Effects of Household debt on economic growth in South Africa

Rachael Mulenga Bwalya

G18B3828

0009-0001-4055-1312

https://orcid.org/0009-0001-4055-1312

A THESIS

In

Economics

Presented to the department of Economics and economic history.

Rhodes University

In Fulfilment of the Requirements for the Degree of Master of Economics

Supervised by Prof Juniours Marire

December 2023

TABLE OF CONTENTS

ACKNOWLEDGEMENTS

I would like to express my gratitude to a few individuals without whom my thesis would not have been attained. First and foremost, I thank the Lord Almighty for the opportunities and blessings that have come my way and for giving me strength and perseverance throughout my studies.

Secondly, I would like to express a deep gratitude to my supervisor Prof Juniours Marire for the continuous dedication, guidance, motivation, understanding, suggestion, encouragement, patience, and insightful comments and feedback throughout the study.

Thirdly, I am thankful to my parents Mr. Samuel Bwalya, Mrs Mildred Bwalya, and Mrs Emelia Ng'ambi for the unwavering support, love, and sacrifices made during this journey.

Lastly, my sincere gratitude and love to my family and friends for their motivation and emotional support during the study. This accomplishment would not have been possible without their love and emotional support.

ABSTRACT

South Africa's household debt relative to GDP has risen rapidly over the past decade. There is concern that high levels of household debt may decrease spending in the future and hence in the long run slow down economic growth. Thus, this study investigates the impact of household debt on growth in South Africa from 1987Q3 to 2022Q1. The research draws upon first-generation theories which include the absolute income hypothesis, life cycle hypothesis, and permanent income hypothesis, and second-generation theories which include the neo-Kaleckian model, the Super multiplier model, and the Steindl model. The impact of this relationship is assessed using a Vector Autoregressive (VAR) model, with a Toda-Yamamoto modification for some regressions. It is discovered that household debt has a positive short-term influence on economic growth, however, the influence is weak, and it decreases in the long run. Types of household debt such as credit card debt have shown to have a positive and strong influence on economic growth in South Africa from the short run to the long run, however, mortgage debt has shown weak positive influence on economic growth from the short run to the long run. The study found that the growth maximizing ratios for household debt to GDP ratio is 70 percent. The growth maximising credit card debt level is ZAR 72 403, in nominal terms and for mortgage debt is ZAR 5 980 000. The findings are expected to assist policymakers such as central banks and government authorities in formulating relevant policies to ensure economic sustainability through macro-prudential policy and strategies for household debt management.

Keywords: Household debt; mortgage debt; credit card debt; consumer debt; GDP; growth

JEL classification: D14, E21, E32, E44, E51, G01, G5,

CHAPTER 1: INTRODUCTION

1.0. Introduction

The rise in household debt has increased substantially over the last few decades. Concerns have been raised about the sustainability of household debt and how it influences the rate of economic growth. This chapter presents the overview of debates about household debt and growth. The research problem is outlined. The chapter includes the goals of the research and, finally, the organization of the thesis is also outlined.

1.1. Overview of debates about household debt and growth

Household borrowing has increased considerably in many countries over the past two decades, both in absolute and relative terms to household incomes. According to the IMF Global Financial Stability Report (IMF, 2017: 53), this has raised concerns about the sustainability of household debt as well as its effects on economic growth. The IMF (2017: 54) argues that household debt and access to credit can help boost demand and build personal wealth, but high indebtedness can also be a source of financial vulnerability and economic crisis. Debt allows households to purchase goods and services now and repay gradually through higher anticipated income. Long-term economic growth is facilitated by increased lending in the private sector. Nevertheless, when a nation experiences sudden, severe negative shocks, large household debt can lead to serious debt overhang issues. The IMF (2017: 54) states that high household debt may be a source of financial vulnerability and lead to prolonged recessions, as the global financial crisis has shown. The median household debt-to-GDP ratio among emerging market economies increased from 15 percent in 2008 to 21 percent in 2016, and among advanced economies, it increased from 52 percent to 63 percent over the same period. According to the Federal Reserve Economic Data (FRED) South Africa's household debt-to-GDP ratio increased from 39 percent in the first quarter of 2016 to 42 percent in the last quarter of 2021.

Pill and Pradhan (1997: 7) argue that household financial debt increased from the mid-1990s and accelerated in the first years of the new millennium due to consumerism, financial deregulation, and the liberalization of financial markets. Coletta (2019: 1185) states that after the financial crisis, the Great Recession resulted in the stabilization or the reduction of indebtedness in many countries. Nonetheless, in some financial systems, household debt continued to increase. Rena and Msoni (2014: 21) argue that there were negative effects of the

global economic crisis in South Africa. This was mostly caused by capital flight, declines in real foreign investment, and a decline in the demand and prices for export goods, particularly mineral exports. Kereeditse and Mpundu (2021: 115) explain that there was a 47 percent increase in private loans and advances to households from 2008 to 2015.

Theoretically, households borrow to fund their consumption as stated by the life-cycle theory of consumption. Jian Xiao and Yao (2014: 46) state that although the traditional lifecycle hypothesis (Modigliani and Brumberg, 1954; Modigliani, 1986) was developed to explain savings behaviour, it has been extended to show that households have a life cycle debt accumulation behaviour. Alter *et al*. (2018: 6) report that several studies have demonstrated the influence of demographics and the distribution of income and debt on growth. Younger people who expect their income to increase in the future would borrow more against it. Yilmazer and DeVaney (2005: 287) contend that if income rises during working life and falls during retirement, households will likely borrow when they are young, save during middle age, and spend less during retirement. Yilmazer and DeVaney (2005: 287) explain that over the course of a person's lifetime, consumers are likely to incur two major types of debt: mortgage debt, which is typically carried for a period of 20 to 30 years, and consumer debt, which is the amount owed on short- and intermediate-term loans. Consumer debt is further classified as installment loans.

According to Daud *et al*. (2021: 163), borrowing for non-financial asset investments and consumption smoothing may also be influenced by temporary income shocks. However, households can also take on debt to accumulate assets and to invest for the financial stability of their children. They further argue that by mobilizing capital as a source of economic growth, debt will assist households in mitigating shocks and increase consumption, aggregate demand, and economic growth. Consequently, this explains how debt and GDP growth are related. Daud *et al*. (2021: 161) further investigate whether a tipping point of debt exists by using the threshold method. It was shown that household debt has a negative effect on a nation's ability to thrive economically. There is no magic threshold of debt since the relationship between debt and growth is a monotonically non-increasing function. However, the IMF (2017: 63) notes that, at low levels of debt to GDP, the negative medium-term association between GDP growth and rising household debt is largely absent. The relationship between debt rises and future real GDP growth is favourable at extremely low levels of household debt to GDP, less than 10 percent it becomes negative when household debt surpasses 30 percent of GDP.

Alter *et a*l. (2018: 5) state that current research has focused on the debt-driven demand channel of credit supply shocks for the business cycle. Growth is under pressure to decline when credit supply tightens following a credit boom. In these models, as credit constraints are loosened, households borrow more money to finance their spending. However, when credit constraints eventually tighten, borrowers will have to deliver by cutting back on expenditure.

Mian *et al*. (2017) emphasize that when credit limits are loosened, households may rationally borrow more than the socially optimal level. This is known as the debt-driven "consumption" channel. They contend that the channel is distinctive and that it affects policies, especially macroprudential policies. The finance-led growth model, a more comprehensive framework, also explains this. According to Stockhammer (2011: 9), It contends that rising household debt, enabled by asset and real estate price bubbles and financial engineering, drives growth. The finance-led growth model (also known as debt-led growth) argues that the existence of a thriving financial sector has growth-enhancing effects on the economy.

Dumitrescu *et al.* (2022: 3) argue that the main causes of South Africa's high household debt include the high cost of repaying prior debt, the country's low savings rate, and a widespread lack of financial education. South Africa’s high household debt discourages people from launching small enterprises, which has a detrimental effect on the well-being and growth of the economy as a whole.

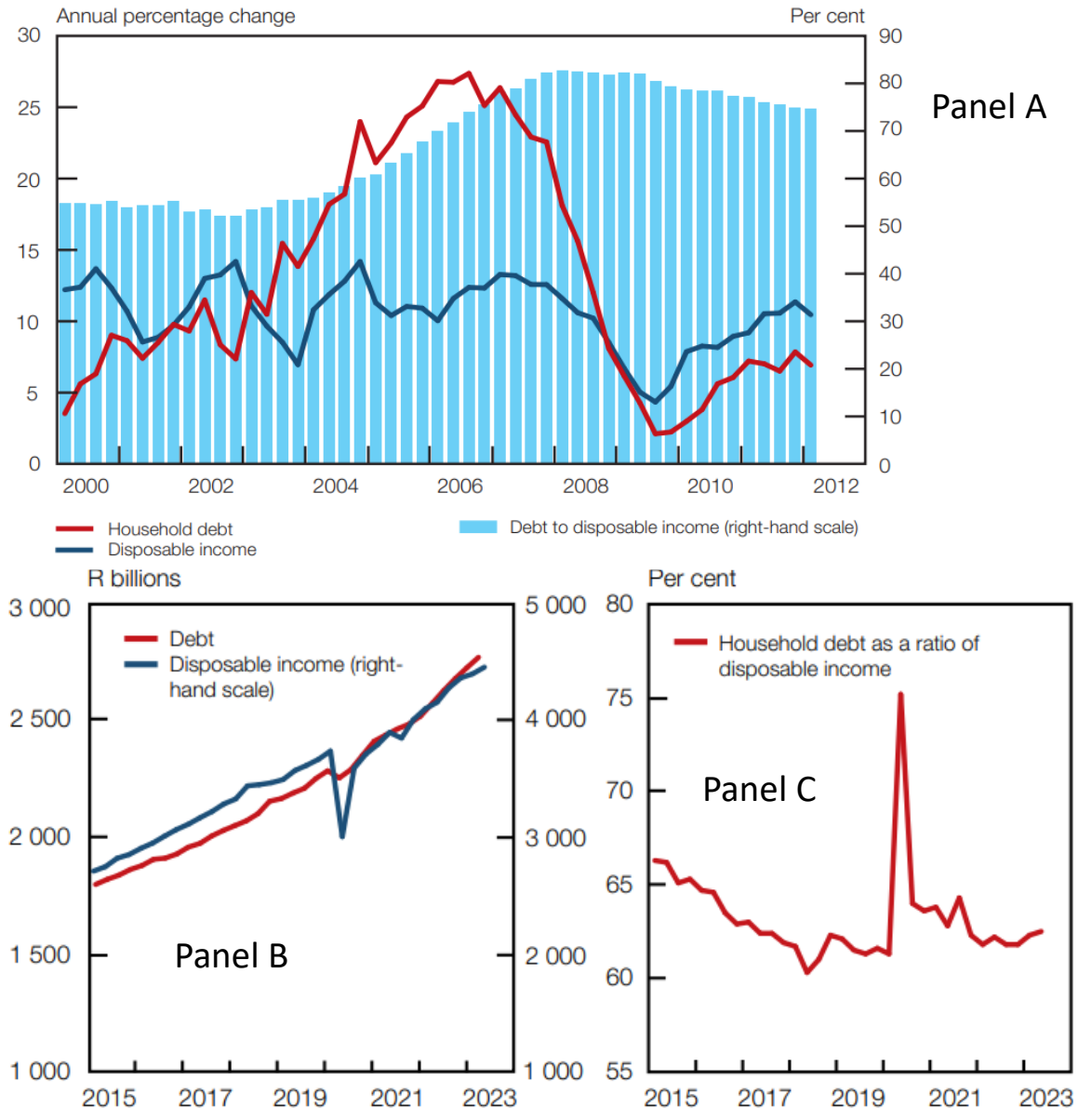

Figure 1.1: Panel A shows the ratio of debt to disposable income (SARB Annual Economic Report (SARB, 2012: 10)). Panel B and C show household debt and disposable income (Muneri and Kuhn (2023: 98))

Karambakuwa and Ncwadi (2021: 155) found that pandemics like HIV/AIDS and the most recent coronavirus pandemic, as well as natural calamities like droughts and floods, had made household debt in South Africa worse. They argue that having a lot of debt means paying high-interest rates and high principal repayments, which can make it harder for households to make ends meet. As a result, living standards decrease, which eventually lowers consumer spending and slows down economic growth. This is especially true considering that consumer expenditures account for more than 60 percent of South Africa's GDP. Karambakuwa and

Ncwadi (2021: 155) state that South Africa has an extremely high household debt to disposable income ratio, indicating excessive debt that lowers household welfare and eventually slows economic growth. In addition, Business Tech (2022) states that the need for credit and the ability to repay debt among South Africans have been significantly impacted by the country's slow economic growth, high unemployment rate, and increasing inflation. Missed credit repayments are linked to financial distress. Business Tech (2022) explains that prior to the worldwide COVID-19 pandemic, data from First National Bank (FNB) published in 2019 revealed that middle-class South Africans significantly relied on debt, with some spending as much as a quarter of their monthly salary on interest.

Lombardi *et al*. (2017: 6) state that household debt only has a short-term beneficial influence on growth and consumption, but it is likely to have a negative effect in the long run. Moreover, recessions are often longer and more profound when household debt levels are high; because of the high costs of debt, policies to prevent excessive debt build-up are advised (OECD 2012).

The consumption-to-GDP ratio rises, imports of consumption goods rise, and GDP grows during the household debt boom. However, Mian *et al*. (2017: 1755) claim that the increase is only temporary, and the GDP declines thereafter. Thus, an increase in the household debt to GDP ratio over three or four years in a particular nation indicates a downturn in economic growth. In addition, the IMF (2017: 53) claims that increases in private sector credit, including household debt, may raise the likelihood of a financial crisis and could lead to lower growth.

Prinsloo (2002: 73) established that in South Africa a clear inverse relationship between household saving and borrowing can be discerned from the beginning of the 1980s. Growth in household debt will thus result in a decrease in savings unless they are offset by as large or greater growth in household assets. Therefore, as the utilization of consumer credit increases, the saving of private households decreases over time. A rise in household net worth in relation to disposable income coincided with these trends.

Odhiambo (2006: 61) postulates that South Africa has experienced significant transformations since the financial liberalization began in the 1980s, including the emergence of several new lending opportunities for the financial industry. According to Prinsloo (2002: 74), these modifications allowed households to borrow more money relative to their income. This has led to a reduced rate of household savings and simultaneous high level of household debt and a rapid rise in credit outstanding. According to Moroke *et al*. (2014: 107), if households dissave,

they will be forced to go into debt to satisfy their consumption needs. Aron and Muellbauer (2000: 16) state that a direct, positive effect on the rise of household debt could result from the different facets of financial liberalization in South Africa, with, for example, more freely available credit card loans, lower housing downpayments as a fraction of house values, and housing equity loans more freely available to existing owners. The finance-led growth theory explains the relationship between debt and growth.

Cox and Jappelli (1993), found that the desire for debt rose until the head of a household was in their mid-thirties, at which point it began to fall. Younger individuals had the largest difference between their desired and actual debt, suggesting that they were most likely to be liquidity-constrained. Crook (2001: 83) discovered that there was a decrease in the demand for overall debt (which includes credit cards, mortgages, home equity loans, and instalment debt) among households led by people over 55.

Mian *et al*. (2017) examined 30 countries drawn from both advanced and emerging economies and discovered a country's household-to-GDP ratio will increase during a three- to four-year period then the economic growth will experience a decline. Daud *et al*. (2021) examined data from 24 countries from 2008 to 2016 and found that the impact of household debt on a country's economic growth is negative. Mutezo (2014) examined data from 1986-2013 and discovered that higher household debt levels lead to higher consumption spending, and therefore growth in South Africa. The issue comes up when the economy is going through a recession and households are finding it difficult to manage their high debt levels. Adewale (2014) estimates the impact of regulatory changes on South Africa's rate of consumption and ultimately its economic growth from 2007-2012 and established that there is a strong positive relationship between increasing credit consumption and economic growth in South Africa.

In conclusion, on average, rising household debt accelerates GDP in the short run but may give rise to macroeconomic and financial stability risks in the medium run. Real GDP initially reacts positively to increases in household debt, as do consumption, employment, and house prices. However, in the long term, the dynamic relationship between household debt and GDP turns negative.

