income. In contrast, traditional¹²⁹ rural areas recorded the lowest income. Income in rural formal areas was also higher than in informal urban settings.

Focusing on demographics, households with a white and Indian or Asian household head, recorded median incomes of respectively 5.7 and 3.0 times that of the total sample median (down from 6.3 and 3.4 in IES). African headed households reported the lowest income, which equalled 73.8 per cent of the sample median.

Male headed households recorded a significantly higher median income compared to female headed households. This is worrying as female headed households represent almost half (45.1 per cent) of the sampled households.

Looking at household size, the median values indicate a positive relationship with income. As explained earlier, social grant income allocated to larger families is most likely responsible for the observed trends. Table 6.10 provides a full breakdown of household income according to the determinants, as discussed above.

¹²⁹ A traditional area is defined as “Communally owned land under the jurisdiction of a traditional leader” (StatsSA, 2017d:67).

Table 6.10: LCS 2014/15: Income according to province, settlement type, race, gender and household size

Province	N	Mean	Std Dev	Median
Western Cape	2654	R 169,224	R 228,512	R 85,835
Eastern Cape	2919	R 77,713	R 135,361	R 31,680
Northern Cape	1312	R 94,290	R 131,507	R 45,948
Free State	2149	R 79,984	R 132,652	R 36,240
KwaZulu-Natal	3647	R 84,798	R 144,255	R 38,070
North West	1975	R 77,195	R 120,307	R 36,000
Gauteng	3176	R 142,091	R 249,985	R 67,648
Mpumalanga	2333	R 81,701	R 127,852	R 36,000
Limpopo	2832	R 61,573	R 107,341	R 27,260
All	22997	R 97,819	R 168,575	R 41,440
Settlement type				
Urban formal	12398	R 136,353	R 209,519	R 64,680
Urban informal	1578	R 55,359	R 67,655	R 35,120
Traditional area	8149	R 49,363	R 76,957	R 26,520
Rural formal	872	R 79,615	R 122,781	R 42,000
All	22997	R 97,819	R 168,575	R 41,440
Population group of head of household				
African/black	18661	R 72,443	R 124,413	R 34,887
Coloured	2463	R 132,387	R 162,265	R 76,440
Indian/Asian	439	R 208,620	R 269,584	R 123,767
White	1434	R 334,747	R 341,532	R 236,797
All	22997	R 97,819	R 168,575	R 41,440
Gender of head of household				
Male	12622	R 124,370	R 202,722	R 54,805
Female	10375	R 65,517	R 105,327	R 31,200
All	22997	R 97,819	R 168,575	R 41,440
HH size 2				
1	4220	R 57,342	R 101,547	R 24,000
2	3922	R 97,070	R 160,955	R 36,000
3-5	9978	R 117,924	R 203,400	R 47,020
6-10	4479	R 91,462	R 133,428	R 48,000
11+	398	R 101,853	R 109,683	R 63,740
All	22997	R 97,819	R 168,575	R 41,440

Source: StatsSA; calculations by author

Table 6.11 lists all the items that form part of saving in the LCS and shows that, in total, 8 909 (IES: 10 782) of the households surveyed indicated that they made provision for some form of saving. This is equal to 38.8 per cent (IES:51.1 per cent) compared to the number of households

that received income. Although the ratio for the LCS is lower than during the IES, the mean annual saving rose to R34,144 (IES:R23,903) and the median saving is also higher at R5,600 (IES: R3,677), ignoring the effects of inflation.

Table 6.11: LCS 2014/15: All saving line items

Variable name	N	Mean	Median	Sum	% Total
Improvements, additions and alterations	609	R 13,631	R 5,000	R 8,300,996	2.7%
Services for improvements, additions and alterations	382	R 9,795	R 3,500	R 3,741,623	1.2%
Security structures	203	R 8,539	R 5,000	R 1,733,391	0.6%
Labour and material for improvements, additions and alterations	405	R 14,844	R 6,000	R 6,011,786	2.0%
Capital payments (including deposit)	79	R 97,094	R 30,000	R 7,670,403	2.5%
Monthly capital payments	699	R 56,190	R 31,200	R 39,276,600	12.9%
Other payments such as transfer duty and bond registration	61	R 32,349	R 14,000	R 1,973,294	0.6%
Purchase of timeshare	47	R 19,019	R 8,500	R 893,914	0.3%
Levy on timeshare	85	R 6,091	R 4,800	R 517,770	0.2%
Life and endowment policies	520	R 6,011	R 3,600	R 3,125,773	1.0%
Life insurance covering mortgage debt	439	R 1,071	R 450	R 470,105	0.2%
Contribution to pension, provident and annuity funds	3590	R 16,076	R 6,796	R 57,713,480	19.0%
Employer contribution to pension, provident and annuity funds	2729	R 16,933	R 7,200	R 46,209,937	15.2%
Contributions to a stokvel	4295	R 4,179	R 2,400	R 17,950,061	5.9%
Listed company – shares	140	R 325,431	R 6,000	R 45,560,292	15.0%
Unlisted company – shares	18	R 222,791	R 14,050	R 4,010,232	1.3%
Unit trusts	102	R 111,044	R 9,000	R 11,326,441	3.7%
Offshore	10	R 220,561	R 40,000	R 2,205,612	0.7%
Other investments	44	R 22,665	R 7,137	R 997,239	0.3%
Deposits into savings	1435	R 23,050	R 6,000	R 33,076,503	10.9%
Withdrawals from savings	211	R 21,390	R 6,000	-R 4,513,369	-1.5%
Total	8909	R 34,144	R 5,600	R 304,188,970	100.0%

Source: StatsSA; calculations by author

The maximum saving was R7,93 million per annum, which is lower than the R9,21 million maximum reported in the IES. Ten per cent of the sample indicated that they saved more than R67,680 per annum (this is higher than the R44,468 reported in the IES). From this observation

the amount saved decreases rapidly, with 50 per cent indicating that they saved less than R5,600 per annum (IES:R3,676) as is evident from the median reading (see table 6.12). In this instance the maximum dissaving reported was R317,780 (IES: R357,664).

Figure 6.4 shows that the distribution of total household saving again indicates a cluster of values at the lower end of the spectrum, followed by clear outliers towards the upper end.

Table 6.11 shows that the most prominent individual saving items, based on the value, contribution to pension, provident and annuity funds by households and their employers, are the most important – equalling 34.2 per cent (IES: 15.4 per cent) of total saving. Second largest is listed shares with 15.0 per cent (IES: 5.3 per cent), followed by capital payment on residential property at 12.9 per cent (IES: 12.0 per cent). This shows a significant change in consumers’ saving preferences when compared to the IES 2005/06 survey, with the latter indicating that bank deposits and residential property received most saving flows while contribution to pension, provident and annuity funds took only third place.

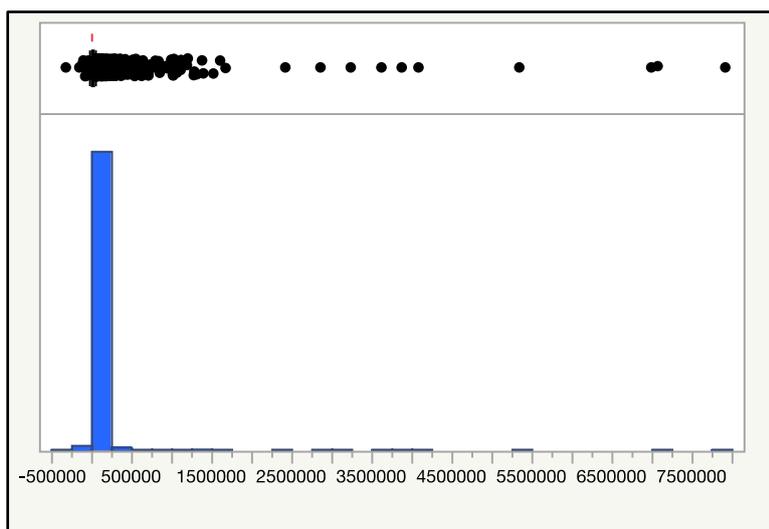


Figure 6.4: LCS 2014/15: Household all saving distribution
 Source: StatsSA; calculations by author

Table 6.12: LCS 2014/15: Household all saving quantiles and summary statistics

100.00%	Maximum	R 7,925,000	Mean	R 34,144
99.50%		R 800,000	Std Dev	R 192,512
97.50%		R 188,075	Std Err Mean	R 2,040
90.00%		R 67,680	Upper 95% Mean	R 38,142
75.00%	Quartile	R 22,082	Lower 95% Mean	R 30,146
50.00%	Median	R 5,600	N	8 909
25.00%	Quartile	R 1,800	Skewness	25.6
10.00%		R 800	Kurtosis	849.2
2.50%		R 196		
0.50%		-R 8,690		
0.00%	Minimum	-R 317,780		

Source: StatsSA; calculations by author

According to the LCS, voluntary household saving represents 63.3 per cent of all (total) saving. This is less than the 77.5 per cent of total saving reported for the IES, but as explained earlier, is likely due to the exclusion of a major voluntary saving category (the repayment of loans and overdrafts) in the LCS data. Despite the decline experienced between the two surveys, it remains a significant finding that voluntary type saving contributed almost two-thirds of total saving.

The total mean annual voluntary saving was R23,453 – up from the R18,934 reported in the IES. The median voluntary saving measured R2,800 (IES: R2,513).

According to table 6.13, residential property and improvements was the largest voluntary saving category with 34.7 per cent of the total of the LCS (IES: 29.6 per cent). The second largest category was shares (listed and unlisted) with 25.8 per cent (IES: 8.0 per cent), followed by net bank savings with 14.8 per cent (IES: 26.4 per cent).

Between the IES and LCS some interesting changes in voluntary saving patterns have occurred, notably an increased preference for shares. Life insurance and endowments, and bank savings, which both featured strongly in IES, became less popular. As the local equity bourse (Johannesburg Stock Exchange) was in an upward (“bull”) phase during both surveys, it is difficult to pinpoint the drivers of change in households’ preferences related to listed shares between the two surveys. The return on shares exceeded inflation and may be an explanation for the tendency. Stokvels also increased its share of total voluntary saving as it measured 9.3 per cent in the LCS, compared to only 2.2 per cent in the IES.

Table 6.13: LCS 2014/15: Voluntary households' saving categories

Category	Sum	Percentage of total
Residential property and improvements	R 66,734,799	34.7%
Life insurance and endowments	R 3,595,878	1.9%
Pension, provident and annuity funds	R 11,503,543	6.0%
Stokvels	R 17,950,061	9.3%
Shares	R 49,570,524	25.8%
Other investments	R 14,529,292	7.5%
Bank savings (Net)	R 28,563,134	14.8%
Total voluntary household saving	R 192,447,231	100.0%

Source: StatsSA; calculations by author

Table 6.14 shows the cross-tabulations of voluntary saving with various descriptive variables. As far as provinces are concerned, the Western Cape reported the highest median values, followed by the Free State and Gauteng provinces. Compared to the IES, this indicates a significant decline in Gauteng's performance (it was the best performer in the IES), while the Free State made significant inroads. Limpopo, Mpumalanga and the North West recorded voluntary household saving below the sample median during both surveys. Also noteworthy is the significant improvement experienced by KwaZulu-Natal between the two surveys. The reason for the shifts is unclear, but again, note the exclusion of one of the categories (repayment of loans and overdrafts) between surveys, which could influence the findings.

As mentioned earlier the LCS provided additional breakdown according to settlement types. This indicates that traditional areas recorded the lowest voluntary saving. Voluntary saving in urban informal settlements was below average, but did manage to outperform rural formal areas, albeit marginally. Households located in urban formal areas recorded the highest voluntary saving.

White households reported voluntary saving of 7.3 times the median. This is an improvement on the IES where this ratio was 6.4. In second place, households with an Indian or Asian head were also above average; however, they lost significant ground with a median saving of 3.2 times the sample median, compared to the IES with a ratio of 5.5. Coloured and African headed households both recorded below average (median) voluntary saving. However, African headed households managed to close the gap between themselves and coloured headed households. Coloured headed households' median saving also dropped to below the sample median in the LCS.