1.2. Research problem

Although several studies have looked at household debt in South Africa, some focused-on determinants (Abd Samad *et al*., 2020), some on the effect of household debt on consumption (Mutezo, 2014), and a few on the effect of household debt on growth (Lombardi *et al*., 2017). Even those who looked at the effect of household debt on growth did not disaggregate the debt to explore whether different types of household debt have different effects on growth. Further, the studies did not determine the growth-maximizing ratios of different types of household debt to income. Therefore, the paper seeks to examine the effects of household debt on growth in South Africa with the research question "how do disaggregated components of household debt, specifically examining credit card debt and mortgage debt, impact economic growth in South Africa, and to what extent do these individual forms of household indebtedness contribute differently to key economic indicators and overall economic development in the country?" The thesis sets out to fill a research gap by using disaggregated data (which includes the 2007-2009 global financial recession and the COVID-19 pandemic) on households because the literature shows that credit card debt and mortgage debt have an impact on growth.

1.3. Goals of the research

The overall goal is to determine the effect of aggregate household debt on economic growth in South Africa, more specifically: to determine the effect of specific household debt types on economic growth in South Africa and estimate growth-maximizing thresholds of specific household debt types.

1.4. Organisation of the thesis

After this introductory chapter, is chapter 2 which is the literature review, it incorporates the theoretical review and the empirical review. The 3rd chapter reviews trends of household debt variables in South Africa while chapter 4 presents the methodology chapter outlining the model applied as well as defining variables. Chapter 5 presents the results and discussion and lastly, chapter 6 presents policy implications and major conclusions.

CHAPTER 2: LITERATURE REVIEW

2.0. Introduction

The total amount of money owed to financial institutions by all adults in a household, including consumer debt and mortgage loans, is known as household debt. Dikko and Madi (2015: 2) state that it is a debt or liability brought on by purchasing anything on credit against future income. Abd Samad *et al.* (2020: 2) explain that household debt can also be defined as an obligation or liability to pay interest or principal resulting from borrowing. Secured debt and unsecured debt are the two main types of household debt. Secured debt is a debt procured by an underlying asset, such as a mortgage. Abd Samad *et al.* (2020: 2) state that mortgage debt is collateralized by real estate, such as homes or buildings. Unsecured debt, however, eliminates the restriction that a creditor has a claim to the assets of a failing borrower. They further claim that loans for motor vehicles, personal loans, and credit cards are some of the debtor's assets that are exempt from the claim. Over time, household borrowing has risen substantially across several nations. Concerns have been raised about the sustainability of household debt and how it would influence the rate of economic growth.

This chapter presents the theoretical and empirical literature review on the effect of household debt on growth. The theories used in this chapter are first-generation theories which include the absolute income hypothesis, the life cycle hypothesis, and the permanent income hypothesis, and the second-generation theories which include the neo-Kaleckian model, the Super multiplier model, and the Steindl model. Household debt on growth and financial liberalization in South Africa will also be addressed in this chapter.

2.1. Theoretical review

2.1.1. First generation theories

a. The absolute income hypothesis

Research on the aggregate consumption function began with Keynes's Absolute Income Hypothesis (AIH) in the General Theory. Since then, consumption has been the subject of countless theoretical and empirical studies. According to Arioğlu and Koray (2011: 299), consumer expenditure accounts for 50–70 percent of consumption in the majority of global economies. It follows that some of the most extensively researched subjects in macroeconomics

have been consumer expenditure and the consumption function. The fundamental theories of consumption are the absolute income hypothesis by Keynes (1936), the permanent income hypothesis by Friedman (1957), and the life cycle hypothesis by Modigliani (1954).

Keynes (1936) states that a consumer's consumption tends to expand along with income, but not by the same amount. He proposed that income is the only factor influencing consumption in his research on the link between income and consumption. Based on the Keynesian consumption function, the AIH, aggregate consumption is a stable, but not necessarily linear, function of disposable income,

$$C_t = \alpha + \beta Y_t \qquad (1)$$

where C_t and Y_t denote the (real values of) total personal consumption expenditure and total disposable income, respectively at time t. β, the marginal propensity to consume (MPC) is constant and positive but less than unity, so that higher income leads to higher consumption. The autonomous component of consumption, α, which has to be financed by borrowing or earlier savings, is assumed to be small but positive.

Arioğlu and Koray (2011: 299) explain that the AIH has these important features: firstly, the consumption expenditure increases or decreases with an increase or decrease in income but non-proportionally. This non-proportional consumption function implies that in the short run average propensity to consume (APC) is greater than the MPC, where APC = $\frac{C}{Y}$ and MPC = $\frac{\Delta C}{\Delta Y}$. This is because in the short run autonomous consumption does not change with income but over the long period horizon, as wealth and income increase, consumption also rises. They explain that the marginal propensity to consume out of the long run income is closer to the average propensity to consume. Secondly, as income rises, the proportion of it consumed falls: $\frac{\partial APC}{\partial Y} < 0$, so the income elasticity of consumption defined as $\frac{MPC}{APC}$ would be less than unity. Thirdly, the consumption function is stable both in the short run and long run.

Based on these specifications, in line with Keynesian theory, when contemplating the way a consumer determines their consumption level, it entails factoring in their disposable income, thereby encompassing their net income. Thus, the AIH states that real income (or real disposable income) determines real consumption. In this case, it was expected that the autonomous consumption would be positive and that the MPC would be constant and close to

1. Individuals use credit cards, mortgages, auto loans, cash advantages, or borrowing against their future income to cover their present expenses. Pedrosa *et al*. (2023: 34) explain that higher household autonomous consumption raises both household debt (through new loans needed to finance it) and aggregate income. Increases in autonomous expenditure relative to earnings can also contribute to low levels of savings in the economy.

b. The life cycle hypothesis

The maximization of utility from future consumption theory was formalized by Modigliani and Brumberg (1954). They made the assumption that the primary reason for saving is to build up funds for future expenses and to sustain consistent consumption in retirement. Franco Modigliani, Richard Brumberg, and Albert Ando developed a theory of spending in the early 1950s. It was predicated on the notion that individuals make wise decisions about their spending at every stage of life, constrained only by the resources at their disposal. Working individuals may save for retirement and, more generally, adjust their spending habits to suit their requirements at different ages, regardless of their income at each age, by building up and running down assets.

The life cycle model places a strong emphasis on the necessity of saving while working to finance retirement. The term "consumption smoothing" describes how individuals attempt to maximize their lifelong quality of living by making sure that their spending and savings are appropriately balanced over their various life stages. According to Lang'at (2018: 5), in order to enjoy a greater quality of living, some households may decide to borrow and overspend while putting off savings. This increase in debt causes business investment to become profitable, which in turn spurs economic growth during the consumption smoothing phase. Household debt occurs mostly due to consumption smoothing. Lang'at (2018: 5) explains that households must reorganize their income flows throughout their whole lives to smooth consumption in order to achieve maximum utility. This helps agents to smooth their consumption when there is an unsteady and irregular income flow.

Deaton (2005: 1) explains that young individuals save money, so they have money to spend when they are older and are unable or do not want to work. According to the life-cycle narrative, the nation's wealth is distributed as follows: the very young have less money, middle-aged persons have more, and peak wealth is attained right before retirement. Retirees sell off their possessions as they approach old age to fund their retirement and cover housing, entertainment,

and food expenses. The young, who are still in the accumulation phase of the cycle, take up the assets that the elderly discard. Deaton (2005) further explains that there will be net positive savings as a result of population expansion since there are more young people than old and more individuals saving than spending. This means that the overall amount of money that the elderly save will be less than the total amount that the young save. Similar to that, the surplus savings of the middle-aged people absorb the debt of the young, resulting in net positive savings. Economic growth, like population expansion, produces positive savings, the stronger the growth, the higher the saving rate. If earnings are increasing, young people will be saving more than the elderly are dissaving. In actuality, the rate of increase of total income is what matters for saving, regardless of population growth or per capita income growth.

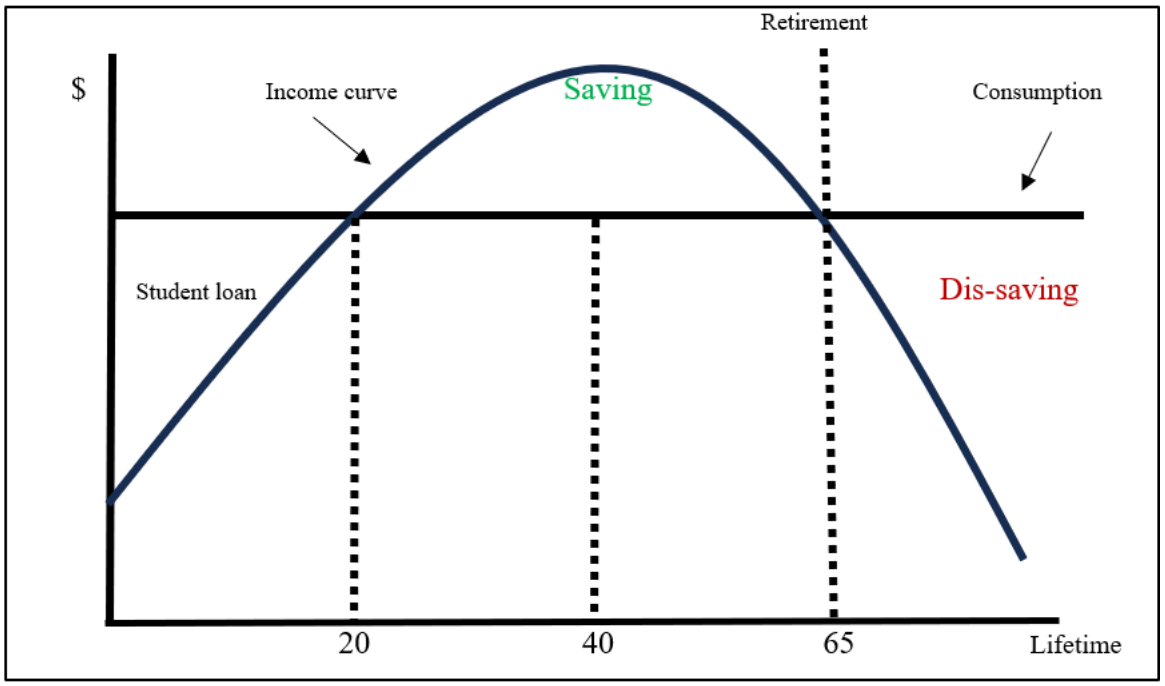

Figure 2.1: Life cycle hypothesis graph

Figure 2.1 illustrates how people save between the ages of 20 and 65. As a student, it is rational to borrow to fund education. After that, you start investing for your retirement and pay off your student loans during your working years. You can sustain comparable income levels after retirement due to the savings made throughout working years. It implies that income will rise while a person is working and subsequently decline after they retire.

An important assumption of this model is that the period of retirement is fixed: the allocation of lifetime consumption between working and retirement years can be altered by changes in

wealth, wage rates, or other variables, but the allocation of the years between work and retirement remains unchanged. Feldstein (1976: 77) argued that the assumption of a fixed retirement period conflicts with observed behavior and has unintentionally caused some important evidence to be incorrectly interpreted as conflicting with the basic notion of rational life cycle saving. In 1900, only 37 percent of men over age 65 were retired; by 1971, this had doubled to 74 percent in America. It is appropriate therefore to extend the life cycle model to make the period of retirement endogenous.

Although the traditional lifecycle hypothesis (Modigliani and Brumberg, 1954; Modigliani, 1986) was developed to explain savings behavior, the theory has been extended to show that households have a life cycle debt accumulation behavior. Yilmazer and DeVaney (2005: 287) explain the life cycle hypothesis of savings and proposes that a household's consumption and savings correspond to its stage in life, with consumption being a linear function of existing cash and the discounted worth of future income. Households often borrow when they are young, save throughout middle age, and spend less during retirement because they assume that income will rise during working years and decrease during retirement.

The age of the head of the household is anticipated to have a significant influence on the total amount of debt that households keep, even though other factors are likely to influence consumption and saving. Yilmazer and DeVaney (2005: 287) further explain that there is a likelihood that the age of the head of the household will also have a significant influence on the number of various debt types. Consumer debt, which is the amount owed on short- and medium-term loans, and mortgage debt, which is typically held for a period of 20 to 30 years, are the two main forms of debt that consumers are expected to accrue over their lifetime. Credit card debt and installment loans are two more types of consumer debt. As a result, the many forms of debt that households have are linked to how their needs change throughout a lifetime. For instance, most households take on installment debt for the purchase of a car before they purchase a house or borrow money for their children's college education. Hence, households tend to accumulate more debt while they are young leading to an increase in economic growth through productivity of goods and services to meet the needs of the young people.

Furthermore, households might not be able to borrow as much as they would want when they are first starting in the workforce and have a low income. This is especially true for the choice to buy a home, which is the biggest expense a household makes. Debelle (2004: 51) maintains that financial institutions often do not lend the full value of the home being acquired, meaning

that the household must make a down payment. Younger households must therefore rent while setting money down for a down payment. Liquidity restrictions loosen when people's salaries and savings increase, enabling them to borrow the substantial amount needed to buy a home. This adds to the hump-shaped trend that many nations observe in household debt and property ownership over time.

The life-cycle income hypothesis has served as an important theoretical framework to study household saving/dissaving behavior. According to Baek and Hong (2004: 361), debt is dissaving. Dissaving and saving indicate a consumer's preference for current consumption over future consumption, for which the marginal substitution rate is mostly influenced by the consumer's desire to balance out fluctuations in their income to align with their preferred time path of consumption. In contrast to older people nearing retirement age, who start to spend from their savings, younger people are often anticipated to have more debt in relation to their income level and to progressively accumulate positive net worth in the Middle Ages. According to Deaton (2005: 1), economic expansion leads to positive savings because younger people save more than older people do while incomes are rising. The faster the growth, the greater the saving rate.

c. The permanent income hypothesis

The permanent income hypothesis (PIH) was developed by Friedman (1957) to explain how and why consumption is affected by expectations for the future. The model is based on Irving Fisher's hypothesis, which states households borrow because they have insufficient earnings to finance their consumption. Friedman explains that households spend money at a level consistent with their expected long-term average income. According to Gerlach-Kristen (2014: 511) and Lang'at (2018: 5) households will only save if their current income exceeds the expected level of permanent income, and they will borrow if their income falls short of the anticipated level of consumption.

Friedman (1957) divided the current measured earnings or the actual income into two categories - transitory income (y_t) and permanent income (y_p). Hence, $y = y_p + y_t$. The transitory component has an expected value of 0, reflecting the assumption that future transitory losses offset the transitory gains over time. As a result, observed income levels (y) are equal to y_p. Finally, according to PIH, consumption expenditure is proportional to y_p, i.e., $C = ky_p$, where 'k' is a constant representing the average propensity to consume or APC and marginal

propensity to consume or MPC. This implies that changes in consumer behaviour are not predictable and depend on individual expectations.

The implications on economic policy are that, unless workers modify their expectations about their future incomes, even a rise in income in the economy influenced by economic policies may not translate into higher consumer spending. The main insight of the model is that households' smooth consumption levels during their lifespan. On the other hand, this model considers the supply of money to be fully elastic and concentrates on the demand-side factors that influence household borrowing. Households have limited resources, and how much they borrow depends largely on how the lending market is structured.

The PIH states that a household's consumption should be determined by its permanent income, or what it anticipates earning in a steady state, and should not respond to temporary income fluctuations. Households may, however, occasionally have lower consumption than their fixed income. The first of these is credit constraints. If a household sees a decline in income and is unable to obtain a loan from a bank (either because the bank believes the borrower is not a good risk or because the bank is having difficulties with attempting to reduce its loan book) consumption drops with actual income.

The PIH states that households who experience a temporary decrease in income will take out loans to cover their present expenses, with the intention of repaying the debt when income levels rise. According to Chotewattanakul *et al*. (2019: 2) this kind of consumption smoothing stabilizes demand and, consequently, the economy as a whole. Barba and Pivetti (2009: 119) claim that households will often take out loans to cover current expenses at times when their income is lower than average for their lifetime. The goal is to pay back the loans when income rises above normal for their lifetime. Borrowing for non-financial asset investments and consumption smoothing may also be impacted by temporary income shocks. On the other hand, according to Daud *et al*. (2021: 163), households also take on debt to accumulate assets, and debt-taking is also prompted by a household's desire to make investments for the benefit of their children's financial stability. They further established that using debt to smooth consumption leads to an increase in aggregate demand and hence growth. Thus, describing the link between debt and GDP growth may be relevant. IMF (2017: 63) notes that at low levels of debt to GDP, the negative medium-term connection between GDP growth and rising household debt is absent. The relationship between increases in debt and future real GDP growth is

493 favourable while household indebtedness is below 10 percent of GDP; it becomes negative
494 when household indebtedness surpasses 30 percent of GDP.

495 The Permanent Income Hypothesis by Friedman (1957), and the Life-Cycle Hypothesis by
496 Modigliani (1954), explain household indebtedness and assert that people may accumulate
497 wealth by saving money, investing it for long-term growth, and spending less than they earn.
498 Japelli (2005: 173) claims that the difference between LCH and Friedman's PIH concerns the
499 length of the planning period. For Friedman, this period is endless, therefore individuals save
500 money for both themselves and their future generations. In the Modigliani-Brumberg version
501 of the LCH, the planning period is finite. In some cases, PIH and LCH share similar predictions
502 about individual behavior; for instance, according to both theories transitory income shocks
503 (transitory taxes and rebates) and capital gains or losses can be expected to have small effects
504 on consumption. However, the LCH has some unique implications concerning both individual
505 and aggregate saving rates that diverge significantly from the infinite horizon version of the
506 model. Abd Samad *et al*. (2020: 975) postulate that LCH and PIH emphasize that households
507 take out loans when earnings are lower than expected and view debt as a tool for a person's
508 stable life cycle consumption. Here, income and consumption may be used to explain
509 household debt.

510 In summary, the theories offer various viewpoints on how debt may impact consumption, which
511 in turn impacts economic growth. The Absolute Income Hypothesis places a strong emphasis
512 on how debt affects current consumption and aggregate demand. The Permanent Income
513 Hypothesis focuses on individuals' expectations and their willingness to smooth consumption
514 in the face of debt. The Life Cycle Hypothesis highlights the interplay between debt,
515 investments, and consumption patterns over an individual's life span. The extent to which debt
516 affects economic growth depends on factors such as the level of debt, the stability of income,
517 and individual perceptions of future income and financial stability.

518 ### 2.1.2. Second generation theories

519 #### *a. Neo-Kaleckian model*

520 The post-Keynesian growth school is adhered to by neo-Kaleckian growth economists. Joan
521 Robinson's contributions to the area serve as the foundation for the field. Robinson argues that,

in the typical Keynesian way, demand drives growth. Using a neo-Kaleckian growth model, Rees (2014: 40) discovered that debt servicing is detrimental to growth in an economy.

Avritzer (2020: 68) derives the neo-Kaleckian growth model and turned to its long-run equilibrium properties, emphasizing on the model's financial sustainability implications from the standpoint of working households. Avritzer (2020: 68) finds that the model necessitates the worker household to accrue debt over time rather than wealth to achieve positive rates of economic growth. Second, the dynamics of the model cause households to accumulate debt levels that are unsustainable for them financially when positive but moderate rates of economic growth occur since the cost of debt servicing surpasses incomes. Therefore, the consumption pattern of economic growth that is fuelled by household debt creates an internal dynamic that ultimately results in financial instability.

A traditional neo-Kaleckian model of growth and distribution is supplemented by Setterfield and Kim (2016: 31) with a model of the household sector in which working households borrow to finance a portion of their total consumption expenditures because they aspire to match the consumption standards of rentier households. According to Setterfield and Kim (2016: 32), the model illustrates the significant impact that working households' debt servicing practices have on the features of a growth regime. Secondly, it shows how important it may be to redistribute income away from working households to make an otherwise steady (and seemingly well-performing) growth regime unsustainable financially. Lastly, it shows that a growth regime's financial sustainability is dependent precisely on whom working households aspire to be like when formulating their consumption goals.

In a neo-Kaleckian model developed by Serra (2023: 175), households can borrow to consume or invest in human capital. According to this approach, debt service payments are sustainable if they don't interfere with the increase in household income. Serra (2023: 175) adjusts the model and examines the short and long-term economic impacts of various measures, including interest rate decrease and the cancellation of student loans. This is the first research to examine household borrowing from a demand-led macro-modeling viewpoint for two distinct purposes: consumption and the accumulation of human capital. Serra (2023: 175) discovers that: (i) household debt is sustainable over the long term, and debt servicing is compatible with consumption levels above 90 percent of household income; (ii) new borrowing stimulates economic activity in the short term, while debt servicing reduces aggregate demand by shifting income to a class with a lower marginal propensity to consume; and (iii) while initiatives like

554 decreasing interest rates on household borrowing and changing the eligibility requirements for
555 student loan forgiveness have long-term effects, student loan cancellation has short-term
556 economic benefits.

557 Hein (2012: 14) argues that The Kaleckian distribution and growth model, which allows debt-
558 financed consumption by workers' households, is the result of finance-dominated capitalism
559 and neo-liberalism, which led to redistribution at the expense of labor income and weakened
560 animal spirits of the firm sector with regard to real investment. When discussing the impacts
561 of finance-dominated capitalism, most models in the Kaleckian and Mynskian traditions have
562 concentrated on the significance of corporate debt for the business cycle and long-term growth,
563 or the role of outside finance, including stock owned by rentiers. On the other hand, modeling
564 strategies centered on household debt have also been suggested. According to Hein (2012: 14),
565 a multiplier-accelerator business cycle model incorporates the contradictory macroeconomic
566 effects of household debt for consumption. Specifically, debt from households' transfers
567 purchasing power from high-income households with a low marginal propensity to consume
568 to low-income households with a high propensity to consume, boosting aggregate demand.
569 However, if purchasing power is redistributed in the other way, then debt interest payments
570 become a burden on both aggregate demand and growth.

571 In addition to worker households' debt dynamics, Parui (2023: 446) integrates distributional
572 dynamics into a stock-flow consistent neo-Kaleckian macro-model to investigate the long-term
573 dynamic stability of the economy. In the medium and long term, debt-ridden demand and
574 growth regimes are feasible, but so are wage-led and profit-led regimes. Parui (2023: 446) finds
575 that the relationship between distributional dynamics and debt might cause economic
576 instability.

577 ***b. Super multiplier model***

578 Pedrosa *et al*. (2023: 1) state that autonomous demand drives growth in Super multiplier
579 models, and revenue stimulates firm investment, which ultimately satisfies the capital stock
580 adjustment principle. According to Brochier and Freitas (2019: 2), autonomous expenditures
581 are those expenditures that are not directly connected to the circular flow of income in the
582 Super multiplier literature. A stock-flow consistent (SFC) Super multiplier model with two
583 sources of debt-financed autonomous demand (government and household consumption) is
584 developed because the financial aspect of these models needs further development. This model

emphasizes the interaction between households, firms, and government indebtedness and growth. Pedrosa *et al*. (2023: 1) investigate, primarily over the long term, (a) autonomous demand growth and composition impacts over debt-to-output ratios and (b) the model's stability criteria and their relationship to real and financial variables. They find that: (i) the model generates scenarios of financial instability, and (ii) government spending might stabilize household debt. Policymakers should reconsider the role of fiscal policy and concentrate on its ability to stabilize household debt.

Super multiplier growth models often illustrate the exogenously determined autonomous component of demand that propels growth. In their Super Multiplier Growth Model, Avritzer and Brochier (2022: 29) postulated that household credit-financed consumption is the independent driver of growth, given that it is partly dictated by the potential financial burden that loans may place on household consumption. The findings indicate that growth is positively impacted by the distribution of income, but financial factors, including interest rates and household sensitivity to debt, have a negative effect. This was made feasible by merging a demand-led growth model, in which autonomous spending driven by growth is financed by household credit; however, this credit-financed consumption is not exogenous, since it is partially explained by households' responses to their debt burden.

The two most dominant demand-led growth models in heterodox literature at the moment are the Supermultiplier model and the neo-Kaleckian model. Brochier and Freitas (2023: 1) compare stock-flow consistent (SFC) versions of extended classical neo-Kaleckian and Supermultiplier models that address the debt buildup of households and/or enterprises. The comparison has two objectives: (i) to assess the variations in the debt accumulation process across these models as a result of their unique closures; (ii) to offer an instructional resource for comprehending the fundamental characteristics of every model when addressing comparable problems. For both models, the relationship between debt ratios, demand, and growth is comparable in the short run. The Minskyan debt regime is the only regime that is economically feasible for the firms' sector over the long term in the Super multiplier model. As for the household sector, while growing debt-to-income ratios may occur sometimes, the paradox of debt is a characteristic of the standard Super multiplier model. According to the neo-Kaleckian model, a company's leverage ratio might be pro- or anti-cyclical; in the case of households, the lack of the debt dilemma appears to be the most likely outcome.

c. Steindl model

To analyze the effects of monopolistic power emerging in capitalist economies, Steindl (1952) developed a model of maturity and stagnation. This model demonstrated how the expansion of large enterprises may lower aggregate demand, lower capacity utilization, and ultimately slow down the rate of growth. In order to account for consumer borrowing, Dutt (2006: 339) employs a Steindlian model of growth and income distribution. It demonstrates how consumer borrowing may raise demand and, in the short term, enhance growth prospects. Longer-term impacts of rising consumer borrowing are ambiguous, because, by increasing consumer debt, it redistributes income towards the rich who have a lower propensity to consume out of financial income thereby, possibly dampening growth and aggregate demand despite the increase brought on by borrowing. According to Dutt (2006: 339), while financial factors such as rising interest rates as a result of increased borrowing may contribute to the problem, they are not necessary. The issue is more likely to arise when there is weak demand for autonomous investment, or when borrowing-induced increases in consumption are most required to counter tendencies towards stagnation.

2.2. Empirical literature review

2.2.1. Household debt and economic growth

Household borrowing has increased significantly in several countries during the past 20 years, both in absolute terms and relative to household earnings. Concerns have been expressed regarding the sustainability of household debt as well as how it may affect economic expansion. According to the IMF (2017: 54), household debt and credit availability can drive demand and increase personal wealth, but high levels of debt can also be a cause of financial vulnerability and economic crises. Debt enables people to buy goods and services now and pay them off over time with increased (expected) income. Increased private-sector credit promotes economic growth over the long run. However, over time, high household debt can result in substantial debt overhang problems when a nation experiences strong negative shocks suddenly. The IMF (2017: 54) states that the experience of the global financial crisis and the COVID-19 pandemic resulted in highly indebted households defaulting on debt and many loans turning into bad debt and non-performing loans, resulting in systemic financial instability. In advanced nations, the median household debt-to-GDP ratio climbed from 52 to 63 percent during the same period, whereas it increased from 15 to 21 percent in emerging market economies between 2008 and

2016. According to FRED data, the household debt-to-GDP ratio in South Africa climbed from 39 percent in the first quarter of 2016 to 42 percent in the final quarter of 2021.

Financial deregulation and the liberalization of financial markets all contributed to a surge in household debt that started in the mid-1990s and intensified in the early years of the new millennium. Coletta (2019: 1185) states that the Great Recession that followed the financial crisis led to the stabilization or decrease of debt in several nations. Nonetheless, several financial systems saw a rise in household debt. Kereeditse and Mpundu (2021: 115) explain that there was a 47 percent increase in private loans and advances to households from 2008 to 2015 in South Africa.

Households have been able to borrow more money as their wealth has increased. Orhangazi and Ozgur (2015: 3) state that the banking sector's credit-to-deposit ratios rose, and household debt ratios quickly increased, leading to a buildup of many financial fragilities in the economy. Oren and Blyth (2019: 611) claim that credit cards, bank loans, and overdrafts led to a significant expansion of household debt. South Africa's high household debt discourages people from launching small enterprises, which has a detrimental effect on the well-being and growth of the economy.

South African households face higher levels of debt to sustain consumption and living necessities. Karambakuwa and Ncwadi (2021: 155) assessed the determinants of household debt in South Africa and found that in South Africa based on the PIH, the ratio of household debt to disposable income is quite high averaging 52.62 percent from 1969 until 2022, indicating over-indebtedness that lowers household welfare and eventually lowers economic growth. In addition, Mian *et al*. (2017: 1755) tested the relationship between household debt and growth in business cycles in a panel of 30 countries from 1960 to 2012 and found that an increase in a country's household debt to GDP ratio during a three- to four-year period forecasts a drop in that nation's future economic growth. They explained this relationship by using the PIH theory stating that a reason for household debt to expand today is anticipation of higher income tomorrow.

Some scholars argue on the short-term and long-term impact of household debt on growth, for example, Lombardi *et al*. (2017: 6) state that due to the high costs of debt, efforts to avoid excessive debt build-up are advocated since recessions are frequently longer and more severe when household debt levels are high. They investigated the impact of household debt levels on

678 growth using data on 54 economies from 1990-2015 and found that an increase in the
679 household debt-to-GDP ratio boosts consumption and GDP growth in the short run but tends
680 to lower GDP growth in the long run. The consumption-to-GDP ratio rises, consumer goods
681 imports increase, and GDP enjoys a boost during the boom in household debt. However, the
682 increase is temporary, and GDP thereafter declines. The basic hypothesis is that if the
683 permanent income hypothesis is correct, the correlation between past increases in debt and
684 consumption growth should be positive because additional borrowing is motivated by higher
685 expected permanent income.

686 High levels of debt lead to high interest rates and principal repayments, which may make it
687 harder for households to meet their living expenses. As a result, the standard of life declines,
688 which in turn lowers consumer spending and eventually slows economic growth. This is
689 especially true given that consumption expenditure accounts for more than 60 percent of South
690 Africa's GDP. The IMF (2017: 53) claims that increases in private sector credit, including
691 household debt, may raise the likelihood of a financial crisis and could lead to lower growth.
692 In addition, Business Tech (2022) states that the need for credit and the ability to repay debt
693 among South Africans have been significantly impacted by the country's slow economic
694 growth, high unemployment rate, and increasing inflation. Missed credit repayments are linked
695 to financial distress and increase the vulnerability of households to economic shocks. Business
696 Tech (2022) explains that prior to the worldwide COVID-19 pandemic, data from First National
697 Bank (FNB) published in 2019 revealed that middle-class South Africans significantly relied
698 on debt, with some spending as much as a quarter of their monthly salary on interest.

699 Household debt could be seen as a source of growth. According to Cynamon and Fazzari (2013)
700 rising household debt levels contributed to and supported economic growth in a manner
701 comparable to that which business debt had previously only done. A successful market for
702 mortgage-backed securities, stable employment income, a legal environment allowing
703 mortgage interest to be tax deductible, a stable low-interest rate environment, and social norms
704 that view debt as a typical financing method for consumption are all requirements for stable
705 levels of household debt. Leclaire (2021: 9) states that the stability of household debt as a
706 stabilizing economic and financial component is not assured because many of the latter are
707 easily disreputable.

708 Household debt in South Africa has led to effects on household consumption, household
709 investment, and income. Daud *et al.* (2021: 161) use the threshold approach to further

investigate if there is a debt tipping point. There was no magic threshold of debt discovered since the link between debt and growth is a monotonically non-increasing function. They use the PIH and LCH to explain these relationships which postulate that that households smooth their consumption by borrowing. Daud *et al*. (2021) examined data from 24 countries from 2008 to 2016 and found that the impact of household debt on a country's economic growth is negative.

Authors such as Kereeditse and Mpundu (2021: 115) suggest that several macroeconomic factors, including the low-interest rate environment, rise in unsecured lending and associated increases in household debt, excessive state expenditure, and a significant current account deficit, may lead South Africa into a debt crisis if they are not properly controlled. Kereeditse and Mpundu (2021: 115) claim that depending on significant variables including the extent of creditors' legal protection, the effect of household debt on growth differs among nations. Kereeditse and Mpundu (2021) analyzed household indebtedness in South Africa from 2005Q1 to 2019Q4. From the findings, it was concluded that there was a positive insignificant relationship between household debt and consumption. The LCH was used to explain this relationship by stating that households apply to credit markets because they want to have steady living conditions over the years.

Excessive interest rates and principal repayments caused by excessive debt load may make it harder for households to afford living expenditures. As a result, the standard of living declines, which in turn lowers consumer spending and eventually slows economic growth. This is especially true given that consumer expenditures account for more than 60 percent of South Africa's GDP. The levels of household indebtedness as compared to the income levels are high. Karambakuwa and Ncwadi (2021: 155) claim that in South Africa, the ratio of household debt to disposable income, which indicates over-indebtedness and lowers household welfare and, eventually, economic growth, is quite high. The high levels of household debt may also be a factor in the wealth gap, given that those who have more debt may find it more difficult to accumulate assets and wealth than those who have less debt or none. This might increase South Africa's already-existing income and wealth inequality, which could have long-term effects on the country's economic growth and social cohesion.

Household debt has created long-term implications for South Africa. Barba and Pivetti (2008: 114) maintain that the real challenge is whether it is possible to manage the long-term

shortcomings of a growing household debt stock, which can significantly negatively influence the overall savings rate while stimulating demand and activity.

Continuously monitoring the trends of household debt in South Africa is a step in the right direction for governments. Moroke (2014: 749) explains that forecasting household debt for South Africa is of importance to policymakers. It becomes challenging for policymakers to develop feasible policies without appropriate and reliable forecasts. With accurate projections generated, it may be simple for the relevant authorities to design and devise effective plans to address household debt in the country, and with the use of an appropriate modeling approach, forecasting accuracy of household debt in the country may be enhanced.