Male headed households reported saving well above the median of the sample and outperformed female headed households by 43.4 per cent.

Household size also proved to have a significant impact on households' ability to save voluntarily. Households comprising two, and three to five individuals, recorded voluntary saving more than the sample median in both surveys. Households with 11 or more individuals recorded the lowest saving, while those with six to ten individuals were also struggling. Individuals living alone outperformed the last two mentioned categories, but their saving remained below the sample median.

A general upwards trend in voluntary saving as income increased (or as poverty decreased) is present. The bulk of voluntary household saving comes from more affluent households, or those earning more than twice the amount of the UPL in both surveys. However, a worrying aspect is that the median voluntary saving recorded by households falling in the three lower brackets differ only marginally from one other. Taking a closer look at this observation, the bracket for households with an income between the UPL and two times the UPL indicates that these households have money to buy both food and non-food essentials (as per the definition of the upper poverty line). Despite this, this bracket still recorded voluntary saving well below the sample median during both surveys. The ratio did, however, improve from 36.9 per cent of the IES sample median to 64.2 per cent of the median of the LCS.

Table 6.14: LCS 2014/15: Voluntary households' saving according to province, settlement type, race, gender, size and income

Province	N	Mean	Median
Western Cape	1078	R 57,586	R 3,600
Eastern Cape	1001	R 19,450	R 3,095
Northern Cape	346	R 14,692	R 3,000
Free State	898	R 18,000	R 3,594
KwaZulu-Natal	1311	R 23,037	R 3,240
North West	702	R 16,232	R 2,400
Gauteng	1366	R 29,291	R 3,576
Mpumalanga	850	R 9,541	R 2,400
Limpopo	1333	R 11,907	R 1,800
All	8885	R 23,453	R 2,800
Settlement type			
Urban formal	5189	R 33,730	R 4,000
Urban informal	456	R 9,377	R 2,440
Traditional area	2985	R 7,801	R 2,160
Rural formal	255	R 22,741	R 2,200
All	8885	R 23,453	R 2,800
Population group of head of household			
African/black	7009	R 12,019	R 2,400
Coloured	878	R 16,263	R 2,513
Indian/Asian	163	R 53,079	R 9,000
White	835	R 121,209	R 20,560
All	8885	R 23,453	R 2,800
Gender of head of household			
Male	5058	R 30,962	R 3,442
Female	3827	R 13,529	R 2,400
All	8885	R 23,453	R 2,800
Household size			
1	1243	R 29,744	R 2,460
2	1377	R 27,258	R 3,250
3-5	4255	R 26,181	R 3,000
6-10	1854	R 11,426	R 2,400
11+	156	R 8,318	R 2,400
All	8885	R 23,453	R 2,800
Income (poverty lines)			
Below LPL	135	R 4,109	R 1,540
Between LPL and UPL	281	R 4,571	R 1,440
Between UPL and 2X UPL	1005	R 7,612	R 1,800
Above 2X UPL	7458	R 26,663	R 3,395
All	8879	R 23,464	R 2,805

Source: StatsSA; calculations by author

The remainder of this chapter provides the results from the National Income Dynamic Study.

6.4 The National Income Dynamics Study

This section includes the results for the National Income Dynamic Study. The analysis starts with voluntary household saving calculated by using an income statement approach (section 6.4.1). This is followed by an analysis of voluntary household savings (or net worth) using the balance sheet approach (section 6.4.2).

6.4.1 Income statement approach

The income statement approach is a flow concept, which calculates saving as the difference between income and expenditure. The data required to calculate it is available for all five waves. The main aim of this section is to quantify voluntary household saving, which is dealt with in section 6.4.1.1. Thereafter the aggregate results are analysed further statistically based on variables such as age (section 6.4.1.3), income and poverty levels (section 6.4.1.4) and the mobility of households between waves (section 6.4.1.5).

6.4.1.1 Summary of the income statement results for all five waves

Applying the definition of voluntary saving (see section 1.5) and methodology (see section 5.5.2) to the NIDS data, indicates that between waves 1 and 5, the total voluntary household saving declined marginally from R58,7 billion (2008) to R57,9 billion (2017), ignoring the effects of inflation. However, a lot of unexpected volatility occurred between waves, and is discussed next (also see table 6.15).

The dampening effect that the GFC had on household income is evident as total voluntary household saving dropped notably between wave 1 (2008) and wave 2 (2010). Income recovered very strongly in waves 3 and 4, which provided support to voluntary saving, which increased from R275,5 billion in 2012 to R428,9 billion in 2015. However, expenditure rose strongly by 40.3 per cent between waves 4 and 5, which again lead to a drop in saving between the last two waves.

Labour market income was the largest income category during all five waves, contributing on average around 87.0 per cent of income. Investment income improved around 2014 and contributed 15.6 per cent of income for wave 4. However, it decreased again in wave 5.

On the expenditure side, non-food expenditure took up most of households' income as it averaged 70.5 per cent of expenditure during all five waves. Food expenditure averaged only

23.6 per cent. These relative contributions are as expected compared, for example, with the weights of similar items in South Africa's CPI¹³⁰.

Table 6.15: Total voluntary household saving, waves 1 to 5 (R billions)

	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5
Income	R 798.1	R 814.5	R 1,115.4	R 1,589.5	R 1,686.1
Labour market income	R 696.3	R 738.7	R 992.7	R 1,276.3	R 1,476.0
Investment income	R 64.6	R 58.6	R 86.6	R 248.3	R 136.8
Remittance income	R 36.4	R 15.3	R 34.4	R 60.8	R 69.7
Subsistence agriculture	R 0.9	R 2.0	R 1.7	R 4.0	R 3.6
<i>Less</i>					
Expenditure	R 739.4	R 775.5	R 839.9	R 1,160.5	R 1,628.2
Total food expenditure	R 166.0	R 182.2	R 216.1	R 273.4	R 367.2
Total non-food expenditure	R 534.6	R 560.4	R 571.2	R 805.0	R 1,152.0
Rental expenditure	R 38.8	R 32.8	R 52.5	R 82.2	R 109.0
Total	R 58.8	R 39.1	R 275.5	R 428.9	R 57.9

Source: SALDRU; calculations by author

Table 6.15 enables a comparison in the trend in the NIDS data between all five waves with, for example, the national accounts data (see section 4.3.1), and indicates various anomalies. These contradictions include a stellar rise in household income during waves 3 and 4, alongside a (seemingly) significant under representation of expenditure in the NIDS, up until wave 4. This can be the reason for the sharp increase in the total voluntary household saving between waves 1 and 4, which is not synchronised with movements in possible proxy variables, such as *gross saving by households* in the national accounts (see section 4.3.1). Nominal measurements also differ significantly. Similarly, the sharp rise in expenditure during wave 5 (40.3 per cent) is out of kilter with items in the national accounts such as final consumption expenditure of households, which rose by (only) 14.4 per cent over the same period.

Possible reasons for the discrepancies include the exclusion of *imputed rent on owner-occupied housing* on the expenditure side. But this item alone is unlikely to explain this large deviation. Another explanation could be the use of weights in the analysis. NIDS recognises that its weights may produce undesirable results and states that "...in some cases one gets 'nice' results with unweighted data and strange ones with weights" (Chinhema et al., 2016:65). The discrepancies of wave 5 may also have contributed to the effect of the top-up of the sample,

¹³⁰Food and non-alcoholic beverages had a weight of 17.3 per cent in the 2017 CPI basket (StatsSA, 2017b). The effect of the exclusion of imputed rent on owner occupied housing is also likely to increase the relative weights of expenditure items.

which occurred during this wave. However, it is very difficult to differentiate between the effects of the top-up versus other possible effects.

The NIDS data thus provides very volatile results for (voluntary) household saving calculated with the aid of the income statement approach. This problem is also encountered by other researchers (see Orthofer, 2015; Van der Berg, Burger, Louw & Yu, 2007) and is the main reason for the decision to not utilise more advanced econometric techniques (for example, panel regression) in this study.

Despite the shortcomings, Orthofer (2015:16) makes the important remark that survey data still provides researchers with the ability to look into distributional questions, which would otherwise be lost on data at National Account level. It is against this background that this study cautiously proceeds.

6.4.1.2 Voluntary household saving: descriptive statistics, waves 1 to 5

This section uses summary statistics to identify more detail about the developments with regard to saving within each wave. For all five waves the mean values for voluntary household saving was positive and significantly higher than the median (50th percentile) (see table 6.16). The median values indicate that (on average) households were under severe financial stress during the whole period. This is especially evident for waves 1 and 2 where the median was actually negative (dissaving). The median values for waves 3 to 5 on average measured only R852,0 per annum, also confirming tight income to spending margins of households.

Both the mean and median followed similar rising trends between waves 2 and 4, after which they corrected (declined) significantly during wave 5. This correction experienced in wave 5 should be analysed with caution as it is likely driven by the sample adjustment (newly included households) that accrued in this wave and to a lesser extent market conditions prevalent between waves 4 and 5 (that could be analysed further in future research).

The fact that the mean is higher than the median for all waves again provides evidence of a skew distribution within the samples. This is confirmed by the values for skewness and kurtosis, which should be equal to respectively zero and three for a normally distributed sample. In general (with the exception of wave 2), a skewness greater than zero was reported, indicating a rightward tail in the distribution. Wave 2 recorded a negative skewness value of -7.4, which is worth highlighting as it confirms that households were dissaving to such a degree that the whole sample leaned towards the negative side. It must be kept in mind that the

sampling for wave 2 occurred in 2010 – just after a period in which the South African economy experienced a recession (as mentioned in chapter 3, South Africa’s GDP contracted by -1.5 per cent in 2009).

The maximum and minimum values indicate that there were significant outliers, both positive and negative, during all five waves. Taking wave 5 (2017) as an example, the highest recorded household saving was R31,0 million while the largest dissaving was R5,1 million. It is also evident from wave 5 that only 25.0 per cent of households managed to make voluntary household saving of more than R31,631 (as indicated by the 75.0 per cent quartile value). The 25.0 per cent quartile value of –R21,420 indicates that dissaving occurred for a significant part of the sample, and only more or less half of the sample managed to reach a point where they were breaking even (the 50.0th percentile value is R48,0), albeit barely.

Table 6.16: Waves 1 to 5: Quantiles and summary statistics of voluntary household saving*

	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5
Observations	7 296	6 684	8 031	9 619	10 841
Mean	R 4,208	R 2,832	R 17,573	R 25,065	R 2,911
Std Dev	R 104,042	R 135,895	R 99,742	R 361,329	R 291,669
Maximum	R 1,345,912	R 5,339,652	R 1,593,696	R 12,000,000	R 31,000,000
75.0 % Quartile	R 14,160	R 21,668	R 25,428	R 32,451	R 31,631
50.0 % Median	-R 2,424	-R 3,720	R 528	R 1,980	R 48
25.0 % Quartile	-R 12,890	-R 16,340	-R 13,560	-R 14,568	-R 21,420
Minimum	-R 1,229,341	-R 4,324,656	-R 2,016,893	-R 2,317,848	-R 5,060,599
Skewness	0.8	-7.4	3.3	27.9	63.4
Kurtosis	60.8	257.2	63.9	903.6	6824.9

*Post-stratification weights are taken into account. Zero values have been removed.

Source: SALDRU; calculations by author

6.4.1.3 Voluntary household saving according to age

This section analyses how households of different ages¹³¹ performed when it came to saving. The methodology for the analysis is discussed in section 5.5.2.3.

Before the figures are analysed it is worth taking a look at the age distribution of resident heads, used as a proxy for the “age of households”. Resident heads aged 25 to 55 featured most prominently in the data, which is largely as expected. However, it is also evident that minors (or individuals younger than 18) had to fulfil this role in a small number of households, for

¹³¹ The “age” of households is determined by the age of the resident head.

example 0.7 per cent of wave 3 household heads fell into the age category 0 to 17. The relative contribution of household heads tapered off with age. However, noticeable in wave 5 is the increase of household heads in age groups 55 to 64 and older than 65, this may be linked to the top-up of the sample, which occurred during the sampling of wave 5 (see figure 6.5).

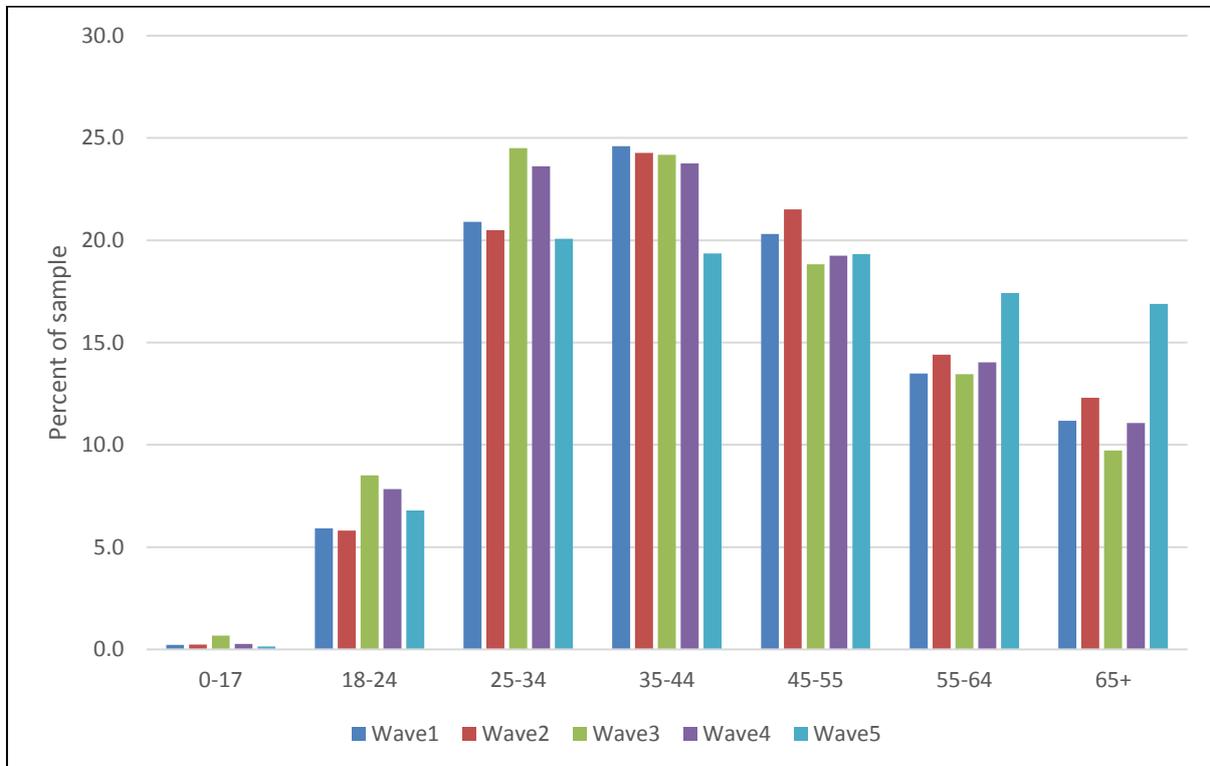


Figure 6.5: Age distribution of household (resident) heads, waves 1 to 5

** Instances where the age is unavailable for the resident head are excluded. These cases are negligibly small, averaging around 1.2 per cent in total over the five waves.*

Source: SALDRU; calculations by author

In order to answer the important question of which age group saves (or dissaves) most, the study analyses voluntary household saving according to age brackets. In order to do this, two measures were calculated, namely the median and mean of each age bracket. Knowing that the data has a skew distribution during all waves (as proved above), the focus will be primarily on the median in this analysis.

Section 6.4.1.2 notes that the median values indicate that (on average) households were under severe financial stress over the whole period. An analysis of the various age groups (see figure 6.6) supports this finding. Some exceptions occurred for age groups zero to 17, 25 to 34 and 35 to 44 in wave 5, as well as 25 to 34 in wave 4, which managed to record small positive median values.

Age groups that recorded the largest dissaving were those aged 55 to 64 and older than 65, for all five waves. This finding corresponds with expectations for households with a (likely) retired resident head (older than 65), but not necessarily for those aged 55 to 65, typically expected to be at the top end of their earnings curve. Taking into consideration how voluntary saving is calculated (see section 5.5.2.1), it could be that age specific/related expenditures (for example increased medical related expenses) are starting to affect individuals in the second highest age group.

Using this information to determine how the various age groups are coping financially, it is evident that age groups 25 to 54 are most able to balance their budgets, or at least to limit their dissaving.

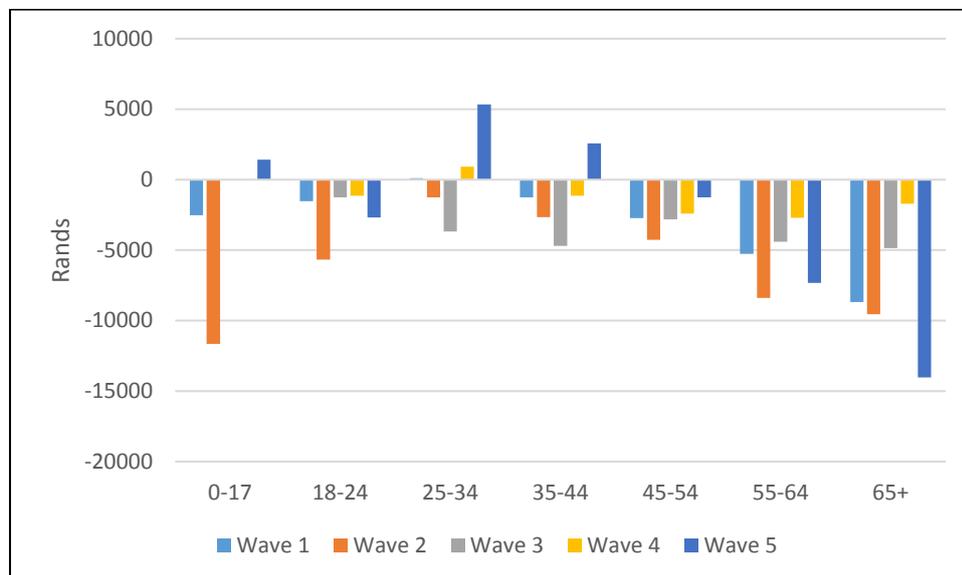


Figure 6.6: Median voluntary saving by age group, waves 1 to 5
 Source: SALDRU; calculations by author

Figure 6.7 show that mean (average) values indicates a totally different picture, as the majority of age groups recorded positive mean values during all five waves. This is most evident for wave 4. Similar to the findings using the median values, the mean values also indicate that the “middle age groups” (that is 25 to 54) recorded the largest positive mean voluntary saving.

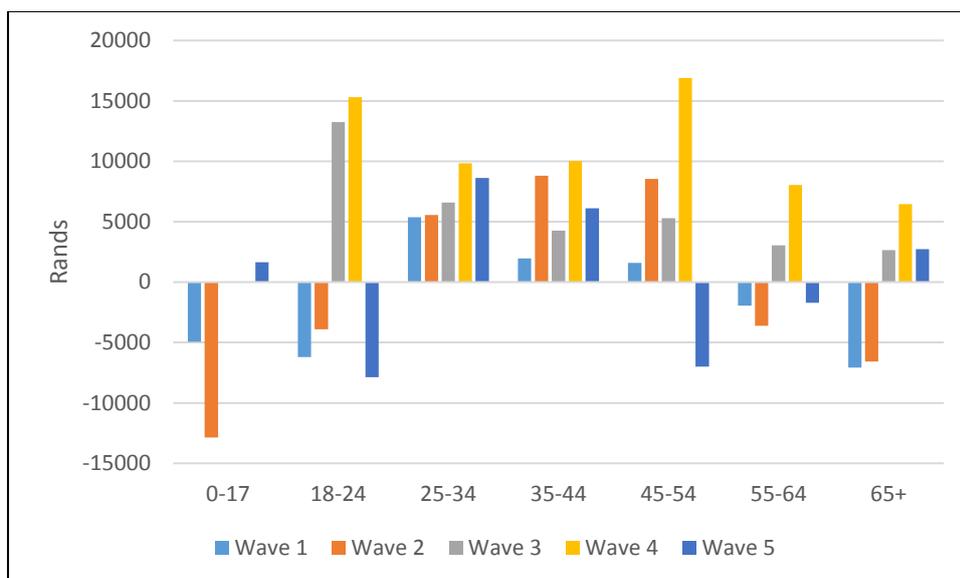


Figure 6.7: Mean voluntary saving by age group, waves 1 to 5

Source: SALDRU; calculations by author

Age brackets are again used to analyse voluntary household net worth (savings) – see section 6.4.2.3 below. However, the focus remains for now on saving with the next section looking at how poverty affected households’ ability to save.

6.4.1.4 Voluntary household saving according to poverty lines

In order to obtain a more realistic view of how income affects saving, this section uses poverty lines to differentiate between income categories. Due to various practical considerations, the analysis of poverty lines is performed for wave 2 of the NIDS data only (see section 5.5.2.4).

Figure 6.8 provides a breakdown¹³² of wave 2 voluntary saving households according to per capita household income, which indicates that 6.6 per cent of the samples were from households living below the LPL, while another 8.2 per cent fell between the LPL and the UPL. This is a significant finding as it indicates that 14.8 per cent of the households that managed to put aside some form of saving, did so while living in poverty. Households earning more than twice the amount of the UPL performed the bulk (65.3 per cent) of voluntary saving.

¹³² Caution should be taken not to generalise the poverty dynamics indicated here to the population at large, as only a specific subset of the population (sample of those households that indicated that they put aside some part of income for saving purposes) is included here. Head-count ratios of the total South African population living in poverty are much higher. For a summary of different ratios see, for instance, Budlender et al. (2015:30).

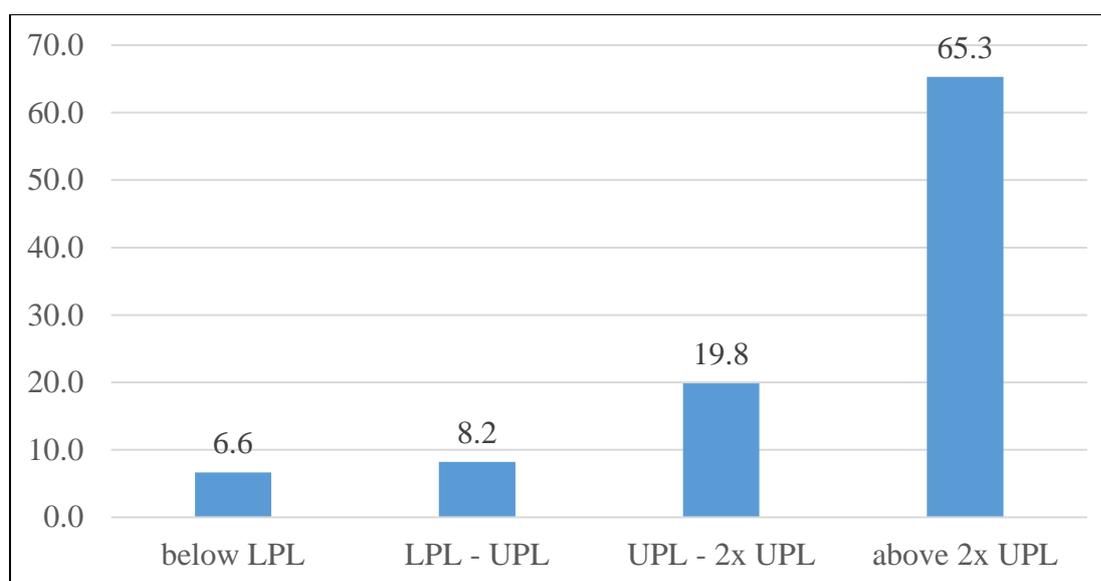


Figure 6.8: Voluntary saving according to poverty lines, wave 2

Source: SALDRU; calculations by author

A breakdown of the poverty measures by quintile indicates that some of the lowest earners (below LPL) actually managed to contribute to the upper quintiles, including some 19.7 per cent for quintile 3 (see table 6.17).