Macroeconomic policies are an essential element in preventing disproportionate economic activity reductions during episodes of household deleveraging. For instance, monetary easing may significantly lower mortgage payments and stop household defaults in nations where mortgage interest rates are frequently variable. The same is true for fiscal transfers to households made through social safety nets, which can boost household income and improve their ability to pay off debt. Leigh *et al*. (2012: 91) argue that self-reinforcing cycles of growing defaults, falling house prices, and lower aggregate demand can be prevented with the use of such automatic transfers. However, macroeconomic stimulation has its limitations. High levels of public debt may limit the potential for deficit-financed transfers, and the zero lower bound on nominal interest rates could prevent sufficient rate cuts.

There are two more approaches to addressing the issue of household debt: tighter macroprudential measures or tighter mortgage interest deduction. Over time, macroprudential policies reduce the amount of debt in the economy, which lowers both borrowers' interest costs and lenders' interest revenue. According to Finocchiaro *et al*. (2016: 57), these policies lead to a transfer of wealth from debt-free to indebted households, or from lenders to borrowers. Since their interest income would be smaller, lenders will cut back on their consumption of products, housing services, and leisure activities. Borrowers, on the other hand, can boost their consumption of products and leisure time.

Government intervention is necessary when the levels of household debt are too high. According to Leigh *et al*. (2012: 91), at a relatively low fiscal cost, government interventions aimed at lowering household debt levels relative to assets and debt service levels relative to repayment capacity can significantly offset the detrimental impacts of household deleveraging

on economic activity. Eggertsson and Krugman (2012: 1505) claim that deleveraging is the sudden downward revision of views about the maximum amount of debt that a household should have. This revision pushes highly indebted households to drastically cut back on their expenditure, which can lead to major problems with macroeconomic management. The number of household defaults and foreclosures can be greatly reduced by bold and well-designed household debt restructuring initiatives. These initiatives assist in preventing self-reinforcing cycles of declining housing prices and decreased aggregate demand.

The Keynesian era saw a large rise in household debt. Sparkes and Wood (2021: 611) argue household debt has played a significant role in the political economy of Britain. From the 1950s to the 1960s, rising household debt and homeownership demand helped the Conservatives win electoral support at the expense of traditional "Old Labour" values. Sparkes and Wood (2021: 611) explain that Wilson's Labor Party aimed to oppose by accepting Keynesian principles and emphasizing programs that increased access to mortgage loans and homeownership. According to Sparkes and Wood (2021: 598), Britain is a prime example of a financialized economy that, starting in the 1980s, built systems of household debt to fuel economic expansion. The Keynesian era managed debt carefully hence debt led to economic growth. Similar trends are seen in the U.S. economy between the 1980s and 2007, home equity borrowing is responsible for roughly half of the rise in U.S. housing debt. Bartscher *et al*. (2020: 1) state that American household debt has doubled in relation to income since 1950 and has increased fourfold since the financial crisis of 2008. The household debt-to-income ratio increased from 30 percent at the end of World War II to a peak of close to 120 percent in 2010.

In the US, relatively costly borrowing methods like credit card debt are widely used. According to Zabai (2017: 16), despite the sharp increase in credit card use and debt, in 1998 credit card debt made up just 3.8 percent of all household debt. Throughout the 1990s, a larger spectrum of social groups began to utilize credit cards. Lacoviello (2008: 933) states that gross household debt increased from 66 percent to 113 percent of disposable personal income between 1981 and 2003, outpacing actual economic growth throughout the 1980s after remaining relatively steady during the 1960s and 1970s. The progressive growth over time of frequently used metrics of financial sector imbalances has coincided with the increase in debt. For instance, the household debt service ratio increased from 0.106 in 1983 to 0.132 in 2003 (an estimate of the ratio of debt payments to disposable personal income). Lacoviello (2008: 933) postulates that although consumer debt has increased more than home mortgage debt, both have contributed

to the rise in family debt. In the early period, consumer debt averaged around 20 percent of available personal income, and it increased to roughly 25 percent in the latter period. The ratio of mortgage debt to disposable income increased to nearly 75 percent in the late 1990s from 40 percent from 1960 to 1980.

In developing countries, particularly in Southeast Asia, regulators have made an effort to manage excessive household debt. Nonetheless, it has been shown that the greatest household debt levels in Asia are found in Malaysia, Thailand, Korea, and Singapore. According to Zakaria *et al*. (2017: 518), indicators of household debt in Malaysia are on the rise, raising questions about whether this development might endanger both economic stability and household welfare. It is alarming that the household debt to GDP ratio rose from 68.8 percent in 2006 to 76 percent in 2010 to 84.4 percent in 2016. Chotewattanakul *et al*. (2019: 3) explain that following the Asian financial crisis in 1997, loans from financial institutions have been more concentrated in the household sector. Bank Negara Malaysia has taken into account the effects of raising the policy interest rate on household debt servicing capacity and consumption. In Thailand, household debt increased rapidly between 2009 and 2013, with outstanding loans from the formal financial sector by households nearly doubling from 5.1 trillion Baht at the end of 2008 to 9.8 trillion Baht at the end of 2013. This increase in household debt coincided with a low growth in consumption, as the household debt-to-GDP ratio increased from 52.4 percent in 2008 to 76.3 percent by 2013.

The Chinese economy is also affected by household debt. Canakci (2021: 653) argues that the rise in household debt in China is a result of the financial sector's gradual expansion in the late 1990s and again in the late 2000s following the global financial crisis, which experienced much faster growth, with debt rising to nearly $5.7 trillion and representing nearly 30 percent of Chinese GDP, respectively. Indeed, the main driver of cumulative credit growth in China at the start of 2018 was household debt, which had increased by more than 30 percent.

South Africa records a very high debt level. Meniago *et al.* (2013: 482) maintain that from 74.8 percent in the fourth quarter of 2011 to 74.7 percent in the first quarter of 2012, the ratio of household debt to disposable income progressively fell. According to Meniago *et al*. (2013: 482), despite what is perceived as a slow decrease, this number is still extremely high, and such high levels of household debt may have a negative impact on the economy. In South Africa, the household sector's level of debt has recently mounted new heights accounting for 40.7 percent of the country's nominal GDP as of December 2022. Kereeditse and Mpundu (2021:

115) explain that there has been an increase from R 10, 033, 98 million in 2008 to R 14, 750, 94 million in 2015 in private loans and advances to households. The banking sector is by far the most important source of credit to households.

The rapid rise in household debt over the past 20 years has been a global phenomenon that has affected Australia as well. According to Zabai (2017: 45), the majority of debt in many countries is held by households in the top quintiles of income and wealth distribution. In Australia, households in the highest income quintiles often have debt-to-income ratios that are noticeably greater than those in the lowest quintiles (for instance, in 2014, the top two quintiles had debt-to-income ratios of approximately 200 percent while the bottom two had ratios of about 50 percent). In Canada, the top two quintiles, for example, hold roughly 50 percent of total mortgage debt. Meng and Siriwardana (2013: 80) maintain that Australia's total household debt rose from A$187 billion in 1990 to A$905 billion in 2005. Despite the gearing ratio (total liabilities as a proportion of total assets) being just 18.6 percent in 2005, the debt-income ratio increased significantly from 70.6 percent in 1990 to 162.8 percent in that year as a result of a sharp rise in total assets. To pay off their debt alone, the typical Australian household would need to labor for more than 1.5 years. The following are some types of household debt and their effects on growth:

a. Mortgage debt and economic growth

Mortgage provision has been one of the principal drivers of growth in the financial sector, and most household debt takes the form of mortgage debt. Wood and Stockhammer (2023: 2) state that bank lending has been primarily reoriented away from profitable investment towards lending to homeowners in the form of mortgage credit as a result of the significant returns on retail mortgage products. Wood and Stockhammer (2023: 2) discover that house prices are a major determinant of household debt, and household debt contributes to economic growth (refer to Figure 2.2). They explain that rising house prices facilitate growth in economies via the use of equity-release mortgages in the short run. Stockhammer and Wildauer (2017: 2) agree with the notion that rising real estate prices are another explanation for rising household debt as most household debt is mortgage debt. They discover that if house prices rise and household sector wealth surpasses the desired ratio, households would either take on debt or consume the "excess wealth" if they were unable to sell their assets. If people are unwilling to wait to buy a home, the rising cost of residential real estate relative to disposable income will force them to take out larger mortgages. Economic growth is accelerated as a result of this.

Moore and Stockhammer (2018) also find that house prices have an effect on household debt. They investigate whether effects differ in boom-and-bust phases of the debt and house price cycles. They discovered that the most robust macroeconomic determinant of household debt is real residential house prices and that the phase of the debt and house price cycles plays a role in household debt accumulation. The consumption-oriented explanation of household debt accumulation is derived from the LCH. Moore and Stockhammer (2018: 550) claim that house prices fuel the build-up of household debt because they loosen credit restrictions through the collateral impact and increase household indebtedness through the wealth effect. Because of their increasing wealth, households may not be credit-constrained but instead boost their spending. This can be done by borrowing through mortgage equity withdrawals.

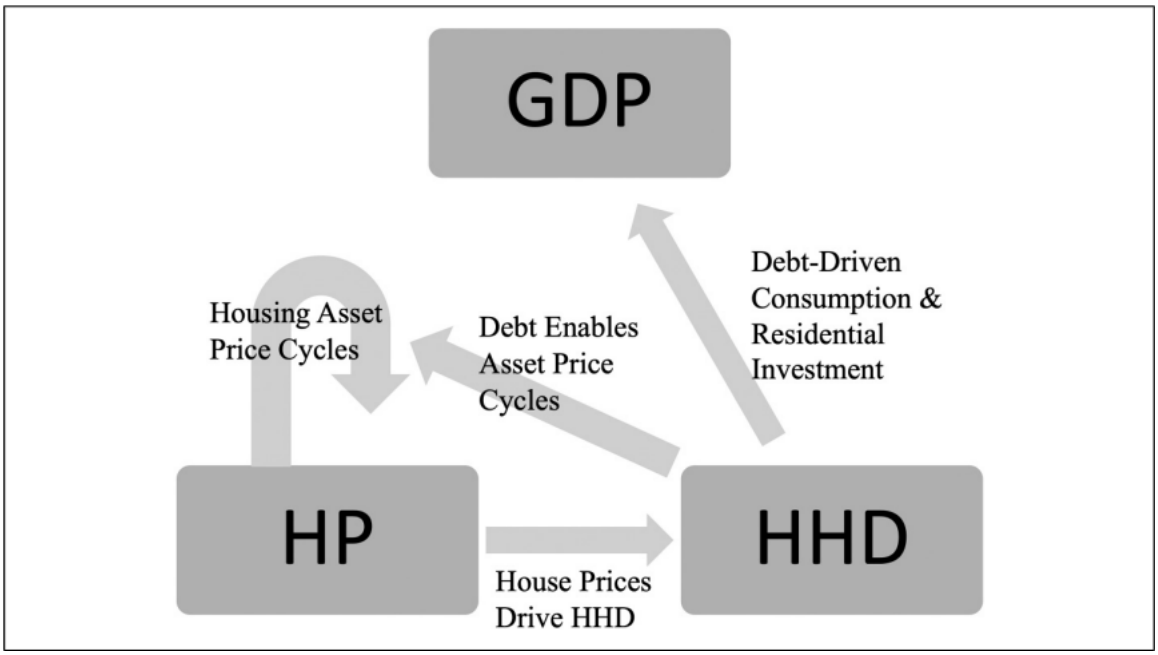

Figure 2.2: Theoretical overview of the macroeconomic effects of house prices and household debt (Wood and Stockhammer (2023: 4))

Mortgage debt arises when households buy houses through a bank loan, using the same property as collateral. According to Prinsloo (2002: 66) one feature of such loans is that, in most circumstances, the mortgagees will need to pay off a specific portion of the property's purchase price before the mortgagor releases the remaining portion of the purchase money. The size of the loan is often determined by the borrower's annual income and the value of the collateral. Although shorter repayment terms can be agreed upon, the loan is typically repaid over a 20–30-year period. Cox and Jappelli (1993) investigate the effect of borrowing

888 constraints on consumer debt and found that the desire for debt increased until the household
889 head reached the mid-thirties and then it declined. Crook (2001: 83) discovered that households
890 headed by an individual over age 55 had a reduced demand for total debt (defined as mortgages,
891 home equity loans, credit cards, and installment debt). Cox and Jappelli (1993) and Crook
892 (2001) explained these relationships based on the LCH. De Gregorio (1996: 64) investigates
893 the relationship between borrowing constraints and growth for OECD and developing countries
894 and found that borrowing constraints will reduce time devoted to formal education and growth
895 and loans to households can only increase economic growth if it is used to invest in their human
896 capital and/or microenterprises. Mortgage debt increased from 20 percent to 50 percent from
897 1990 to 2011 in a variety of nations, pushing total domestic bank debt from around 80 percent
898 of GDP to over 120 percent. This relationship is emphasized in the LCH.

899 Many economists such as Kohl (2018) and Tunc and Yavas (2017) claim that the 2007 financial
900 crisis, often known as the US subprime mortgage crisis and the greatest financial disaster since
901 the Great Depression of the 1930s, led to an increase in mortgage debt. According to Kohl
902 (2018: 178), during the Global Financial Crisis, households in many countries experienced
903 high levels of mortgage debt, challenges with housing affordability, and high property prices,
904 as well as stagnant or declining homeownership rates. By the middle of 2008, the crisis'
905 contagious consequences had reached several parts of the world, including South Africa,
906 Germany, Japan, Denmark, and the Netherlands. Tunc and Yavas (2017: 712) investigate the
907 relationship between mortgage debt and savings in the US from 1987 to 2013. They found that
908 mortgage payments have a substantial negative impact on saving rates and argue that in the
909 United States, the proportion of house mortgage debt to GDP climbed from 30 percent in the
910 1980s to more than 75 percent by 2009. They explained this relationship by using the LCH
911 which states that increased mortgage debt could be associated with improved ability of
912 borrowers to smooth their consumption over their life cycles.

913 The housing boom of the 2000s resulted in the growth of mortgage debt. According to Foote *et*
914 *al*. (2021: 230), the total amount of mortgage debt on the liabilities side of household balance
915 sheets quadrupled between 2001 and 2007, rising from $5.3 trillion to $10.6 trillion. Bhutta
916 (2015: 284) claims that several factors, including equity extraction, an increase in the purchase
917 of second homes and investment properties, and an increase in first-time homebuying by more
918 marginal borrowers because of a credit expansion that may have been partially government-
919 induced, may have contributed to the accumulation of mortgage debt during the housing boom.

At the highest level, mortgage inflows come from customers who rack up debt quickly, while outflows come from consumers who pay it off quickly.

The debt-to-income ratio significantly increased because mortgage debt considerably expanded more quickly than income in the 2000s. Due to this increase and its disproportionate involvement in the foreclosure and financial crisis, many people think that the expansion of subprime mortgages was the main reason for the increase in debt. Foote *et al*. (2021: 230) maintain that subprime lenders provided financing for individuals who were ineligible for so-called prime loans. Low levels of liquid wealth, prior defaults, insufficient income compared to mortgage payments, and sometimes a combination of all three were ineligible reasons. Between 2001 and 2007, subprime lending expanded by over 550 percent or more than five times as quickly as the market, going from accounting for less than 2.5 percent of total mortgage debt to more than 8.4 percent.

The level of mortgage debt will have a significant impact on a home's investment, household wealth, and household consumption. Since national saving and investment rates are closely related, a low saving rate limits the amount of investment the economy can make. It is therefore not unexpected that economists and decision-makers are worried about the welfare consequences of government measures that relax the conditions for house loan eligibility. According to Bezemer *et al*. (2016: 652) a high mortgage-to-GDP ratio might hinder rather than accelerate growth and household credit - the majority of which is in the form of mortgages - has little impact on economic expansion. A high mortgage-to-GDP ratio might inhibit growth. High amounts of private debt might be implied, as well as a decrease in investment and innovation as well as volatility, financial fragility, and crises. In agreement, Sassi and Gasmi (2014: 227) explain that the loan-to-value ratio for mortgages, which measures household credit, has a negative correlation with the rise of the GDP per capita.