The highest earners dominate quintile 5 (as expected), and 98.8 per cent of those earning twice the UPL category, fell in this quintile. However, also noteworthy is the large share of higher income households' contributions falling only within quintile 1 (75.0 per cent) and quintile 2 (41.1 per cent). This also provides some evidence of under-saving (saving falling below their means) by relatively “better-off” households.

Table 6.17: Voluntary saving by poverty. Relative contribution to quintiles, wave 2

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Below LPL	3.3%	8.6%	19.7%	6.0%	0.5%
LPL - UPL	5.1%	12.4%	20.7%	8.2%	0.5%
UPL - 2x UPL	16.7%	37.9%	31.7%	26.0%	0.2%
Above 2x UPL	75.0%	41.1%	27.9%	59.8%	98.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: SALDRU; calculations by author

Further research could analyse the dynamics of specifically poverty on the distribution of voluntary saving over time. Helpful in this regard should be Budlender et al. (2015) who

provide poverty lines adjusted for inflation up to 2015. However, as the focus of this study is not on poverty as such, this is not analysed further here.

6.4.1.5 Voluntary household saving mobility

In order to obtain a sense of the movement in voluntary saving of households between waves, a transition matrix is presented in table 6.18, which compares the proportions of the sample in wave 2 and wave 4, according to income quintiles. Waves 2 and 4 are selected for this analysis as these two waves also include household balance sheet data, which enables a similar mobility analysis (see section 6.4.2.5). Both these waves fall in the period before the top-up of the sample (which occurred in wave 5).

Table 6.18: Voluntary saving mobility, waves 2 and 4

		Wave 4 quintiles					
		1	2	3	4	5	
Wave 2 quintiles	1	4.6	3.0	3.9	3.8	4.2	19.5
	2	3.4	3.3	4.0	4.4	5.2	20.3
	3	3.9	3.0	3.3	4.4	5.2	19.8
	4	4.2	3.1	3.4	3.5	5.1	19.3
	5	3.4	3.2	4.1	4.1	6.3	21.1
		19.5	15.6	18.7	20.2	26.0	100.0

Source: SALDRU; calculations by author

Each cell of table 6.18 represents the proportion of the overall sample that falls in that cell. This reveals that the total proportion of households in quintiles 1 to 3 either did not change or declined, while the proportion in quintiles 4 and 5 increased (see row and column totals). This indicates a general improvement in households' voluntary saving performance between the two waves. The general economic recovery during 2011 to 2013 most likely provided support for this tendency; however, this became less pronounced when growth weakened after 2014.

Respondents who moved from the lowest quintile into a higher category measured 14.9¹³³ per cent, while exactly the same margin¹³⁴ moved from a higher quintile, back into the lowest (first) quintile.

¹³³ Calculated as the sum of row 1, excluding cell (1:1).

¹³⁴ Calculated as the sum of column 1, excluding cell (1:1).

Taking the values on the main diagonal into account, movements were stickier around the two extremes (i.e. households that were in quintiles 1 and 5 during both waves), while more movement occurred among quintiles 2, 3 and 4 (as indicated by their relative lower diagonal values). There seems to be a general trend towards the upper-right side of the table, again indicating general improved saving prospects between the waves.

6.4.2 Balance sheet approach

This section provides the results for the calculation of voluntary household savings based on the balance sheet approach. The section starts with the calculation of household net worth, followed by some analysis of this variable according to age, income, poverty lines and mobility. Lastly, some distributional aspects receive attention. The data forms part of a distinct wealth module included only in waves 2, 4 and 5 of the NIDS study.

6.4.2.1 Voluntary household savings (wealth)

Households' net worth measured R5,2 trillion in wave 2 (2010). It increased to R7,2 trillion in wave 4 (2014/15) and reached R8,2 trillion in wave 5 (2017) (see table 6.19). This is equal to a nominal annualised growth rate of 6.9 per cent per annum (or 1.7 per cent in real terms) for the seven-year period, spanning wave 2 to wave 5.

Total assets rose by 7.2 per cent (annualised), with the strongest growth recorded by real estate assets (10.6 per cent). Financial assets lost ground over the whole period, but should be analysed with caution as certain items (including cash balances and the value of life insurance policies) were excluded¹³⁵ from wave 4 onwards. Financial assets more than doubled in value between waves 4 and 5.

Households' debt increased by 11.2 per cent between waves 2 and 5, with financial debt recording the fastest rise of 26.9 per cent.

The combined effect is that the asset to debt ratio declined from 13.8 times in wave 2 to 10.8 times in wave 5. However, during wave 4 it dropped to 8.5 times, which indicates that it did recover somewhat between waves 4 and 5. In general, assets outweigh debts comfortably, but the trend should be monitored in future to determine if the recovery is sustained.

¹³⁵ Cash balances were excluded due to them being considered "too sensitive". Life insurance policies were removed due to respondents having "no idea of the value of their policies" and because a lot of confusion existed between the "life insurance value and the pay-out value" (Brophy et al., 2018:62).

Table 6.19: Voluntary household net worth, waves 2, 4 and 5 (R billions)

	Wave 2	Wave 4	Wave 5
Real estate	R 4,125.3	R 7,662.0	R 8,360.0
Business	R 125.3	R 308.6	R 181.0
Financial	R 1,327.6	R 216.6	R 553.0
Assets	R 5,578.1	R 8,187.2	R 9,094.0
Real estate	R 363.0	R 616.3	R 653.0
Business	R 4.1	R 7.3	R 1.8
Financial	R 36.1	R 334.9	R 191.0
Liabilities	R 403.2	R 958.5	R 845.8
Total voluntary net worth	R 5,175.0	R 7,228.7	R 8,248.2

Source: SALDRU; calculations by author

As far as the composition of assets is concerned, figure 6.9 shows that real estate assets dominate the picture as they rose from 74.0 per cent of total assets in wave 2 to 93.0 per cent in wave 4 and decreased slightly to 92.0 per cent in wave 5. The contribution of financial assets declined significantly from 24.0 per cent to only 3.0 per cent in wave 4. It did recover somewhat to 6.0 per cent by wave 5.

Similar to the large impact that real estate assets had on the asset side, real estate related debt also dominated the liability side of the household balance sheet. It did, however, drop from 90.0 per cent of total debt in wave 2 to 77.0 per cent in wave 5. In contrast, financial debt rose from a mere 9.0 per cent in wave 2 to 23.0 per cent of the total outstanding debt by wave 5 (see figure 6.9).

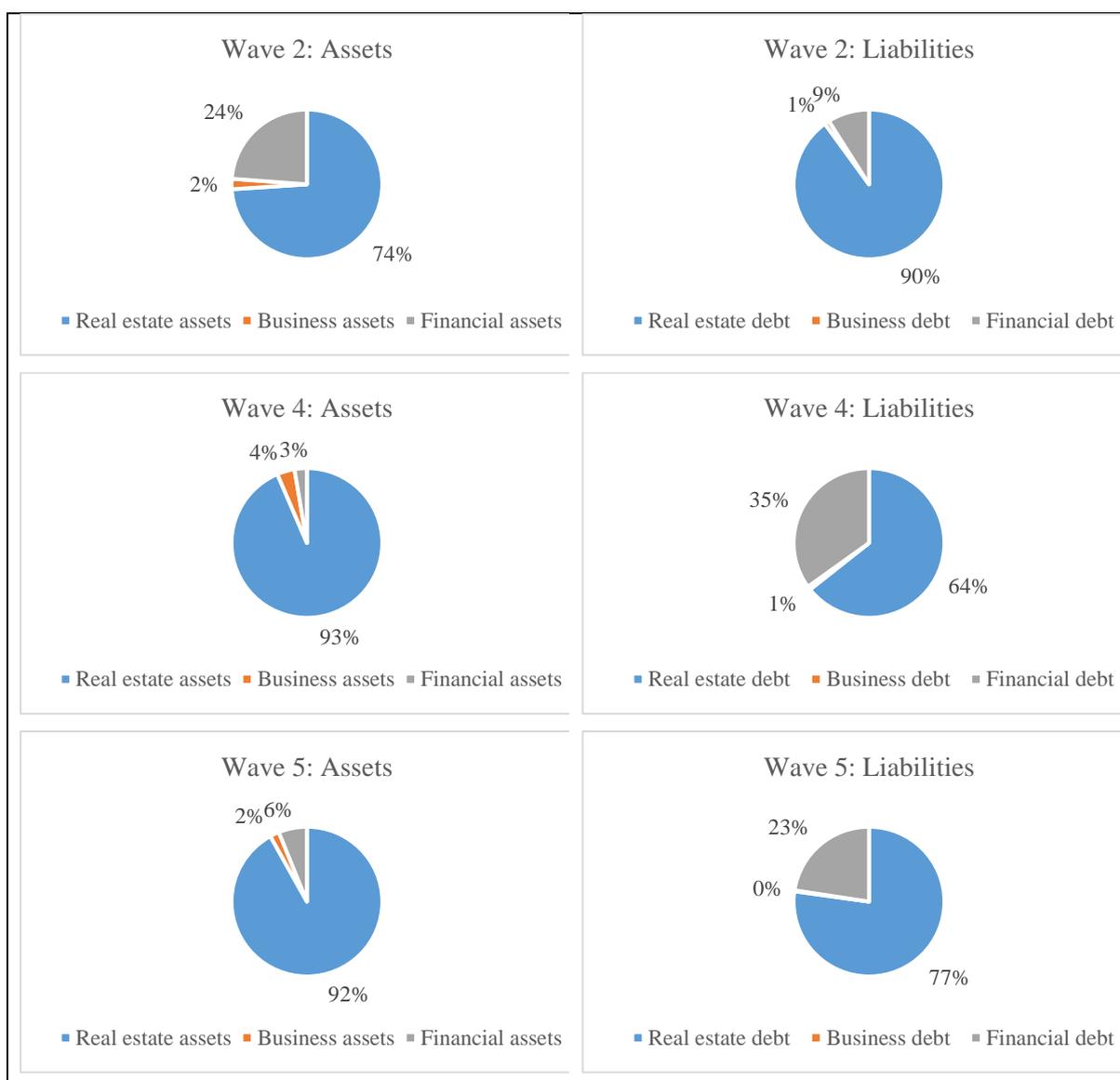


Figure 6.9: Composition of assets and debts, waves 2, 4 and 5

Source: SALDRU; calculations by author

When comparing the balance sheet findings for NIDS to that of the national accounts (see section 4.4.1) it indicates that, on an aggregate basis, balance sheet values are more easily estimated than income statement values (a problem that was pointed out in section 6.4.1.1 above). However, the composition of items differs significantly when compared to their national accounts counterparts.

Two salient items on the asset side are real estate and financial assets. The value of real estate assets of R8,4 trillion in wave 5 is more than three times higher than the R2,7 trillion recorded for residential buildings in the national accounts. In contrast to this, financial assets were the most important household balance sheet asset in 2017 in the national accounts, contributing

R8,6 trillion (66.8 per cent) to total assets compared to a mere R0,6 trillion (6.5 per cent) in the data of NIDS wave 5.

This implies that caution should be taken when any generalisation of the results to the South African population at large is considered. It also highlights the challenges faced by analysts and the need for more research to clarify some of these observed discrepancies.

6.4.2.2 Voluntary household savings: descriptive statistics

This section uses descriptive statistics to provide details of the distribution of voluntary household savings between households.

According to table 6.20 the average (mean) savings were significantly higher than the median (50th percentile) values for all three waves, despite the median reading increasing from R11,795 in wave 2 to R50,000 in wave 5, ignoring the effects of inflation. This provides evidence of an upwards skewed distribution of savings and is confirmed by the statistics calculated for skewness, which indicate large and positive values for all three waves. The (very) high kurtosis values indicate a “thin and tall” distribution around the median. This again highlights the significant size of the upwards outliers as they are able to skew the picture upwards, despite the greatest part of the sample having been placed around the median.