According to Lacoviello (2008: 933), the ratio of mortgage debt to disposable personal income (which includes home equity lines of credit and loans) was on average 40 percent from 1960 to 1980 and increased to nearly 75 percent in the late 1990s in the U.S. Mortgages are typically the topic of discourse when talking about household debt. Mortgages are without a doubt the largest debt arrangement that most households will ever sign. According to Johnston *et al*. (2021: 848), mortgages account for the majority of household debt in European and OECD nations, except for post-communist states where the housing stock was substantially privatized before the emergence of a thriving mortgage market. In most OECD nations, long-term home

loans make up between 80 percent and 90 percent of total household liabilities. Johnston *et al.* (2021: 848) claim that mortgages still make up 68 percent of all household debt in the United States, where student loan debt represents the greatest portion of non-mortgage household borrowing (about 10 percent of the total). As a result, when household debt is discussed, it is primarily referred to as borrowing used to finance the purchase of a home. Indeed, there are notable co-movements between household debt and mortgage debt. Chmelar (2013: 4) argues between 1995 and 2007, the stock of household debt in the European Union (EU) increased by approximately three times, but in nations where real estate prices rose significantly, like Ireland or Spain, the debt increased by as much as six times.

b. Consumer debt and economic growth

Households take on debt to cover necessary expenses or keep up with their peers' relative consumption levels. Li *et al.* (2016: 159) investigate the effect of credit constraints on South China's consumption. They discovered that easing credit restrictions enhances rural households' consumption expenditures in developing nations. They use the PIH and LCH to explain this relationship which states that by intertemporal resource allocation, households can reduce their consumption expenditures over their lifetime. Li *et al.* (2016: 164) argue that consumption raises the standard of living for households and boosts the effectiveness of economic growth.

Higher consumption levels result in increases in consumption spending. Mutezo (2014) examined data from 1986-2013 and discovered that higher household debt levels lead to higher consumption spending, and therefore growth in South Africa. The concern arises during a recessionary period in the economy when households struggle to contain these high debt levels. Adewale (2014) examined data from 2007-2012 and established that there is a strong relationship between increasing credit consumption and economic growth in South Africa. The PIH and LCH were used to explain the relationship between household debt and consumption. Asteriou and Spanos (2022: 134) investigate how the credit to private sector affects the impact of household debt on economic growth from 1995 to 2018. It was found that household debt-to-GDP ratios exceeding 63 percent had a negative effect on economic growth and that household debt was more vulnerable to pressure when the credit supply-to-GDP ratio exceeded 70 percent and when the ratio goes beyond 90 percent the pressure becomes higher. Dutt (2006: 339) employs a Steindlian model of growth and income distribution to incorporate borrowing by consumers. It demonstrates how consumer borrowing may raise demand and, in the short

term, enhance growth prospects. The long-term impacts of rising consumer borrowing remain ambiguous, because, by increasing consumer debt, it redistributes income towards the rich who have a higher propensity to save, thereby possibly depressing aggregate demand and growth despite the borrowing-induced expansion.

Households in the South African economy have rising consumer debt. Chatterjee *et al*. (2020: 30) established that in the third quarter of 2019, 28 percent of all consumer credit products in South Africa were unsecured debts. Using the LCH to explain these relationships they found that consumers aged 18 to 24 had a default rate as high as 20 percent during the same time frame. These figures clearly show that a significant portion of the South African population is heavily leveraged, taking out consumer loans without any corresponding assets to back them, which results in a by-default negative net worth. According to the IMF (2017: 53), economic growth benefits start to decline when aggregate leverage is high.

Increasing household debt has been linked to modifications in the way that society provides fundamental services including housing, health, education, and transportation. According to Moore and Stockhammer (2018: 552), private provision has replaced social provision to the extent that it has decreased or failed to grow, mediated through finance. Since housing, health, education, and transportation are important welfare expenditures that are a part of basic household spending, decreasing welfare spending in these areas leads to household borrowing which in turn leads to increased productivity in the economy. Moore and Stockhammer (2018: 552) argue that when not funded by the state, household spending on these areas comes into the basic consumption basket of households and is hence a component of households' battle to sustain consumption standards.

Households with high debt levels may spend most of their income on debt repayments. Taydas and Peksen (2012: 278) claim that household debt can stimulate economic growth by increasing consumption and demand for goods and services, however, when households have high levels of debt, a significant portion of their income goes towards servicing their debt obligations, such as loan repayments and interest payments. This reduces their disposable income available for consumption. As a result, consumer spending may decrease, which can negatively impact overall demand in the economy. Rees (2014: 40), found that debt servicing has proven to be detrimental to growth in an economy using a neo-Kaleckian growth model. Serra (2023: 175) builds a neo-Kaleckian model in which households can borrow to either consume or invest in human capital. In this model, household debt is sustainable if the debt servicing is compatible

with household income growth. According to Serra (2023: 175), household debt can be sustained over time, and debt servicing is compatible with consumption levels above 90 percent of household income. In the short term, new borrowing stimulates economic activity, but debt servicing lowers aggregate demand by shifting income to a class with a lower marginal propensity to consume, reducing aggregate demand.

Consumer spending trends are frequently monitored by marketing managers and public policymakers regularly. Even insignificant changes in consumer spending may have a significant impact on the status of a lot of firms and industries as well as the economy as a whole. Fornell (2010: 28) maintains that neither the government nor particular businesses want consumer spending to decline (except for an overheated economy), and economic policy is made to strike a balance between current spending and savings/investments to allow for future expenditure.

Consumer debt has increased considerably in many countries for many decades now. Salisbury (2014: 49) claims that total outstanding consumer credit totalled $2.84 trillion in June 2013, with $852 billion of that from revolving credit in the U.S. According to Brown *et al.* (2015: 175), U.S. consumer debt grew at an unprecedented rate, during the 2000s. Dutt (2006: 342) states that, since the late 1980s, the ratio of personal disposable income to consumer debt (excluding house mortgages) has climbed in Canada, France, and Germany, while remaining about constant in Japan and slightly declining in the UK. Dutt (2006: 342) explains that although hard time-series data are difficult to come by semi-industrialized nations like India have seen rises in consumer debt as credit card use has increased. Cavalletti *et al*. (2020: 747) postulate that household usage of consumer debt in Italy is still relatively low when compared to other European nations. However, during the 2000s, this type of debt has shown particularly high growth trends, except for a downturn caused by the financial crisis between 2010 and 2015.

The falling wages theory states that households with lower wage earnings borrow money to preserve path-dependent, outdated consumption norms. Barba and Pivetti (2009) claim that the theory of falling wages is consistent with popular post-Keynesian consumption models, such as the neo-Kaleckian and supermultiplier growth models. These models state that autonomous expenditures are those expenditures that are not directly connected to the circular flow of income. According to Barba and Pivetti (2009), these models suggest that in the event of an economic shock, individuals who are badly impacted will be forced to take on debt to sustain

autonomous consumption, which is defined as the purchases that consumers are obligated to make even when they have no disposable income. This results in an increase in the production of goods and services in the economy to meet the consumption needs of consumers. This is explained by the AIH which states that higher household autonomous consumption raises both household debt (through new loans needed to finance it) and aggregate income.

c. Credit card debt and economic growth

One of the main sources of household debt is credit card debt, where the interest rate and credit limitations are based on the borrower's credit card usage. Kim *et al.* (2018: 437) argue that this type of debt is unsecured and solely dependent on the borrower's credit, unlike a mortgage. According to Lin *et al.* (2019: 546), credit card use has grown rapidly in developing countries such as China with the number of credit cards in circulation increasing from 3 million in 2003 to 285 million in 2011. From 2010 to 2011 alone, total consumer credit card transactions increased swiftly by 47.95 per cent, from $718.65 billion to $1.06 trillion. Policymakers are concerned because credit card debt has increased faster than disposable income in households. Credit cards come with several advantages for customers. According to Lin *et al.* (2019: 546), these include having an accurate record of purchases, less need to carry cash, and proof of creditworthiness in the past. The increasing usage of credit cards, however, also raises the risk of many card debt issues.

Credit cards have become an essential tool for financing purchases. Ekici and Dunn (2010: 455) investigate the relationship between credit card debt and consumption using household-level data based on the PIH and LCH. They found that increasing credit card debt used to finance consumption is typically viewed as a positive economic stimulus. However, high amounts of debt raise the possibility that future spending may be restrained, which would eventually hinder the productivity of the economy. Ekici and Dunn (2010: 458) state that determinants like the location, age, or gender of the cardholder may have an impact on factors like payment delinquency rates. Credit card debt has a considerable and detrimental impact on the rise of both total consumption and total outlays. About 75 percent of American households carry at least one credit card, and 58 percent of those using cards do so with debt. The Federal Reserve Board estimates that the current US revolving debt, primarily credit card balances, is above $800 billion. This shows a 600 percent rise in such debt over the last two decades.

The rise in credit card usage and debt has impacted several countries around the world. Kim *et al.* (2018: 437) explain that in 2002, an unprecedented credit card crisis occurred in South Korea. Due to the competition among credit card firms, more people with bad credit were able to obtain credit cards. In 2002, 623 trillion South Korean won (KRW) ($485 billion) were spent on purchases and cash advances made using credit cards. The problem finally caused 4 million borrowers to fall behind on their payments. As a result, by 2004, 357 trillion KRW ($277 billion) had been spent on credit cards. The recent financial crisis in the United States and South Korea's credit card problem are quite comparable. In the second quarter of 2013, household debt surpassed 1 quadrillion KRW ($778 billion), while in 2014, credit card use surpassed 564 trillion KRW ($439 billion). An increase in credit card usage is also seen in New Zealand. Lie *et al.* (2010: 399) established that there are 2.1 million VISA cards and 900,000 MasterCard in use in New Zealand, with total credit card debt owed nationally over the past decade from NZ$1.7 billion in September 1997 to NZ$5.2 billion in October 2008. Personal credit card debt has risen to NZ$8 billion in 2022. Ardington *et al.* (2004: 18) explain that from the period 1995 to 2000 in South Africa, there was an increase in furniture loans, bank overdrafts, and credit cards from the poorest households in the category R0-R5000. Lie *et al.* (2010: 400) argue that the use of credit cards is rising, as is the total amount of credit card debt. Credit cards (and credit card symbols) act as "spending-facilitating stimuli," and, as such, can affect the purchasing behavior of consumers.

2.2.2. Financial liberalization in South Africa

Household savings and household borrowing in South Africa have a clear inverse relationship. Prinsloo (2002: 73) established that household savings and borrowing can be discerned from the beginning of the 1980s. If household assets do not increase in a manner that is equal to or greater than their credit commitments, then a drop in household savings will result. Therefore, as the utilization of consumer credit increases, the saving of private households decreases over time. Alongside these changes, households' net worth as a percentage of their personal disposable increased.

South Africa's low domestic saving rates could hinder investment-driven development in the medium run. Aron and Muellbauer (2000) emphasize the role of substantial financial liberalization in South Africa based on the PIH and LCH. They claim that the net savings ratio declined from 8 percent to 1 percent between the early 1980s and the late 1990s, ranking poorly in comparison to rates in similar emerging-market economies like Chile. In the 1990s, real

interest rates were extremely high, especially following the currency crisis of 1996 - 1998 when real growth was severely depressed. The drop in South Africa's domestic saving rate is mostly attributable to the declining government saving rate from the early 1980s.

The low savings rate among South African households showed negative effects on the growth of the economy. Precious and Asrat (2014: 184) explored the determinants of household savings in South Africa over the period 1990 to 2011 based on the PIH and LCH. Net household savings as a proportion of GDP typically ranged from 1.63 percent in the 1990s to 0.35 percent on average between 2000 and 2005. Net household savings as a share of GDP continued to fall between the years 2006 and 2008, averaging -0.63 percent, before modestly rising to an average of -0.20 percent from 2009 to 2011. It has been suggested that several factors contributed to households' low saving rates in the 1990s.

The drop in the saving rate in the 1990s was attributed to a combination of factors including slow economic development, increased tax, and real interest costs, and reduced per capita income. Even while household saving rates were high from 1998 to 2005, dissaving was also prevalent at a significant rate. Precious and Asrat (2014: 184) explain that the consequences of financial liberalization on reducing household savings were exacerbated by growing household wealth because of rising asset values, notably housing prices, and the drop in interest rates starting in 1998. They further state that in 2002, the South African government came under fire for not encouraging savings, with economists claiming that the government was unfairly taxing high earners, which in turn had a negative impact on household savings since high earners account for most household savings in South Africa.

Financial liberalization had a significant impact on household borrowing and its effects on the economy. Odhiambo (2006) emphasized the role of financial liberalization and savings in South Africa based on the LCH. The author postulates that since the start of financial liberalization in 1980, South Africa has undergone a lot of changes, such as several new financing options for the financial sector. Prinsloo (2002: 74) maintained that due to these modifications, household borrowing as a percentage of income increased. This has influenced a swift rise in credit outstanding and the correspondingly high level of household debt, which has led to a slower pace of household savings. According to Moroke *et al*. (2014: 107), if households don't save, they'll have to borrow money to satisfy their consumption needs.

The widespread financial liberalization in South Africa is especially intriguing for two reasons. Firstly, South Africa's low saving rates, particularly in the private and public sectors, are a sign of the country's enduring systemic weakness, which in the 1990s was manifested in high real interest rates and reliance on inflows of capital. Secondly, despite the financial liberalization process, real house prices in South Africa have decreased almost consistently since 1984, as a result, households have more disposable income to spend on consumption, hence, financial liberalization has directly affected consumption which then results in an increase in productivity of goods and services in the economy. According to Aron and Muellbauer (2000: 16), the various aspects of financial liberalization in South Africa could have a direct, beneficial impact on household debt, with, for example, more freely available credit card loans, lower down payments as a percentage of house values, and more freely available housing equity loans to existing owners.

The level of interest rates has a significant effect on household borrowing. Mutezo (2014: 75) claims that since 2001, a substantial decrease in interest rates occurred. This resulted in a decrease in mortgage loan interest payments, which make up the majority of household debt-service payments in South Africa. According to Azzouza (2021: 29), the decline in interest rates could have been a result of the dot com bubble in 2001 where a recession in global trade occurred affecting economic sectors around the world and leading to a state of economic recession. In a study of South African households between 1980 and 2005, Aron, Muellbauer, and Prinsloo (2007) discover a favorable correlation between the real interest rate on borrowing and the debt-to-income ratio. According to Mutezo (2014: 75), South Africa's debt service ratio decreased by 6 percent because of a decrease in interest rates between 2003 and 2005. According to Aron and Muellbauer (2013), the amount of credit accessible by all sectors increased rapidly until 2006 before declining following the interest rate shock to the same low levels that prevailed before 2004.

The financial crisis has had major impacts on the levels of household borrowing and the growth of the South African economy. Moroke *et al*. (2014: 107) argue that with stock markets falling, financial institutions collapsing, and governments forced to intervene with bailouts while focused on regulatory reform, the 2007–2009 crisis had a significant impact on economies. South Africa’s GDP decline was 15.3 percent in 2009 and the debt-to-disposable income ratio was over 82 percent, but it fell to 75.6 percent in the first quarter of 2013. High levels of household debt are due to a lack of a comprehensive savings culture among people. This

problem was caused by financial illiteracy on the part of the consumers who spend almost all their income leaving little if nothing for their savings and investments.

2.3. Conclusion

Household debt has increased significantly in several countries over the last few decades. This chapter investigates the effect of household debt on economic growth in South Africa using first-generation theories; the absolute income hypothesis, the life cycle hypothesis, the permanent income hypothesis, and second-generation theories; the neo-Kalekian model, Super multiplier model and the Steindl model to explain the behavior of household debt and growth overtime. Mortgage provision has been one of the principal drivers of growth in the financial sector, and most household debt takes the form of mortgage debt. Authors such as Moore and Stockhammer (2018), Stockhammer and Wildauer (2017), and Wood and Stockhammer (2023) discover that house prices fuel the build-up of household debt because they loosen credit restrictions through the collateral impact and increase household indebtedness through the wealth effect. Because of their increasing wealth, households may not be credit-constrained but instead boost their spending. This can be done by borrowing through mortgage equity withdrawals. Hence, they find that house prices are a major determinant of household debt, and household debt contributes to economic growth. However, Bezemer *et al*. (2016) and Sassi and Gasmi (2014) discover that a high mortgage-to-GDP ratio might hinder rather than accelerate growth and household credit - the majority of which is in the form of mortgages - has little impact on economic expansion. Authors such as Adewale (2014), Dutt (2006), Mutezo (2014), and Taydas and Peksen (2012) found that strong relationship between increasing credit consumption and economic growth. They discovered that higher household debt levels lead to higher consumption spending, and therefore growth. However, Dutt (2006) states that in the long run, the effects of increasing consumer borrowing are ambiguous because, increasing consumer debt, redistributes income toward the rich who have a higher propensity to save, thereby possibly depressing aggregate demand and growth despite the borrowing-induced expansion. Ekici and Dunn (2010: 455) investigated the relationship between credit card debt and consumption using household-level data and found that increasing credit card debt used to finance consumption is typically viewed as a positive economic stimulus. However, high amounts of debt raise the possibility that future spending may be restrained, which would eventually hinder the productivity of the economy. Authors such as Abd Samad *et al.* (2020)

and Lombardi *et al*. (2017) state that household debt has a short-term positive effect on growth but is detrimental to growth in the long run.

An increase in household debt has a significant impact on economic growth, with higher levels of household debt being associated with either a positive or negative effect on the overall economic growth of a country. This hypothesis could be tested by collecting data, analyzing trends, and performing statistical analysis to determine the effect of specific household debt types on economic growth in South Africa and to estimate growth-maximizing thresholds of specific household debt types. Tighter macroprudential measures or tighter mortgage interest deductions are two approaches that could address the issue of household debt.

CHAPTER 3: HOUSEHOLD DEBT IN SOUTH AFRICA

3.0. Introduction

The South African household sector's level of debt has lately reached unprecedented levels, sparking attention to this statistic, and raising questions about its sustainability and the overall state of household finances in some quarters. This chapter provides an overview of recent changes in the aggregates of household debt and addresses the trends and changing composition of household debt in South Africa.

3.1. Trends of household debt variables

Household debt is often expressed as a ratio of the annualized disposable income of households. This ratio of household debt to disposable income is displayed in Figure 3.1. According to van den Heever (2006: 54) it will be noted that the household debt ratio fluctuated significantly during the 1970s, when credit ceilings were in place from the late 1960s to 1972, slowing the rate of increase in bank credit extension. As the ceilings were lifted in 1972, credit growth accelerated. However, at the same time, nominal disposable income increased sharply due to rising gold prices and accelerating inflation, which only decreased to single digits in the early 1990s after reaching double digits in 1974. As a result, the household debt ratio increased moderately. van den Heever (2006: 54) claims that credit ceilings were once again enforced between 1976 and 1980, which slowed the rate of growth in bank credit extension. When they were abolished in September 1980, credit-hungry consumers streamed to the banks to apply for loans that had not been previously available. In the early 1980s, there was significant growth in household debt due to factors such as financial liberalization, low-interest rates, growing employment and income levels, and another gold boom that reduced the sensitivity to borrowers' creditworthiness.

Households' appetite for debt was dampened by a sharp tightening of monetary policy and a decline in economic prospects after the household debt ratio rose sharply until the mid-1980s. van den Heever (2006: 54) explains that in 1984, the prime overdraft rate - which acts as a benchmark lending rate - was increased drastically to 25 percent annually. Economic sanctions were also placed on South Africa, damaging economic prospects and confidence. In this process, the debt ratio rapidly decreased.

Black South Africans were able to acquire businesses and real estate in previously forbidden areas and to utilize the banking system, including its credit facilities, on a larger scale after discriminatory laws were lifted in the late 1980s and early 1990s. Bond (2012: 18) states that when banks and building societies participated in around 200,000 township housing mortgage bonds, the debt ratio began to rise again in the late 1980s.

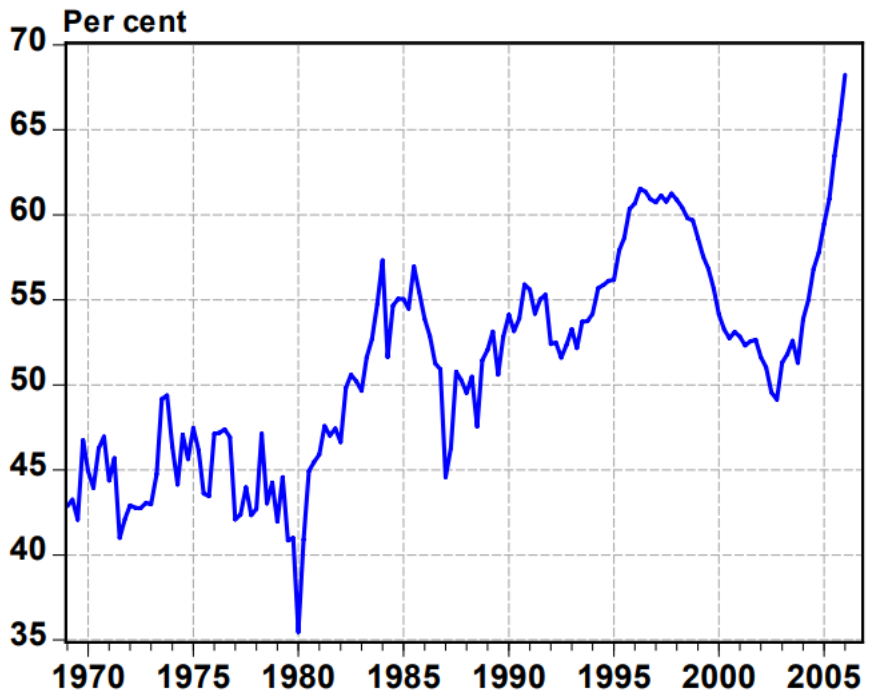

Figure 3.1: Ratio of household debt to disposable income (van den Heever (2006: 55))

According to van den Heever (2006: 54), the upward trend in the debt ratio continued until 1996, leveling off as a tight monetary policy was maintained. However, following the 1998 Asian financial crisis, interest rates shot up to all-time highs, with the prime overdraft rate rising as high as 25.5 percent annually. This resulted in decreased spending, a decline in real estate prices and activity, and stopped households' use of credit in its tracks. Even with interest rates falling significantly between 1999 and 2001, households were still reluctant to take on more debt. van den Heever (2006: 54) explains that a relatively mild tightening of interest rates in 2002 also had a role in the restrained rise of household debt. It was not until 2003 that the debt ratio began to rise once more due to a decrease in interest rates. Rising house prices reinforced the demand for and supply of mortgage finance, while the ready availability of such finance, alongside strong consumer confidence, contributed to rising house prices.

The financial crisis of 2007–2009 emerged in the U.S. Moroke *et al*. (2014: 107) state that South Africa and the majority of developing nations were also negatively impacted by this crisis. According to the SARB Financial Stability Report (SARB, 2009: 22) the growth rates of household financial assets and net worth have been steadily declining, and they began to decrease in the third and fourth quarters of 2008. This may indicate that households may be liquidating part of their financial assets to reduce their debt during this period of financial strain. Large revaluation losses in household financial assets may have resulted from declining equity prices, which might have a detrimental effect on funded pension systems.

Consumer confidence has been undermined and the outlook for consumption has been weakened by the financial market volatility and the increasingly noticeable economic slowdown. According to SARB (2009: 23), the gain in consumer confidence that occurred in the third quarter of 2008 was undone in the fourth quarter when the index point value dropped to -4. Consequently, consumer expenditure remained subdued. Despite lower borrowing prices in December 2008 and January 2009, banks and other licensed credit providers tightened their lending rules, making it harder for households to get credit. It also appears that households are reluctant to accumulate more debt. SARB (2009: 23) found that from the second quarter of 2008, the annual growth rate of household credit has been declining, and as of January 2009, it was 8.4 percent. In the second half of 2008, there was a rise in the number of credit-active consumers, and 7,3 million (41,6 percent of credit-active consumers) had credit records that were impaired.

The indebtedness of the household sector represents a potential channel of contagion through which an external shock can affect the financial system. According to the SARB (2009: 23), such a shock can take the form of a sharper or more prolonged slowdown in the economy. In the fourth quarter of 2008, the rate of increase in household debt on an annual basis decreased. During the same period, household debt increased slightly as a percentage of GDP and disposable income. Furthermore, there were slight increases in the financing costs of household debt (income gearing) and capital gearing over the same period, reflecting relatively high borrowing costs.

According to SARB Annual Economic Report (SARB, 2012: 10) 2009 saw a fall in household real final consumption spending for the first time in 17 years. Thereafter, the household sector's consumption expenditure recovered, with growth rates of 3.7 percent in 2010 and 5.2 percent in 2011. Rather than being boosted by credit extension, household expenditure in 2011 was

mostly financed by income growth. With an average nominal household debt of R1 317 billion in 2011, nominal household debt increased by 7.2 percent from 2010.

SARB (2012: 10) explains that this rate of increase is, however, substantially lower than the average rate of increase of around 20 percent between 2003 and 2008 (see Figure 3.2 panel A). Nonetheless, since the fourth quarter of 2008, the increase in household debt has lagged behind the growth in disposable income for households. Thus, from an average of 78,2 percent in 2010 to 75,9 percent in 2011 and 74,7 percent in the first quarter of 2012, the ratio of household debt to disposable income decreased.

Muneri and Kuhn (2023: 98) state that the household debt-service cost to disposable income ratio, which displays the proportion of disposable income required annually to cover interest payments on existing debt, is a measure of a household's ability to pay back debt interest. (see Figure 3.2 panels B and C). The ratio indicates how much disposable income is diverted away from consumption expenditure to pay interest on current debt and indicates if households could, from a cash flow perspective, afford to sustain further debt to support final consumption expenditure.

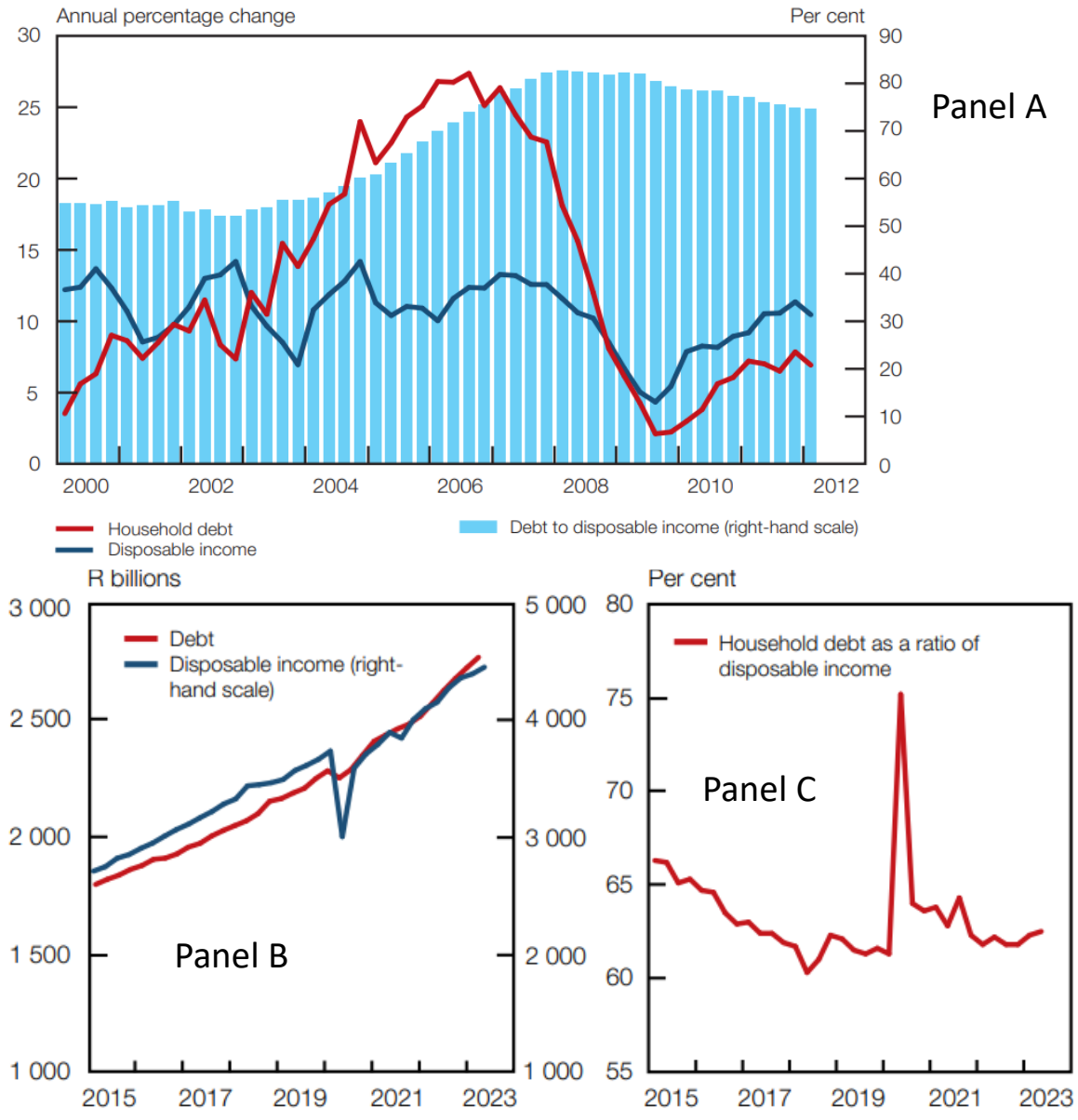

Figure 3.2: Panel A shows the ratio of debt to disposable income (SARB Annual Economic Report (SARB, 2012: 10)). Panel B and C show household debt and disposable income (Muneri and Kuhn (2023: 98))

The SARB Financial Stability Review (SARB, 2016: 20) explains that growth in household debt moderated slightly to 5,6 percent year on year in the fourth quarter of 2015, but the low growth in household income coupled with increasing interest rates have put more pressure on household finances.

Furthermore, households are especially susceptible to economic downturns, interest rate shocks, and income shocks due to their ongoing high levels of debt. SARB (2016: 21) found that the rise of overdrafts, advances, and general loans accelerated in the fourth quarter of 2015,

accounting for 4,5 percent of the credit given to households. In the fourth quarter of 2015, household mortgage advances increased by 4,4 percent year over year, from 3.8 percent. The National Credit Regulator reports that there was a decline in the demand for credit as evidenced by the 52,7 percent rejection rate by lenders in the third quarter of 2015, down from 56 percent in the second quarter, and the 2,4 percent decline in credit applications during the same period.

According to the SARB Financial Stability Review (SARB, 2019: 28) the rise in household debt remained on its upward trend, rising from 5.9 percent in the first quarter of 2019 to 6.3 percent in the second (see Figure 3.3). Since the second quarter of 2017 (Figure 3.4), the growth in credit granted to households has been steadily rising. It grew from 5.9 percent in the first quarter of 2019 to 6.2 percent in the second quarter. The substantial rise in unsecured loans to the residential sector is especially concerning. The majority of this expansion, according to SARB (2019: 28), has been caused by an increase in the more expensive forms of credit (credit cards, advances, and general loans), which may be a sign that households are becoming more financially vulnerable. Steady debt growth increases household income, encourages spending, and ultimately fosters economic growth. However, growing debt (particularly unsecured debt) in an economy that is contracting, together with a slowdown in the rise of disposable income, raises concerns about the sector's ability to service its debt.