Table 6.20: Waves 2, 4 and 5: Quantiles and summary statistics of voluntary household savings*

	Wave 2	Wave 4	Wave 5
Observations	5 089	8 833	9 543
Mean	R 474,861	R 457,350	R 505,010
Std Dev	R 5,326,218	R 5,597,673	R 3,945,677
Maximum	R 328,000,000	R 189,000,000	R 350,000,000
75.0 % Quartile	R 120,000	R 150,000	R 225,591
50.0 % Median	R 11,795	R 40,197	R 50,000
25.0 % Quartile	R 285	R 5,000	R 5,000
Minimum	-R 17,500,000	-R 6,932,742	-R 1,580,453
Skewness	40.4	31.5	49.7
Kurtosis	2 024.0	1 052.9	3 872.5

*Post-stratification weights are taken into account. Zero values have been removed.

Source: SALDRU; calculations by author

As expected, the maximum and minimum values indicated significant outliers during all three waves; however, this was much more prominent on the positive (upper) side. Wave 5 data shows how the wealthiest households in the sample has indicated voluntary household savings of R350,0 million. Although not shown in table 6.20, values calculated for the 90th and 95th

percentiles indicated values of R788,205 and R1,53 million respectively. This means that significant voluntary wealth accumulation is taking place among the upper echelons of income earners in South Africa. It must be kept in mind that various types of savings (for example, those in pension and provident funds) are, by definition, still excluded here.

Table 6.20 also reveals facts that are of concern. Using wave 5 as an example, the minimum value of -R1,58 million shows serious debt problems faced by some households. Also not present in the table, the 10th percentile reading was -R1,038, which indicates that at least the bottom 10.0 per cent of the sample were experiencing negative voluntary savings, or negative net worth. Again, this position could become even worse when all assets and debts are included. Even for the 25th and 50th percentiles, the reading of R5,000 and R50,000 respectively, remains relatively small.

6.4.2.3 Voluntary household net worth according to age

An analysis of voluntary household net worth by age is done by using age cohorts and follows the methodology described in section 5.5.2.3.

There are different ways to analyse households' net worth according to age. First, the study looks at the percentage contribution made by different age cohorts to the total net worth of households. Based on theories such as the PIH and the LCH (see section 2.3.2), one would expect to see a gradual increase between age cohorts (up to retirement age) as individuals' pay-progression matures with age, while they are also able to pay off more debt, typically accumulated during the early working years.

Figure 6.10 shows that the net worth of households captured during wave 4 supports this notion best. That is, net worth rises gradually with age, it peaks for households aged¹³⁶ 55 to 64, and then decreases after age 65. Waves 2 and 5 also show a general rise in net worth with age, but much more volatility is observed. For example, wave 2 sees wealth peaking at age group 45 to 54 (earlier than expected¹³⁷), after which it drops sharply for age group 55 to 64, and then rises again after age 65.

¹³⁶ The "age" of the household refers to the age of the resident head.

¹³⁷ Inspection of the data for wave 2 shows that the average age for individuals in age group 45 to 54 was 49.4 years. This makes it very likely that by wave 4, that is 4 to 5 years after wave 2, a significant part of the outlying group had aged to the point that they then formed part of the next (55 to 64) group. Therefore the outlier self-corrected over time. Nevertheless, the observation for wave 2 remains out of kilter with expectations from theory.

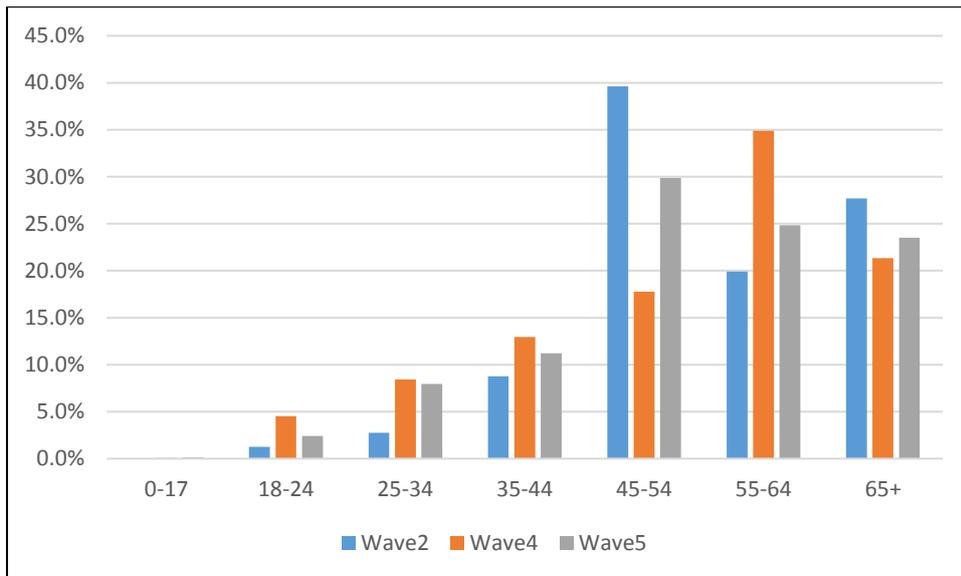


Figure 6.10: Net worth according to the percentage contribution of age groups, waves 2, 4 and 5

Source: SALDRU; calculations by author

Alternatively, one can look at the average contributions made (using, for example, the mean or median values) by the various age groups (see tables 6.21 to 6.23). As shown earlier in this section, the data has a skew distribution. Therefore it is best to use the median values for analysis.

Various anomalies are observed for the age groups “N/A” (no age was available for the household head) as well as for the age group 0 to 17 years. It is likely that individuals younger than 18 were unable to provide accurate estimates of their household wealth and therefore the values are treated as non-reliable.

Focusing on the findings for age groups 18 years and older, all three waves record a general upward trend in the median net worth as individuals aged, with a slight drop after age 65 years (with the exception of wave 5, which indicates a higher value for 65 and older). This general upward trend, and decline after age 65 (or post-retirement), strongly correlates with theory (such as the LCH/PIH). The age group 55 to 64 recorded the highest median net worth values in waves 2 and 4, while it recorded the second highest value in wave 5 (with age 65 and older recording the highest value in this instance). This outlier could be ascribed to the replacement (or top-up) of individuals during wave 5, which specifically focused on replacing higher income individuals.

Table 6.21: Breakdown of net worth according to age groups, wave 2

	N	Sum	Mean	Median	Per cent of total	Cumulative
N/A	1	R 200	R 200	R 200	0.0%	0.0%
0-17	17	R 350,566	R 20,622	R 10,000	0.0%	0.0%
18-24	240	R 28,189,792	R 117,457	R 5,000	1.3%	1.3%
25-34	776	R 60,847,560	R 78,412	R 5,000	2.7%	4.0%
35-44	1107	R 194,508,547	R 175,708	R 13,507	8.8%	12.8%
45-54	1173	R 880,648,815	R 750,766	R 12,059	39.6%	52.4%
55-64	896	R 442,155,181	R 493,477	R 15,040	19.9%	72.3%
65+	879	R 615,485,200	R 700,211	R 9,503	27.7%	100.0%
Total	5089	R 2,222,185,862	R 436,665	R 10,000	100.0%	

Source: SALDRU; calculations by author

Table 6.22: Breakdown of net worth according to age groups, wave 4

	N	Sum	Mean	Median	Per cent of total	Cumulative
N/A	11	R 420,180	R 38,198	R 31,981	0.0%	0.0%
0-17	23	R 1,264,518	R 54,979	R 35,000	0.1%	0.1%
18-24	656	R 72,665,301	R 110,770	R 12,750	4.5%	4.6%
25-34	1712	R 135,442,885	R 79,114	R 16,015	8.4%	13.0%
35-44	1760	R 208,386,140	R 118,401	R 29,324	12.9%	26.0%
45-54	1793	R 286,169,843	R 159,604	R 43,089	17.8%	43.8%
55-64	1524	R 561,707,232	R 368,574	R 50,000	34.9%	78.7%
65+	1354	R 343,363,838	R 253,592	R 48,689	21.3%	100.0%
Total	8833	R 1,609,419,937	R 182,205.36	R 35,010.00	100.0%	

Source: SALDRU; calculations by author

Table 6.23: Breakdown of net worth according to age groups, wave 5

	N	Sum	Mean	Median	Per cent of total	Cumulative
N/A	7	R 2,432,806	R 347,544	R 200,529	0.1%	0.1%
0-17	5	R 5,133,056	R 1,026,611	R 116,556	0.1%	0.2%
18-24	575	R 100,504,896	R 174,791	R 8,000	2.4%	2.6%
25-34	1913	R 333,130,011	R 174,140	R 15,060	8.0%	10.5%
35-44	1861	R 469,610,017	R 252,343	R 40,000	11.2%	21.8%
45-54	1853	R 1,249,682,729	R 674,411	R 56,305	29.9%	51.6%
55-64	1668	R 1,039,228,704	R 623,039	R 73,050	24.8%	76.5%
65+	1662	R 983,605,079	R 591,820	R 80,000	23.5%	100.0%
Total	9544	R 4,183,327,299	R 438,320.13	R 50,000.00	100.0%	

Source: SALDRU; calculations by author

Taking into account the findings from both the percentage contributions made and the median value analysis, it is evident that although both measurements provide a general upward trend, this trend is more prominent in the analysis of the median values.

6.4.2.4 Voluntary household net worth according to income

An analysis of net worth according to income in figure 6.11 indicates significant movement within lower quintiles (1 to 3), while the relative contribution of the two highest quintiles remained relatively stable between the two waves.

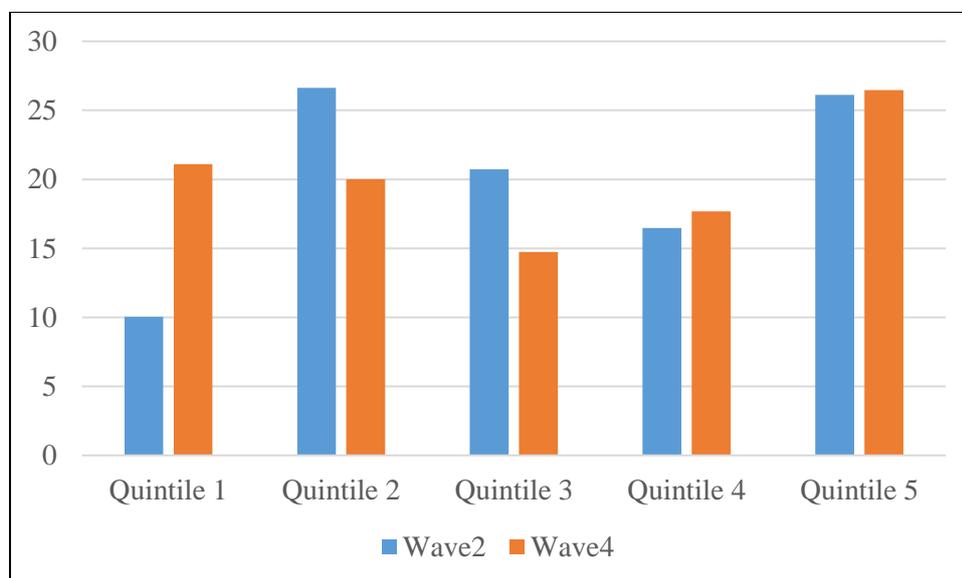


Figure 6.11: Voluntary household net worth according to income quintiles, waves 2 and 4

Source: SALDRU; calculations by author

Especially evident is the doubling of the net worth weight of quintile 1, indicating a significant improvement in households' wealth relative to higher income households. Unfortunately, much of the improvement seems to stem from relative weakness in quintiles 2 and 3 – both relatively low quintiles. The stable performance of quintiles 4 and 5 makes sense, as one would expect higher earning individuals to have the means to protect themselves financially.