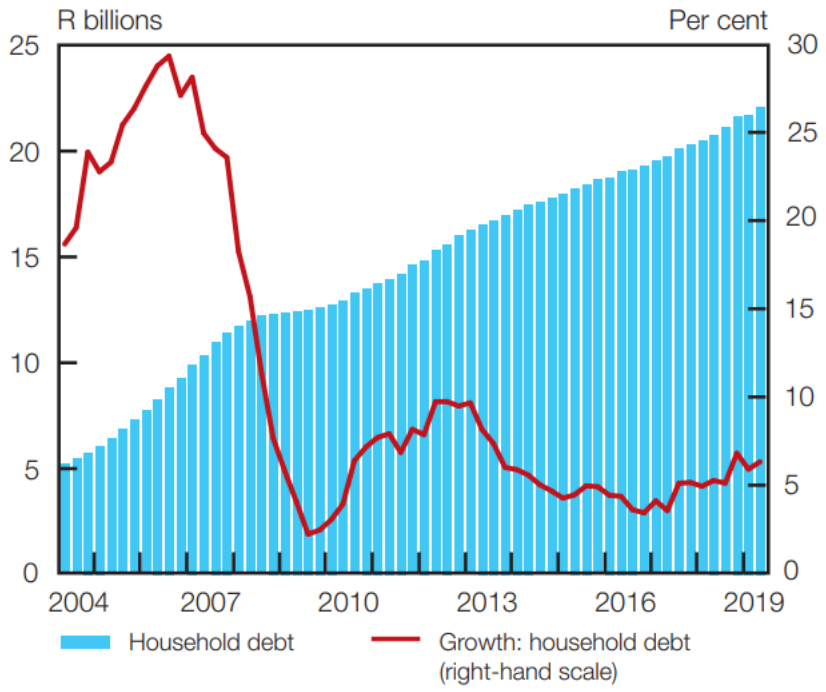

Figure 3.3: South African household debt (SARB Financial Stability Review (SARB, 2019: 28))

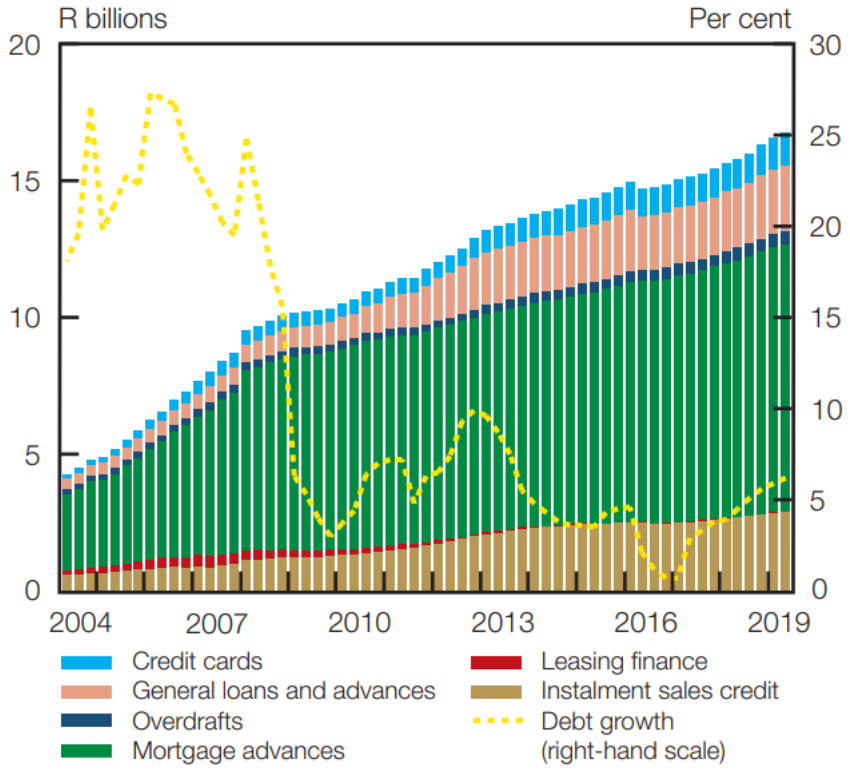

Figure 3.4: Composition of household credit (SARB Financial Stability Review (SARB, 2019: 28))

After a steep run-up during the lending boom of the mid-2000s, household debt peaked at close to 88 percent of annual disposable income in 2008. The SARB Financial Stability Review (2021: 5) explains that household debt as a percentage of income gradually decreased after the global financial crisis and the National Credit Act 34 of 2005, which was passed to promote a fair and non-discriminatory marketplace for access to consumer credit. However, as a result of COVID-19, the debt ratio rose once again in 2020, reaching 75 percent by the end of the year. Although it is below its 2008 peak, household debt remains above the levels recorded before the mid-2000s and exceeds its long-term average of 70 percent of disposable income.

Muneri and Kuhn (2023: 95) postulate that the amount of outstanding household debt in South Africa increased at an average annual rate of 5.2 percent between 2015 and 2022. As of the second quarter of 2023, the total outstanding balance was R2 783 billion, of which credit granted by the banking industry accounted for 75 percent and credit from non-bank entities for 25 percent. The amounts payable to municipalities amount to 8.3 percent of non-bank debt. Mortgage advances, the single-largest credit category, accounted for 45.7 percent in the second

quarter of 2023, with its contribution falling from 48.7 percent in the first quarter of 2015 due to an increase in the relative exposure to other accounts payable and short-term loans.

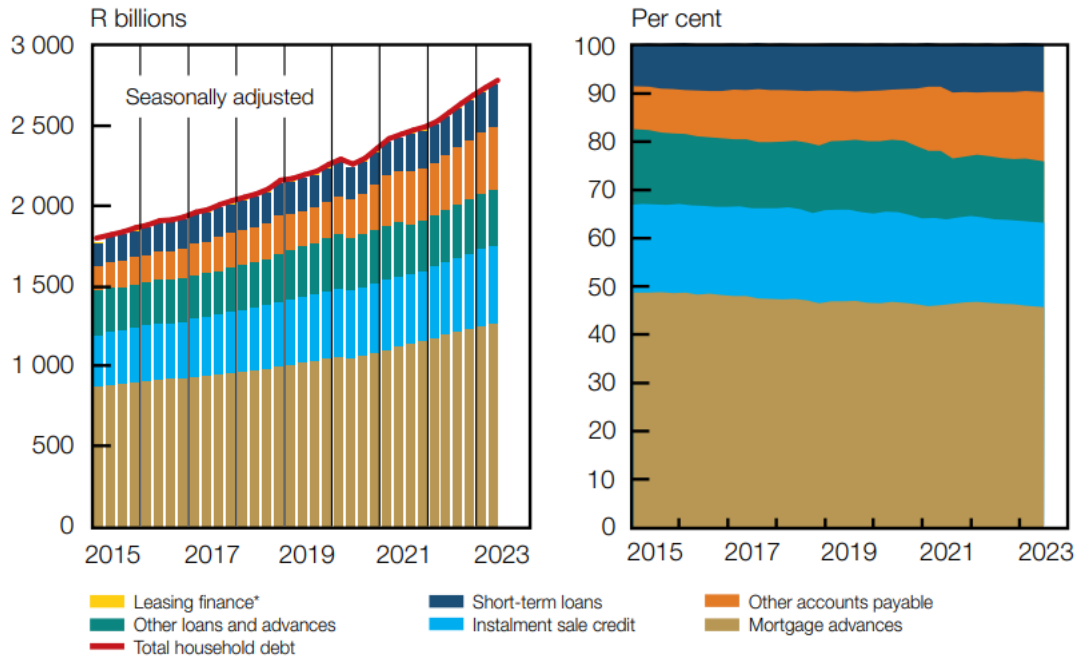

Figure 3.5: Level and composition of household debt (Muneri and Kuhn (2023: 95))

Figure 3.6 shows that the ratio of credit card debt to GDP has generally increased over the years, indicating that acquiring credit card debt has become relatively easier. On the other hand, the ratio of mortgage debt to GDP has also shown an increasing trend, suggesting that acquiring mortgage debt has become more accessible as well. This data implies that both credit card and mortgage debt have become easier to acquire over time, potentially reflecting changes in lending practices, economic conditions, and consumer behaviour. It is important to note that other factors such as interest rates, lending standards, and regulatory policies also play a significant role in determining the difficulty and ease of acquiring these types of debt.

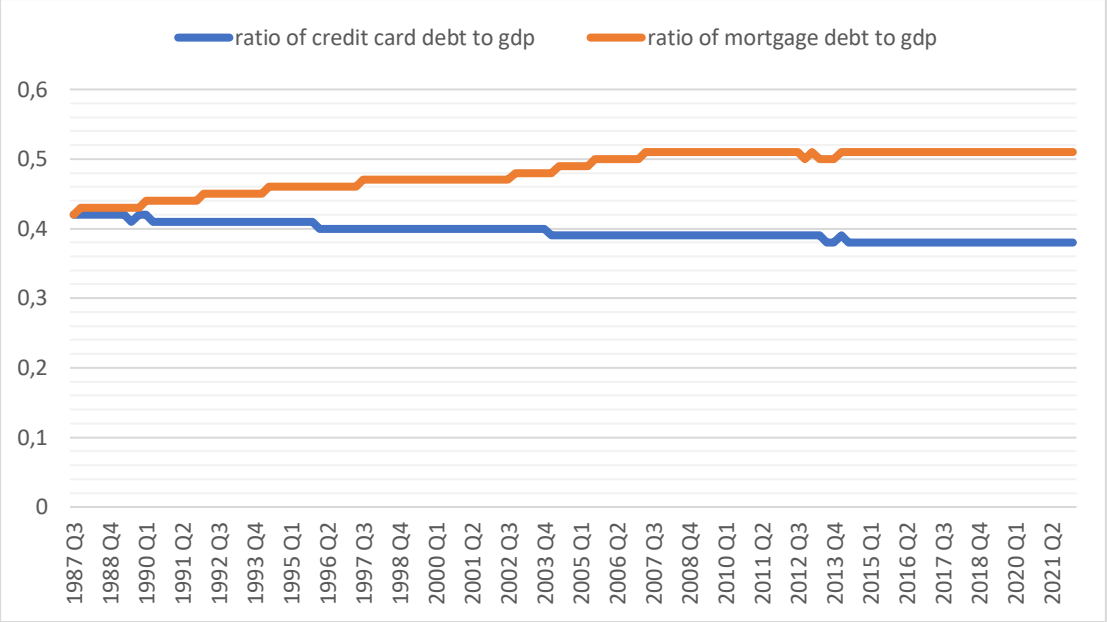

Figure 3.6: Comparison between credit card debt and mortgage debt as a ratio of GDP.

3.2. Conclusion

The household sector's debt and debt-service cost statistics, together with related ratios to disposable income, facilitate the analysis of household indebtedness in South Africa. The domestic household sector remains vulnerable but resilient amid the challenging macroeconomic environment. The impact of the 2007-2009 financial crisis and the COVID-19 pandemic on economic activity, thus far, has had the largest detrimental impact on household income and balance sheet positions. From a policy perspective, further work needs to be done to understand the impact of household debt on the South African financial system, specifically focusing on disaggregated household debt data to provide a complete picture of vulnerabilities in the household sector.

CHAPTER 4: METHODOLOGY

4.0. Introduction

Having examined, as part of the study's literature component, the effect of household debt on economic growth, the attention is now on the empirical aspects of the investigation of the nature of the relationship between household debt and economic growth. The overall goal is to determine the effect of household debt on economic growth in South Africa. More specifically, to determine the effect of specific household debt types on economic growth in South Africa, and to estimate growth-maximizing thresholds of specific household debt types. The chapter presents the methodology employed to investigate the effect of household debt on economic growth. The chapter includes the model specification and unit root tests, the empirical strategy which includes data sources and definitions and the research paradigm which includes research philosophy and research type. By thoroughly documenting the approach, the aim is to provide transparency and rigor in the research process, ensuring the reliability and validity of the findings.

4.1. Model specification and unit root tests

Firstly, this study employs the augmented Dicky–Fuller (ADF) test to check the stationarity of the variables. The null hypothesis is H_0: $\delta = 0$ which implies that the series contains a unit root, and the lag will be chosen based on the Akaike Information Criterion (AIC). The ADF test equation may be estimated as follows:

$$\Delta Y_t = \beta_0 + \beta_1 t + \delta Y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta Y_{t-i} + \mathcal{E}_t \qquad (1)$$

The approach integrates the definition and estimate of a growth equation based on the growth and debt literature to evaluate the effect of household debt on growth, in accordance with both previous empirical results and the relevant economic theory which states that household debt can boost economic growth in the short run, however, in the medium term, high debt in the economy can make a recession deeper and longer.

The ADF test incorporates lagged differences in the regression equation, allowing it to capture trends and serial correlation in data, which makes it suitable for a wide range of time series. The ADF test provides straightforward results, making it easy to interpret. The test statistic is compared to critical values to determine stationarity, simplifying the decision-making process.

ADF is versatile and can handle different time trends, including linear and quadratic trends, providing flexibility in analysing various types of time series data.

Alternatively, a Philips-Perron unit root test is performed to check the stationarity of the variables. The null hypothesis is H_0: $\delta = 0$ which implies that the series contains a unit root, The test is an extension of the Dickey-Fuller test and is designed to address some of its limitations. The Philips-Perron test equation may be estimated as follows:

$$\Delta Y_t = \alpha + \beta_t + \gamma Y_{t-1} + \sum_{i=1} p\delta_i \Delta Y_{t-i} + \mathcal{E}_t \quad (2)$$

The Philips-Perron unit root test offers flexibility in handling various deterministic components, making it robust to serial correlation, less sensitive to model specification, and adept at detecting unit roots with improved power properties. Its capacity to accommodate structural breaks and handle heteroscedasticity makes it suitable for analysing data with evolving characteristics.

According to Mian *et al*. (2017), the full dynamic relation between debt and GDP growth is most easily seen in a VAR specification with a VAR Granger causality/block exogeneity test, variance decomposition, and impulse responses from a Cholesky identification scheme. It is important to clarify from the outset that the VAR analysis is not meant to identify causal patterns.

The study also employs a Toda-Yamamoto test for mortgage debt. The Toda-Yamamoto test verifies the existence of long-term equilibrium relationships between variables. It applies a standard VAR model while variables are in levels rather than first differences (unlike the Granger causality test) implying that the risk of wrongly identifying the order of integration of the series is minimized. According to Marire (2023: 4), a Toda-Yamamoto Vector Autoregressive (TY-VAR) model was developed so as to retain test statistics, '*t*' and '*F*', that follow standard distributions. Toda and Yamamoto (1995) show that when series in a system of equations are integrated of different orders, the '*t*' and '*F*' statistics follow non-standard distributions. To correct that problem, they devised an estimation procedure that essentially overfits the VAR. The TY-VAR system for net household savings was represented as:

$$lngdppc_t = \alpha + \sum_{i=1}^{n-1} \prod_i lngdppc_{t-i} + \sum_{j=n}^{d\ max} \prod_j lngdppc_{t-i} + \mathcal{E}_t \quad (3)$$

In Equation *(2)*, α is a constant, Π_i is an n × n matrix of coefficients, $\mathcal{E}_t \approx iid\ (0, \Omega)$, *dmax* is the maximum order of integration. If all the variables are integrated of the same order, the term $\sum_{j=n}^{d\ max} \prod_j lngdppc$ is dropped and a standard VAR is modelled.

According to Gujarati and Porter (2003: 788), the VAR model is easy to use; it eliminates the need to distinguish between endogenous and exogenous variables. In VAR, every variable is endogenous. The estimation is simple; that is, each equation may be estimated independently using the standard OLS method. It has desirable properties such as consistency, asymptotic normality, and asymptotic efficiency. In many instances, the forecasts produced by this approach exceed those produced by the more complex simultaneous-equation models. Alternatively, Method of Moments (MoM), and Maximum Likelihood Estimate (MLE) estimation methods could be used.

There is a need to determine the growth-maximising debt level because it is crucial to keeping the economy stable and growing while avoiding the negative effects of high debt. Therefore, a quadratic regression is employed,

$$y = \alpha x^2 + \beta x + c \qquad (4)$$

where $\alpha \neq 0$. This regression will be run for each debt type. Household debt, credit card debt and mortgage debt.

4.1.1 Diagnostic tests

Diagnostics tests such as normality tests, serial correlation tests, heteroscedasticity tests, and stability tests are carried out. Diagnostic tests determine if the VAR model fits the data and if the model's underlying assumptions are met. They help identify model misspecification, determine the optimal lag order, assess the quality of predictions, and offer insights into the relationships between variables. The diagnostic tests are performed because they identify both strengths and weaknesses of the models. Model diagnostics involve checking how well the model fits, if the model fits poorly, we consider changing the specification of the model.

According to Gujarati and Porter (2003: 131) the normality test is done via Jarque–Bera (JB). The JB test of normality is an asymptotic, or large-sample, test. It is also based on the OLS residuals. This test first computes the skewness and kurtosis measures of the OLS residuals and uses the following test statistic:

$$JB = \frac{n}{6}(S^2 + \frac{1}{4}(K-3)^2) \quad (5)$$

where n is the sample size, S is the sample skewness and K is the sample kurtosis. The null hypothesis (H_0) of the Jarque-Bera test is that the data follows a normal distribution. If the calculated JB test statistic is significantly different from zero, it suggests that the null hypothesis should be rejected, indicating non-normality in the data.

The Breusch–Pagan–Godfrey test is a valuable tool in econometrics, combining the Breusch–Pagan test for heteroscedasticity and the Godfrey test for serial correlation (Gujarati and Porter, 2003: 385). By assessing both issues simultaneously, the test helps researchers to identify and address violations of key regression assumptions. Its benefits include improved diagnostic information, robustness checks, model improvement, avoidance of biased inferences, enhanced model validity, and compatibility with time series data. The test provides a comprehensive evaluation of residuals, contributing to more reliable and accurate regression results. The Breusch–Pagan–Godfrey test statistic can be written as follows:

$$\Theta = \frac{1}{2} \quad (\text{ESS}) \quad (6)$$

that is, Θ follows the chi-square distribution with $(m - 1)$ degrees of freedom.

Stability is an important consideration when working with Vector Autoregressive (VAR) models. Stability in the context of VAR models means that the processes are well-behaved and that shocks to the system do not have explosive effects over time. The VAR stability tests performed include the roots of the characteristic polynomial - the characteristic polynomial is derived from the lag operator applied to the VAR model. All roots should lie inside the unit circle for stability and the impulse response function - analysing the impulse response functions can also provide insights into the stability of the VAR model. If the responses to shocks do not explode over time, it is an indication of stability.