6.4.2.5 Voluntary household net worth according to poverty lines

An analysis of net worth according to poverty lines in table 6.24 shows that 3.6 per cent and 19.9 per cent of households with net worth falling in quintile 5 and 4 respectively, actually came from households earning below the UPL. It appears as though the poorest of households are able to accumulate wealth over time. Debt could also play an important part in limiting the net worth position of households; however, the households with a higher income (those falling in the above 2x UPL category) dominated all quintiles. This can also be due to the significantly skewed distribution of wealth in the sample (see section 6.4.2.6).

Table 6.24: Net worth by poverty. Relative contribution to quintiles, wave 2

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Below LPL	3.2%	10.7%	9.2%	7.6%	1.2%
LPL to UPL	3.7%	11.5%	10.1%	12.3%	2.4%
UPL to 2x UPL	11.3%	29.5%	22.6%	25.0%	7.9%
Above 2x UPL	81.8%	48.3%	58.2%	55.1%	88.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: SALDRU; calculations by author

6.4.2.6 Voluntary household net worth mobility

In order to obtain a sense of the movement in voluntary net worth of households between waves, table 6.25 presents a transition matrix, which compares the proportion of the sample in wave 2 and wave 4 according to income quintiles. The methodology and reasoning is similar to that already described in section 6.4.1.5 above.

Table 6.25: Voluntary net worth mobility, waves 2 and 4

		Wave 4 quintiles					
Wave 2 quintiles		1	2	3	4	5	
	1	2.2	5.7	3.8	5.3	4.0	21.0
	2	1.7	6.1	4.4	3.7	4.1	20.0
	3	1.0	4.1	3.1	3.3	2.9	14.4
	4	1.6	4.6	3.7	3.7	4.3	17.9
	5	2.7	7.6	6.1	4.7	5.6	26.7
		9.2	28.1	21.1	20.7	20.9	100.0

Source: SALDRU; calculations by author

Some meaningful movements are observed, including that the proportion of the sample in the lowest quintile dropped from 21.0 per cent in wave 2 to only 9.2 per cent in wave 4, while that of the highest quintile dropped from 26.7 per cent to 20.9 per cent.

Households that moved from the lowest quintile in wave 2, to a higher quintile measured 18.8¹³⁸ per cent of the sample, while only 7.0¹³⁹ per cent fell from a higher quintile back into the lowest quintile.

¹³⁸ Calculated as the sum of row 1, excluding cell (1:1).

¹³⁹ Calculated as the sum of column 1, excluding cell (1:1).

Taking the values on the main diagonal into account, quintiles 2 and 5 had the highest retention rates, while the biggest movement occurred for individuals in quintile 1.

Overall these movements provide a challenge for the analyst to interpret, as they indicate that the lowest quintile reported significant relative improvements; however, simultaneously, the position of other “low” quintiles (2 and 3) deteriorated. It is also evident that a large part of quintile 1 (wave 2) households most likely moved only one quintile (to quintile 2 in wave 4). The last section of this chapter uses distributional analysis to provide additional insight into savings dynamics.

6.4.2.7 Voluntary household net worth distributional analysis

Insight into the distribution of voluntary household net worth between households can be obtained by using two measures, namely the Lorenz curve and the Gini coefficient.

The Lorenz curve is a graphic device that illustrates the degree of inequality in the distribution of a variable. The calculation is done on a cumulative basis, with the cumulative percentage of the population (sample) plotted on the horizontal axis while the cumulative value of the variable of interest is plotted on the vertical axis. A diagonal line is drawn as a reference line for perfect equality. The degree of inequality is shown by the deviation in the Lorenz curve from the diagonal, where a greater distance between the two lines equals a greater degree of inequality (Mohr, 2016:164-167).

In figure 6.12 the cumulative percentage of the sample is plotted on the horizontal axis, while the cumulative percentage of net worth (savings) is on the vertical axis. This analysis shows that net worth is distributed significantly unequally between households during all three waves for which data is available. This is evident from the great distance between the Lorenz curves and the diagonal line in all instances.

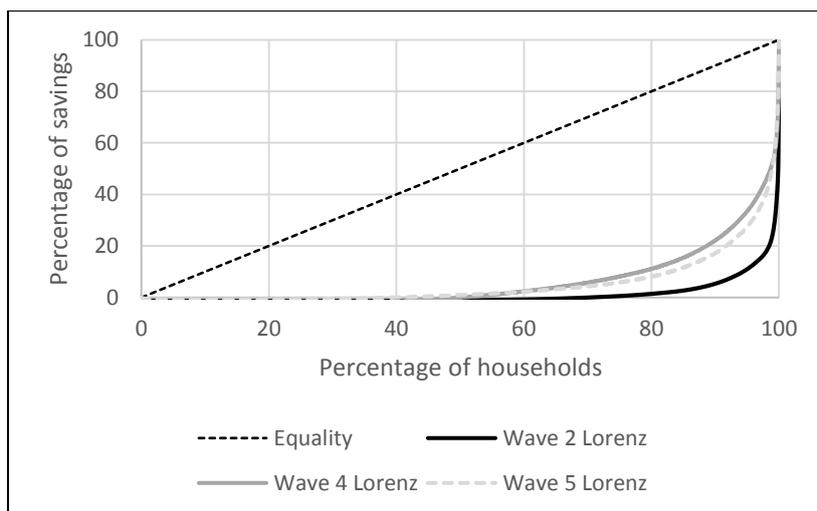


Figure 6.12: Lorenz curve of voluntary household net worth, waves 2, 4 and 5
 Source: SALDRU; calculations by author

Comparing changes between waves there is a marked improvement in the distribution of voluntary household net worth between waves 2 and 4. This is illustrated by the leftward shift in the Lorenz curve between waves 2 and 4. Thereafter the situation deteriorates again slightly as the curve moves back (rightward) for wave 5.

In order to obtain further quantifiable evidence of these observed trends, the Gini coefficient (or ratio) is utilised. This coefficient is obtained by dividing the areas of inequality (the area between the Lorenz curve and the main diagonal line) by the area of the right triangle formed by the axes and the diagonal line. The Gini coefficient can vary between zero and one, with zero representing an absolute equal distribution, while a value closer to one indicates a more skewed distribution (Mohr, 2016:167-168).

The Gini coefficient calculated in this way provides a value of 0.980 for wave 2 and 0.891 for wave 4. This confirms that voluntary household net worth is highly unequally distributed as both values are (very) close to one. It also confirms the improvement between waves as the coefficient dropped by 8.9 percentage points to 0.891 for wave 4. The Gini coefficient measured 0.894 during wave 5, confirming the slight deterioration for the last wave.

Concluding remarks based on the findings are presented in chapter 7.

Chapter Seven: Conclusions and recommendations

7.1 Introduction

In this chapter the conclusions and recommendations are presented. The intention of this research is to analyse and evaluate the size and composition of voluntary household saving in South Africa for the period 2005 to 2017. In order to be able to do this, an applicable definition of voluntary household saving is compiled, which states that voluntary household saving(s) is defined as all household saving(s), excluding any amount (fully or partly) sponsored by either an employer or the state. The analysis uses both an income statement (saving) as well as a balance sheet (savings or net worth) approach. This dual approach assists to obtain a more comprehensive picture of voluntary household saving in South Africa.

The study's two main research questions are:

1. What are households' allocations and preferences related to voluntary saving(s) instruments in South Africa?
2. How have households' allocations and preferences related to voluntary saving(s) instruments in South Africa changed over the period 2005 to 2017?

This chapter consists of section 7.2 that summarises the main findings, while recommendations and policy implications follow in section 7.3. The limitations of the study and ethical considerations are dealt with in sections 7.4 and 7.5 respectively. The scope for future research is discussed in section 7.6.

7.2 The main findings

The main findings of the study start with the results from the analysis of the national accounts, followed by the results from the IES, the LCS and the NIDS.

7.2.1 National accounts

According to the national accounts, gross national saving peaked during the early 1980s at levels above 30.0 per cent of GDP, after which it started to decline gradually. By the early 2000s it had almost halved to around 16.0 per cent of GDP. It increased marginally around

2010 to 18.0 per cent of GDP, but by 2017 it again measured 16.2 per cent – that is more or less at the same level that it was during the early 2000s.

The three contributors to national saving are general government, corporates (financial and non-financial corporations) and households (including NPISHs). An analysis of the three underlying sectors shows that the corporate sector was the only sector that managed to save during the 2000s. The NDP (introduced in 2013), set the optimistic target of increasing gross national saving to 25.0 per cent of GDP by 2030. This study concludes that, given the recent depressed trend in national saving, the NDP's target is highly unlikely to materialise.

Focusing on the household sector, two measurements, namely the income statement approach and the balance sheet approach, are used for analysis.

Household saving, as measured by the income statement approach, shows a long-term declining trend in net household saving expressed as a percentage of GDP, which after 2006 turned negative (dissaving occurred). This decline stabilised around 2008, but remained negative as net household saving fluctuated around the -1.0 per cent to GDP level between 2008 to 2015. After that it improved slightly as 2017 recorded a small positive value of 0.2 per cent of GDP.

Two major determinants of the trend in household saving – as measured by the income statement approach – are identified, namely pressure on the disposable income of households and final consumption expenditure of households. Compared to the size of the economy, both of these determinants have been trending downwards, but over time the buffer (gap) that existed between them has been eroded to the point where it was completely eroded by 2006. After 2010, however, the downward trend in both the disposable income of households and final consumption expenditure of households (seems to have) stabilised somewhat, which assists to explain the stabilisation of the saving rate.

Individual line items of the national accounts' households' income statement that provide hints at voluntary saving behaviour, included income from property and non-life insurance premiums. In 2005 and 2017 respectively, net property income contributed 17.6 per cent and 9.1 per cent to gross disposable income. Similarly, net non-life insurance premiums are 5.4 per cent and 6.5 per cent respectively of gross disposable income. Both these items caused negative pressure on saving.

Turning to the balance sheet approach, the study finds that households' net worth (or wealth) rose significantly over the period 2005 to 2017 at an average annualised increase of 10.9 per cent. Compared to the size of the economy, households' net worth peaked in 2006 at 245.4 per cent of GDP. Thereafter it dropped to 201.9 per cent of GDP in 2008, as the aftermath of the GFC impacted negatively on asset valuations. By 2017 it had, however, recovered to 233.0 per cent of GDP.

A decomposition of the drivers of net worth indicates that the net revaluation of assets is primarily responsible for its rise. Although this conforms to prior expectations, it complicates the recommendations to be drawn from the study, especially regarding the flow through or link between saving and savings is found to be almost non-existent. This receives more attention in the recommendations below.

Voluntary savings instruments form a significant part of the wealth portfolios of households. Voluntary savings as measured in 2005 and 2017 represented respectively 58.8 per cent and 52.7 per cent of households' assets, and 72.0 per cent and 62.6 per cent of households' net worth. This was calculated by excluding the items for other non-financial assets (in compliance with the definition of this study), as well as the interest in pension funds and long-term insurers (which are mainly of a mandatory nature). This is a significant finding as it indicates that the bulk of household's wealth is kept in some form of voluntary accumulated asset.

Using flow-of-funds data from the financial account shows that in 2003 households switched from being net lenders to net borrowers. Between 2005 and 2017 the average net funding requirement was R32,0 billion per year, or 1.2 per cent of GDP. An analysis of the underlying assets and liabilities indicate that the switch (deterioration) was primarily due to the rise in households' debt, caused by a sharp increase in mortgage debt (2004-2008) and bank loans (2010-2012). Whereas mortgage advances are linked to developments in the residential property market (that is, it is seen as secured lending), bank loans also include unsecured loans, which makes them higher risk items to both banks and households themselves.

7.2.2 Income and Expenditure Survey and Living Conditions Survey

This section highlights the results from the IES and LSC surveys. Given the nature of these surveys (they are focused on gathering income and expenditure data for households), only the income statement approach can be used for the analysis.

To simplify the analysis, the IES data is grouped into eight categories of voluntary household saving. The voluntary saving category for residential property and improvements is the largest in terms of value (29.6 per cent of total), followed by net bank savings (26.4 per cent). Life insurance and endowments (13.7 per cent) was the third largest, while the repayment of loans (8.8 per cent) also featured prominently. Only the voluntary part of contributions to pension, provident and annuity funds is taken into account and equalled 2.4 per cent of total voluntary saving.

In total, 10 546 households reported participation in some type of voluntary saving instrument. This is equal to more or less half (49.8 per cent) of the number of households that reported income. Based on value, voluntary saving equalled 77.5 per cent of all households' saving.

The total mean annual voluntary saving was R18,934, while the median (50th percentile) voluntary saving was significantly lower at R2,513. This provides evidence of a highly skewed voluntary household saving distribution, skewed towards the right, and can be explained by the skew distribution of income in South Africa.

For the LCS, voluntary saving is grouped into seven main categories, as data for one of the categories, which features in the IES (repayment of loans), was not available. In this case residential property and improvements stays the largest voluntary saving category, making up 34.7 per cent of total voluntary saving. The second largest category is shares (listed and unlisted) with 25.8 per cent (IES: 8.0 per cent), followed by net bank savings with 14.8 per cent (IES: 26.4 per cent).

Some interesting changes in voluntary saving patterns can be observed by comparing the results from the IESs and LCSs. One notable difference is an increased preference for shares. Life insurance and endowments, as well as bank savings, which both featured strongly in the IES, became less important. As bull markets were experienced on the JSE for both periods (i.e. 2005/06 and 2014/15) it is difficult to pinpoint the drivers of change in household's preferences related to listed shares between the two surveys. The fact that the return on shares exceeded inflation may be an explanation for this tendency. Stokvels also increased its share of total voluntary saving as it measured 9.3 per cent in the LCS, compared to only 2.2 per cent in the IES.

A significant finding is that voluntary household saving contributed almost two-thirds of all saving items, for both the IES and LCS.

Both surveys showed that the Western Cape and Gauteng recorded the highest voluntary saving, while households living in Limpopo Province recorded the lowest. The findings correspond to intuitive expectations if the relative economic positions of the different provinces are taken into account.

Households based in urban formal settlements reported voluntary saving well above the median of the sample, while rural formal households recorded below median values. The LCS provided an additional breakdown according to settlement types, which indicates that traditional areas (communally owned land under the jurisdiction of a traditional leader) recorded the lowest voluntary saving. Voluntary saving in urban informal settlements was also below average, but outperformed rural formal areas, albeit marginally.

White and Indian/Asian headed households reported voluntary saving well above the median of the sample. African headed households reported the lowest values during both surveys, which was also below the median. Coloured headed households came second last for both surveys, but their median saving dropped to below the sample median in the LCS, in contrast to that for the IES when it was still above the median. Reasons for these differences remain unclear.

Gender is another significant determining factor. The household's "gender" is determined by the gender of its household head. Male headed households reported voluntary saving above the sample median, while female headed households reported below median values for both surveys. This is a worrying tendency as female headed households accounted for 40.6 per cent and 43.1 per cent respectively of the IES and LCS samples that reported some type of voluntary saving.

Households comprising two, and three to five individuals, recorded voluntary saving more than the sample median for both surveys. Households with 11 or more individuals recorded the lowest saving, while those with six to ten individuals are also struggling to save. Individuals living alone outperformed the last two categories mentioned, but their saving remained below the sample median. The conclusion is therefore that households composed of less than two or more than five members, find it more difficult to save on a voluntary basis.

Poverty lines are used to differentiate between the levels of income of households. Four brackets were created, namely: below the LPL, between the lower and upper poverty line, between the upper poverty line and two times the upper poverty line, and above two times the

upper poverty line. A general upward trend in voluntary saving, as income increase (or as poverty decrease), is present. As expected, the bulk of voluntary household saving comes from more affluent households, or those earning more than twice the amount of the UPL in both surveys. However, a matter for concern is that the median voluntary saving recorded by households falling in the three lower brackets differ only marginally from one other. This indicate how difficult it is for these households to set aside voluntary saving, despite falling between the upper poverty line and two times the upper poverty line bracket, or having sufficient money to at least buy both food and non-food essentials (as per the definition of the UPL).

7.2.3 National Income Dynamics Study (NIDS)

Between waves 1 and 5 of NIDS, total voluntary household saving declined marginally from R58,7 billion in 2008 to R57,9 billion in 2017 (ignoring the effects of inflation). However, unexpected volatility occurred between waves, for example, total voluntary household saving measured R428,9 billion in 2015.

The study finds that up to wave 4, expenditure is consistently and significantly underestimated. At the same time there was an unexpected large increase in income during wave 4. This caused voluntary saving to be significantly overestimated. During wave 5 the situation unexpectedly reversed as income increased slightly, while expenditure increased sharply (an increase of 40.3 per cent was recorded for expenditure between waves 4 and 5).

Other data related problems are encountered when descriptive analysis is performed on the individual waves. Using measures such as skewness and kurtosis, as well as by comparing the mean to the median values, provides evidence of a skew distribution within all the waves. Significant outliers (both positive and negative) are also present.

Based on the volatility in the data as well as the distributional issues, it becomes clear that the NIDS data should be used with caution for the purpose of calculating household saving with an income statement approach. This problem corresponds to the findings of various other researchers as documented earlier (see section 6.4.1). Despite the shortcomings, the longitudinal data of NIDS still provides researchers with the ability to look into distributional questions that would otherwise be lost by focusing only on National Account level data.

The study finds that labour market income (typically salaries and wages) is by far the most prominent source of income to households during all five waves. Investment income is the second largest source of income.

Non-food related expenditure is the largest spending item and averaged 70.5 per cent of expenditure during all five waves. Food expenditure averaged only 23.6 per cent. These relative contributions are in accordance with expectations compared to, for example, the weights of similar items used in South Africa's CPI.

Even though the total saving remained positive, a closer inspection of the data indicates that (on average) households were under severe financial stress during all five waves (that is from 2008 to 2017). An analysis of the various age groups compliments this finding, with the largest dissaving reported by households aged 55 to 64 and older than 65. This finding corresponds with expectations for households with a (likely) retired resident head (older than 65), but not necessarily for those aged 55 to 65, usually expected to be at the top end of their earnings curve. In summary, the NIDS data shows that age groups 25 to 54 were most able to balance their budgets, or at least to limit their dissaving.

NIDS data to calculate savings from a balance sheet approach, indicates that households' net worth rose from R5,2 trillion in wave 2 (2010) to R8,2 trillion in wave 5 (2017). This is equal to a nominal annualised growth rate of 6.9 per cent per annum (or 1.7 per cent in real terms) for the seven-year period spanning wave 2 to wave 5.

Total assets rose by 7.2 per cent (annualised), with the strongest growth recorded by real estate assets (10.6 per cent). Household debt increased by 11.2 per cent between waves 2 and 5. The combined effect is that the asset to debt ratio declined from 13.8 times in wave 2 to 10.8 times in wave 5. However, during wave 4 it dropped to 8.5 times, which indicates that it did recover somewhat between waves 4 and 5. In general, the assets of households outweigh their debts comfortably, but this trend should be continuously monitored.

The study finds that, in general, balance sheet values are estimated with better accuracy than income statement values. This includes estimates of the size (nominal value) of the household balance sheet as well as trends. However, the composition of assets and debt items are again not in accordance with expectations; for example, real estate assets are significantly overestimated while financial assets are underestimated. This is in stark contrast to the findings from the national accounts, which indicates almost the exact opposite composition of

households' assets. One possible reason for this discrepancy could be due to recall bias in household surveys since it is usually difficult for the average household to quantify their financial assets. This problem is not encountered in the national accounts, where data is obtained from financial institutions on behalf of the household sector. However, this remains speculative and indicates scope for future research.

Similar to the findings for saving, measures such as skewness and kurtosis, as well as comparing measures of the mean to the median values, again provide evidence of a skew distribution of savings (or net worth) within all three applicable waves.

Based on theories such as the PIH and the LCH (see section 2.3.2), one would expect to see a gradual increase in net worth between age cohorts (up to retirement age) as individuals' pay-progression usually matures with age, while they are also able to pay off more debt typically accumulated during the early working years. Although generally present in all three waves, this is most relevant for the net worth of households captured during wave 4. That is, net worth rises gradually with age, it peaks for households aged 55 to 64, and then decreases after age 65. Waves 2 and 5 also show a general rise in net worth with age, but much more volatility is observed.

The age group 55 to 64 recorded the highest median net worth values in waves 2 and 4, while it recorded the second highest value in wave 5 (with age 65 and older recording the highest value in this instance).

An analysis of net worth according to income indicates significant movement within lower quintiles (1 to 3), while the relative contribution of the two highest quintiles remained relatively stable.

Poverty lines show that 3.6 per cent and 19.9 per cent of households with net wealth falling in quintiles 5 and 4 respectively, actually come from households with earnings falling below the UPL. One explanation for this phenomenon is that even the poorest of households can accumulate wealth over time; however, it is not according to expectations. It must be kept in mind that debt could also play an important role in limiting the net worth position of households.

By using a transition matrix, the mobility of voluntary household net worth was calculated. This was done for wave 2 and wave 4 according to income quintiles. The study finds that 18.0 per cent of the sample moved from the lowest quintile in wave 2 to a higher quintile in wave

4, while only 7.0 per cent fell from a higher quintile back into the lowest quintile. Taking the values on the main diagonal into account, quintiles 2 and 5 had the highest retention rates, while most movement occurred for individuals in quintile 1.

The study finds that net worth is significantly unequally distributed between households in all three waves. Nevertheless, by comparing changes between waves there is a marked improvement in the distribution of voluntary household net worth between waves 2 and 4. This is illustrated by a leftward shift in the Lorenz curve. Thereafter the situation deteriorates again slightly as the curve moves back (rightward) for wave 5.

7.2.4 Other

The definition of voluntary household saving as used in this study relies strongly on the multi-pillar retirement provision system developed by the World Bank (1994 and 2005), which consists of five pillars: a non-contributory (zero) public pillar, a mandatory contribution public pillar, a mandatory contribution private pillar and two voluntary pillars. The study finds that South Africa already covers four of the five pillars (with only a mandatory contribution public pillar being absent).

The study finds that saving(s) items found in the two voluntary pillars, as measured by both an income statement and balance sheet approach, contribute significantly to household saving(s) in South Africa.

7.3 Recommendations and policy implications

7.3.1 Recommendations

Given the analysis done in this study it is recommended that the updating of the relevant sections of the national accounts dealing with households' saving (NIPA), as well as savings (household balance sheet) by the SARB and StatsSA, is necessary and urgent. If viable, these accounts should be deconstructed to provide more insight into the constituents of the various line items. It is also argued that the current practise of combining households and NPISHs creates confusion and should be split into separate sheets or accounts.

The methodology and calculation of the adjustment for the change in net equity of households in pension fund reserves must receive attention. This is a significant contributing variable to

household saving and as such can have a big impact on the results when the national accounts are used.

The study highlights the link between saving (income statement approach or flow measurement) and savings (balance sheet approach or stock measure). Theoretically, the three contributing factors to the change in households' wealth are net revaluations, net saving and capital transfers. It is recommended that these (and possible other) factors be investigated, and included in the *SARB Quarterly Bulletin*. This will help identify the drivers of household wealth and (hopefully) identify policies that will encourage additional saving by households.

The findings and conclusions of the study highlight the fact that the World Bank's multi-pillar pension design system is highly relevant for South African. The study thus recommends that more research be done that focuses specifically on constructing a holistic view of all five pillars for South Africa. This will act as vital information and a planning tool for government to determine if South Africa is heading in the right (or sustainable) direction as far as saving(s) and retirement provisions are concerned.

7.3.2 Policy implications

Given the various updates and adjustments required to the national accounts data, as well as the various data related issues highlighted in the household surveys and study, the policy implications of this study must be treated with caution. However, despite these concerns a few problem areas were encountered repeatedly, which government should consider. These include:

Demographics (Location, population group, gender): Households in rural formal areas (notably traditional areas), with African or Coloured female headed households seem to find it very difficult to save. Financial literacy programmes targeting these groups could be a valuable first step to address this issue.

Demographics (Dependency ratio): Household size is a meaningful differentiator, with single (individual person) households and those households comprising of five or more individuals faring worst when it comes to their ability to save. Financial literacy and family planning programmes aimed at these groups may be valuable to address this problem.

Household credit and debt levels: This study, as well as the empirical literature review, provides ample evidence that financial deepening (notably access to credit) have adverse

effects for households' ability to save. Once again financial literacy programmes and policies aimed at curbing unsecured lending may be important.

Stokvels is an important saving instrument in South Africa, both in terms of the number of participants and the value of accumulated savings. However, it still forms part of the informal, unregulated financial sector. It may be necessary to include stokvels under the ambit of the twin peaks regulation in South Africa in future.

7.4 Limitations of the study

The availability of household level data proved to be a significant challenge. This raised questions about whether to obtain primary data or to use secondary (existing) data. Obtaining primary data includes various challenges including questionnaire design and sampling methodologies, financial implications¹⁴⁰ and ethical considerations.

The default option is therefore to make use of existing data (hopefully in the future, funding for the use of primary data will become available). However, using secondary data also poses various challenges, including the fact that the researcher has no choice but to adapt to the format in which the data is made available.

This had a direct limiting effect on the definition of voluntary household saving, as it implicates that a trade-off had to be made between the scopes of the definition versus available data. The definitions used in this study should therefore not be regarded as “cast in stone” and can be adjusted as possible new data for households become available in future.

The voluntary “fourth pillar”, termed “family networks and housing” by the World Bank, proved especially difficult to encapsulate into the definition of voluntary household saving, as it is broadly defined and in most cases acts as a residual (or catch net) for all items that do not conform to the definitions of the other pillars. Important for South Africa is the prevalence of informal saving products, for example, stokvels (see section 3.7). This provides scope for future studies dealing with the topic of voluntary household saving.

¹⁴⁰ During the research proposal stage (2015), quotes were obtained from the Khayabus Survey of Ipsos, a well-known nationally representative omnibus survey in South Africa, covering 3 500 adult participants. At that stage prices ranged from R12,250 for a “Yes/No” type of question, to R85,500 for an open-ended question (Ipsos, 2015).

Foreign assets held by South African residents are another challenging category of saving that provides scope for future research. The taxation of income earned and assets held abroad by South Africa residents remains a pressing issue.

The practical implication of the conceptual difference between saving and savings, or saving and wealth, on any study related to saving cannot be overemphasised. Most researchers (including the SARB) are wrestling with this issue, which needs additional clarification and simplification through practical research. It is most likely that the accounting sciences can provide assistance in this regard.

Lastly, the integration of the results from the various surveys, studies and the national accounts, proved to be a major challenge.

7.5 Ethical considerations

Ethical clearance for the study was obtained prior to commencing with the study from the Research Ethics Review Committee, School of Economic Sciences, Unisa. Therefore, the study complies with the Unisa Policy of Research Ethics.

Secondary data is used, which in all cases has been anonymised. However, subjects such as income and race remains highly sensitive issues in South Africa and are treated with circumspection as far as possible.

7.6 Scope for future research

Topics identified for future research include: a detailed analysis of the contrasting findings of the allocation of households' assets between various surveys and the national accounts; analysing voluntary household saving(s) using primary data surveys; foreign saving(s) of South African residents; the role of non-tangible assets (for example, cryptocurrencies and goodwill) in households' savings; and the use of stokvels as a saving instrument by households in South Africa.

This study developed a preliminary questionnaire to specifically differentiate between the various saving motives of households (see Annexure A). It is based on the World Bank's pension provision pillars, but is generalised to cover all aspects of saving, not only saving for retirement purposes. In this regard, the author approached the Bureau of Market Research (BMR)

at Unisa. The Buro is known as a market leader in South Africa as far as research related to households' finances are concerned. Since 2011, the BMR – in conjunction with Momentum – runs an annual Household Financial Wellness Survey.

During a meeting in August 2018 two representatives of the BMR indicated that there is scope for specific themes to be included in the survey. They indicated that in future it could be possible to include a selection of questions from the questionnaire in the above mentioned survey.

Apart from this, there is also the option to get access to some of the BMR's privately held data from previous years' surveys to complement the work done already in this study. However, these are left to future research endeavours.

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Annexure A: Multi-pillar household saving questionnaire

The aim of this research is to gather information about the saving and wealth creation decisions of South Africans. It uses the World Bank's multi-pillar approach, which broadly differentiates between social assistance, social security, and mandatory and voluntary savings. The goal is to test the sufficiency of the various saving and wealth creation pillars in South Africa. This will assist policy-makers in making informed decisions about some very pressing issues facing South Africa, including the possibility of introducing some form of broad based social security fund.

Demographic info (only if used as a stand-alone questionnaire)

(Suggestions, details to be finalised with statistician)

Age

Gender

Population group

Education level

Marital status

Province

Household size

Are you the head of the household?

Net monthly income (take-home pay after-tax) *(suggest using income brackets)*

Section 1

This section asks about social assistance (grant) payments by the South African government.

1a Have you ever received any financial assistance (e.g. grant) from government?

Yes

No

Yes, but not during the past 12 months

If your answer to 1a is "No" or "Yes, but not during the past 12 months", please move to the next section.

1b What type of grant do you receive?

Old age

War veteran

Disability

Foster care

Care dependency

Child support

Grant-in-aid

Other

1c What amount do you receive monthly? (In rands, on average during the past 12 months.)

[value]

Don't know/uncertain

1d Are you able to save part of the money you receive monthly?

Yes

No

Don't know/uncertain

1e If you answered "yes" to 1d, how much of the money do you save monthly? (In rands, on average during the past 12 months.)

R0 – R50

R50 – R200

More than R200

Don't know

Section 2

This section asks whether you are/were part of a mandatory occupational retirement or pension fund. This means that an employer/employee relationship (or contract) exists between you and your employer, both you and your employer contribute towards your retirement, and this is a compulsory arrangement (i.e. your employment contract stipulates that you have to take part in the scheme).

2a Have you ever been part of a mandatory occupational pension scheme?

Yes

No

Yes, but no longer employed

If your answer to 2a is "Yes, but no longer employed", please continue to 2f. If "No", please move to the next section.

2b What type of pension scheme is/was it?

A defined contribution fund is where the benefit is based on the contributions paid to the fund plus investment performance and costs. The member bears the risk of poor investment returns and costs increases. A defined benefit fund is where the retirement benefit is based on a member's final salary and is calculated by using a formula. The employer bears the risk of poor investment returns and costs increases

Defined contribution fund

Defined benefit fund

A mix of both

Don't know

2c What type of fund is/was it?

In a pension fund the member is required to purchase an annuity with at least two-thirds of the benefit. In a provident fund the member may take the entire benefit in cash

Pension fund

Provident fund

Don't know

2d What amount does your employer contribute monthly? (In rands, on average during the past 12 months.)

[value]

Don't know

2e What amount do you contribute monthly? (In rands, on average during the past 12 months)

[value]

Don't know

2f What is the current value (in rands) of all your mandatory occupational pension fund savings, which remains in some form of annuity (this means it was not paid out to you)? (This should include retirement savings from previous mandatory occupational funds.)

[value]

Don't know

2g If you are uncertain about 2f, can you give an estimate of the current value (in rands) of all your mandatory occupational pension fund savings?

R0 to R500 000

R500 000 to R2 000 000

More than R2 000 000

Don't know

Section 3

This section asks whether you voluntarily contribute/contributed to a retirement fund. For example, if you are self-employed, or if your employer did not have an occupational scheme.

3a Have you ever voluntarily contributed towards a retirement fund? (This includes additional (voluntary) contributions made by existing occupational retirement fund members.)

Yes

No

Yes, but no longer employed

If your answer to 3a is "Yes, but no longer employed", please continue to 3d. If "No", please move to the next section.

3b What type of fund do/did you belong to?

Pension fund

Provident fund

Retirement annuity

Other

Don't know

3c What amount do you voluntarily contribute monthly? (In rands, on average during the past 12 months.)

[value]

Don't know

3d What is the current value (in rands) of all your voluntary retirement fund savings?

[value]

Don't know

3e If you are uncertain about 3d, can you provide an estimate of the current value (in rands) of all your voluntary retirement fund savings?

R0 to R500 000

R500 000 to R2 000 000

More than R2 000 000

Don't know

Section 4

This section is concerned about all your other voluntary savings (i.e. savings other than retirement fund contributions, which were covered in questions 2 and 3). These can include items such as residential property, financial assets (e.g. bank deposits or shares), livestock, business interests, saving clubs (e.g. stokvels) or any other type of saving. What is important is that this includes money that you save (or invest) voluntarily with the aim of improving your financial future or to build your wealth.

4a Do you voluntarily save part of your income?

Yes

No

Don't know/not applicable

4b What amount do you voluntarily contribute monthly to the following types of items? (In rands, on average during the past 12 months. This can be an estimate.) If you do not contribute to an item, kindly indicate this by making an “x” next to it.

Residential property (loan repayment and improvements) [value]

Other property (loan repayment and improvements) [value]

Bank deposits [value]

Life insurance and endowments [value]

Shares, unit trusts, ETFs [value]

Stokvel [value]

Business interest [value]

Intra-family commitments [value]

Repayment of loans [value]

Other [value]

The next questions are about your wealth. Wealth can be measured by taking the market value of your assets less what you still owe on them (assets less liabilities). This focuses only on you as individual. For example, if you and your spouse are equal co-owners of your property, only include the net value of your 50 per cent.)

4c Can you provide the value of the following items you may own, using their market value less what you still owe on them? (In rands. This can be an estimate.) If you do not own an item, kindly indicate this by making an “x” next to it.

Residential property (market value less outstanding bond)	[value]
Other property (market value less outstanding bond)	[value]
Household content (market value less any loans on this)	[value]
Bank deposits (balance)	[value]
Life insurance and endowments	[value]
Shares, unit trusts, ETFs (market value)	[value]
Stokvel (market value/balance owing to you)	[value]
Business interest (market value less business loans)	[value]
Livestock (market value)	[value]
Other	[value]

4d In my opinion, the best asset classes for building wealth are: *(Kindly indicate your top three choices by writing the numbers 1 to 3 next to them, where 1 is your favourite.)*

Residential property

Other property investments

Bank deposits

Life insurance and endowment policies

Shares or equity ownership

Stokvels

Starting/buying a business

Livestock

Other

4e In my opinion, the factors that contribute most to my wealth creation are: *(Kindly indicate your top three choices by writing the numbers 1 to 3 next to them, where 1 is your favourite.)*

Saving part of my income to periodically buy more assets

Asset price inflation

Market movements

Being able to identify good opportunities

Pure luck/speculation

Inheritances

Social assistance (grant) payments

Other factors

4f In my opinion, the factors that limited my wealth creation are: *(Kindly indicate your top three choices by writing the numbers 1 to 3 next to them, where 1 is your favourite.)*

I rather buy goods than save

My living expenses are too high

I have too much debt

I need financial literacy

I feel excluded from financial institutions

Other factors

Section 5

This section is interested in your views should South Africa introduce a mandatory contribution public pension system in future. Proposals for the creation of a NSSF dates back to 2007 and during 2016, a draft paper was released and discussed at the National Economic Development and Labour Council (Nedlac). Details are limited, but suggestions include, for example, that employers and workers must contribute a combined 12 per cent of qualifying income, up to a pre-determined limit. Workers with an income below a pre-determined level will be subsidised by government. The aim is to close the gap that exists between social assistance grants and current private sector provisions and to create “social solidarity” where “everyone contributes according to their means, while receiving benefits according to their needs” (Business Day, 2016a; National Treasury 2007:110; National Treasury 2012c:77-80).

5a Do you think that South Africa needs a social security system?

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

5b Will you be willing to contribute part of your income to a social security system?

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

The END.

Thank you very much for taking the time to complete the survey.