4.2. Empirical strategy

4.2.1. Data sources and definitions

The key variables of the study are overall household debt, credit card debt, mortgage debt, and economic growth. Following Abd Samad *et al.* (2020), Daud *et al*. (2021: 161), Kereeditse and Mpundu (2021), Li *et al*. (2022), and Samad *et al*. (2022) among others, control variables in the analysis include government spending and interest rates.

The South African Reserve Bank and the Federal Reserve Bank of St. Louis were the sources of data. The period of study is 1987Q3 to 2022Q1. The period is selected due to the availability of data.

The data sources and definitions are presented in Table 4.1. It is important to note a few important definition conventions in this paper.

Table 4.1: Data sources and definitions

Variable	Variable definition	Data source
GDP per capita (logGDPpc)	Utilized GDP per capita, defined as the sum of gross value added by all resident producers in the economy plus any product taxes, divided by mid-year population. Measured as log (GDPpc)	SARB
Household debt (hhd_t)	Ratio of household debt to disposable income, in percent.	SARB
Credit card debt($lncreditcrd_t$)	Type of unsecured liability that is incurred through revolving credit card loans. Measured as log (credit card debt)	SARB
Mortgage debt($lnmortdebt_t$)	A mortgage is a loan of money which you get from a bank or building society in order to buy a house. Measured as log (mortgage debt)	SARB
Interest rates (Irt_t)	Prime lending rate is an interest rate used by banks, usually the interest rate at which banks lend to customers with good credit.	Federal Reserve Economic Data (FRED)
Government expenditure ($gvtexp_t$)	Government expenditure can be defined as the total sum of money a government uses to finance its activities and functions, in percent.	SARB

4.2.2 Justification of variables

The dependent variable is GDP per capita which captures the level of economic development. It shows how the size of the economic pie is growing relative to the mouths that feed on it. So, finance-led growth policies envisage credit driving the size of the pie at a faster rate than demographic growth.

The paper controls for several explanatory variables. Following authors such as Abd Samad *et al*. (2020), Asteriou *et al.* (2022), and Bezemer *et al*. (2016), household debt is examined to understand its relationship with economic growth. This is essential to the study because high levels of household debt can affect consumer spending, saving and investment patterns, and ultimately, economic growth. Government expenditure has an effect on growth and can indirectly influence household debt levels on economic growth, for instance, government expenditure on social programs can reduce household reliance on debt. According to Mian *et al.* (2017), interest rates are controlled for because they play a significant role in influencing household debt levels. Changes in interest rates can directly impact the borrowing behaviours of households, as well as impact investment and inflation which affect growth.

4.3. Research Paradigm

4.3.1. Research Philosophy

The research philosophy used in this study is Positivism – which is commonly used in quantitative studies. Ryan (2018: 4) explains that positivists believe that there are facts that can be proven, the reality is the same for each person, and observation and measurement tell us what that reality is.

According to Alharahsheh and Pius (2020: 41), finding visible and quantifiable facts or regularities is the main goal of the research. Additionally, the phenomena measured and observed will lead to the development of credible and meaningful data. The aim is to find a causal relationship between household debt and economic growth in South Africa.

4.3.2. Research type

A deductive (quantitative) research type is used, this tends to be confirmatory in approach. Soiferman (2010: 3) defines deduction as beginning with the general and ending with the specific. Deductive researchers "work from the 'top-down', from a theory to hypotheses to data

to confirm or confute theory. In theory, a rise in household debt boosts growth in the short term but may give rise to macroeconomic and financial stability risks in the medium to long term. The objective is to investigate the effect of overall household debt and specific debt types on economic growth in South Africa and to identify the thresholds at which a given type of debt maximizes growth.

4.4. Conclusion

In conclusion, this methodology chapter has outlined the research methods employed in this study to address the research objectives of determining the effect of household debt on economic growth in South Africa and more specifically, to determine the effect of specific household debt types on economic growth in South Africa and to estimate growth-maximizing thresholds of specific household debt types. The chosen methods were carefully selected based on their alignment with the research questions and the nature of the phenomenon under investigation. This study uses publicly available data; thus, no ethical clearance was required. The methodology employed in this study provides a solid foundation for generating reliable and meaningful results. By adopting a rigorous and ethical approach to data collection, this research aims to contribute to the existing body of knowledge on the effects of household debt on economic growth in South Africa.

CHAPTER 5: RESULTS AND DISCUSSION

5.0. Introduction

In this chapter, the results of the effect of household debt on economic growth in South Africa are presented. The primary objective of this research is to, first, investigate the effect of overall household debt on economic growth in South Africa. Secondly, to determine the effect of specific household debt types on growth. Lastly, to identify the thresholds at which a given type of debt will maximize growth. Through data collection and analysis, valuable insights have been uncovered on the effects of household debt on economic growth in South Africa.

In this chapter, scatter plots and trend analyses are carried out, followed by the interpretation of unit root results and VAR results. The results presented contribute to the existing body of knowledge in economics specifically in an African country because research on the effects of household debt on economic growth in African economies is lacking, therefore, offering insights that can inform future research and policy development is crucial.

5.1. Descriptive analysis

Figure 5.1 shows that there is a positive relationship between GDP per capita and household debt. The correlation is (sqrt (0.6747) = 0.82), which is strong. Gelb (2003: 30) states that from the mid-1970s, South Africa endured a period of crisis as political and economic issues intensified and ultimately brought about the country's democratic transition. In the first half of the 1980s, liberalization increased conflict, which was further heightened by economic problems following the rise in global interest rates and the 1981 collapse of the gold price. Gelb (2003: 30) explains that in 1985, international creditors forced capital outflows for debt repayment as a response to risk, which led to contractionary macroeconomic policies that guaranteed a current account surplus. GDP growth decreased as the crisis deepened, going from 5.5 percent annually in the 1960s to 3.3 percent in the 1970s and 1.2 percent in the 1980s. According to Marire (2023: 59) up until the 1990s, the household debt to disposable income ratio, and the repo positively co-evolved. Between the 1990s and the 2000s, however, the connection changed, with the debt ratio increasing by around 20 percent and the repo rate decreasing by approximately 37 percent. A falling policy rate tends to cause households to accumulate more debt. Household savings fell significantly from the 2000s to the 2020s.

A rise in household debt from the early 1990s to the 2000s could have been a result of the dot com bubble from mid-90s-2000/1 where a recession in global trade occurred affecting economic sectors around the world and led to an economic recession. According to Östensson (2012: 17), from 2002 to 2008, world commodity markets experienced a dramatic increase in demand and spectacular price rises. The rising commodity prices affect economic growth and employment, which affects household incomes and levels of borrowing, which further affect economic growth.

Figure 5.2 reveals that the 2007-2009 financial crises influenced the household debt level in South Africa. The level of household indebtedness reached new heights. According to Kereeditse and Mpundu (2021: 116), credit from the banking sector in the form of loans and advances to households increased from R 10 million in 2008 to R 14.7 million in 2015. According to the IMF (2017: 54), the COVID-19 pandemic resulted in highly indebted households defaulting on debt and many loans turning into bad debt and non-performing loans, resulting in systemic financial instability. Household debt levels have decreased post-COVID due to lockdown measures being removed resulting in functioning economic activity.

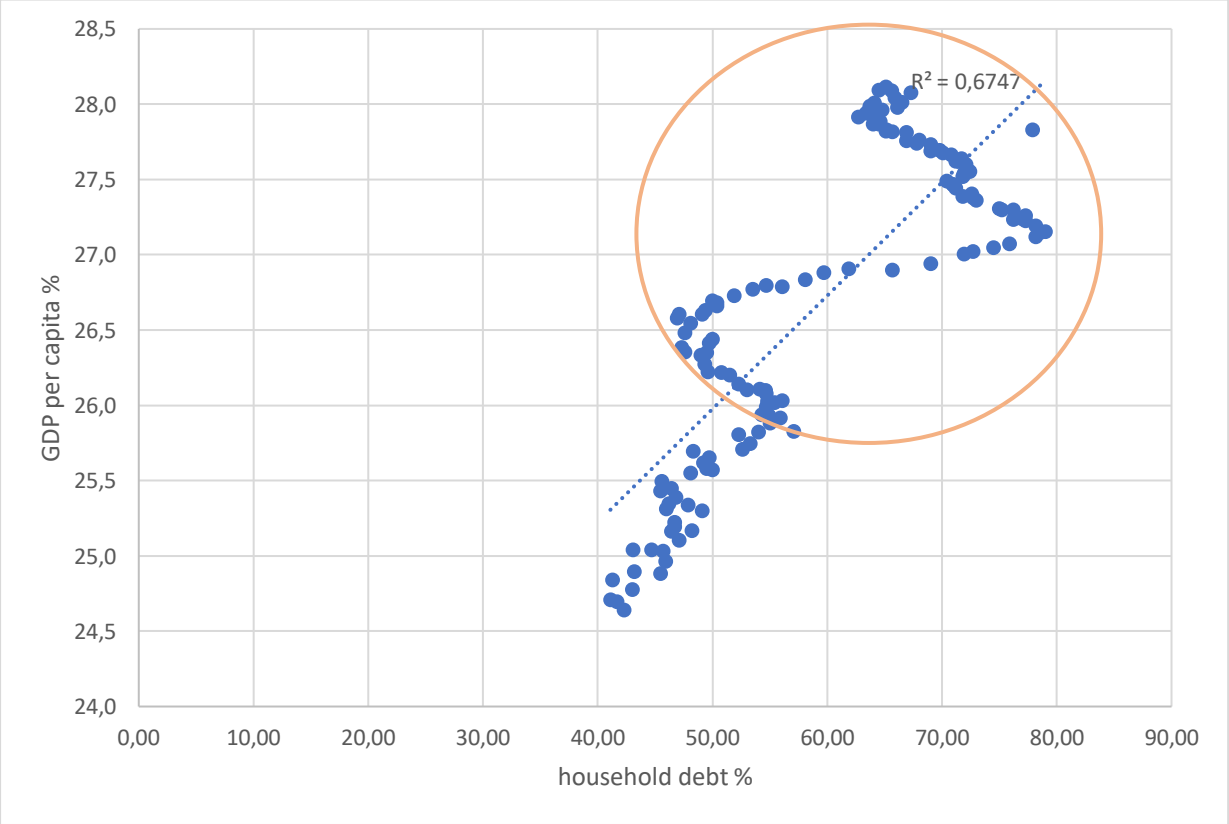

Figure 5.1: Scatter plots of household debt and GDP per capita

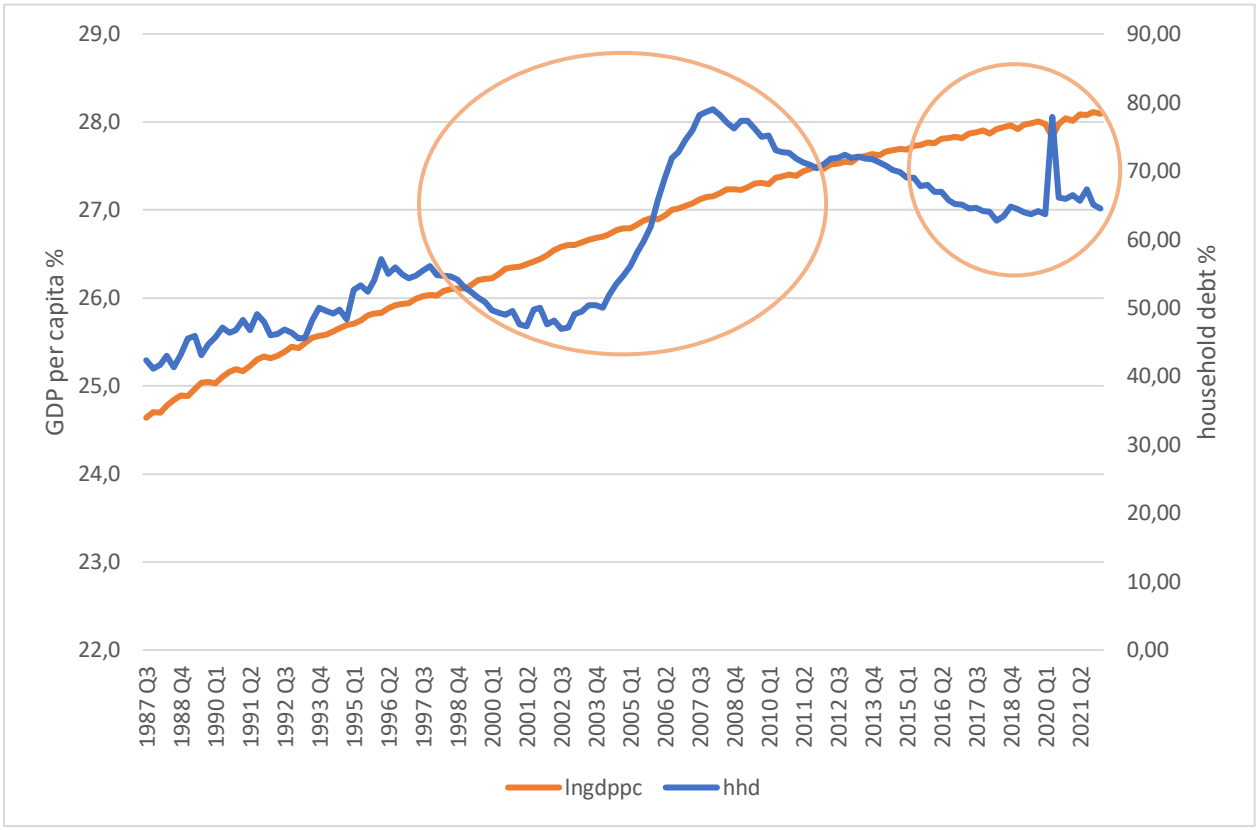

Figure 5.2: Household debt and GDP per capita

5.2. Results and analysis

The empirical analysis begins with a number of preliminaries, which involve the unit root test, cointegration test, and Akaike and Bayesian information criteria (AIC and BIC) tests. All of these tests support VAR selection with dependence on the conventional Cholesky ordering. Before the empirical results are presented, the endogeneity problems in the estimation of the household debt-growth relationship are discussed and a solution is proposed in the form of a VAR framework. According to Benitez *et al*. (2016: 2), the endogeneity problem is often ignored, and when not properly corrected it may generate errors in the estimation of coefficients leading to non-correct results. Therefore, the endogeneity of household debt and economic growth is taken into consideration when examining the relationship between them.

5.2.1 Unit root tests

An Augmented Dickey-Fuller test is performed to determine the stationarity of variables. The null hypothesis states that the time series is not stationary. Therefore, if the test statistic is significant at the 5 percent level of significance, the null hypothesis is rejected, and it is concluded that the time series is stationary in levels, otherwise, it has to be differenced (Gujarati and Porter, 2009). The variables GDP per capita, household debt, credit card debt, interest rates, and government expenditure, have a unit root problem, therefore they are non-stationary in level terms but stationary in first difference terms as stated in Table 5.1, they are integrated of order 1, however, mortgage debt is integrated of order 2.

Alternatively, a Philips-Peron test is performed to determine the stationarity of variables. The null hypothesis states that the time series is not stationary. Therefore, if the test statistic is significant at the 5 percent level of significance, the null hypothesis is rejected, and it is concluded that the time series is stationary in levels, otherwise, it has to be differenced (Gujarati and Porter, 2009). Credit card debt is stationary in level terms, it is integrated of order zero. The variables GDP per capita, household debt, interest rates, and government expenditure, have a unit root problem, therefore they are non-stationary in level terms but stationary in first difference terms as stated in Table 5.1, they are integrated of order 1, however, mortgage debt is integrated of order 2.

A Kwiatkowski-Phillips-Scdmidt-Shin (KPSS) unit root test is performed to determine the absence of a unit root in mortgage debt. The null hypothesis states that mortgage debt is stationary. At the 1 percent level of significance, it is concluded that the mortgage debt is stationary after first difference.

Table 5.1: Unit root results

	Levels		1st Difference		2nd Difference		Order of integration
Variable	Drift	Drift and Trend	Drift	Drift and Trend	Drift	Drift and Trend	
ADF unit root results							
lngdppc	-3.349**	1.0745	-3.020**	-4.771***			I (1)
Hhd	-1.576	-1.034	-14.788***	-14.857***			I (1)

lncreditcrd	-4.516***	-0.703	-11.808***	-13.441***			I (1)
lnmortdebt	-2.138	-1.625	-1.994	-2.682	-4.666***	-4.632***	I (2)
Irt	-1.396	-1.825	-9.572***	-9.592***			I (1)
gvtexp	-1.562	-2.462	-15.759***	-15.723***			I (1)
Philips-Peron unit root results							
lngdppc	-6.486***	-0.989	-14.365***	19.181***			I (1)
Hhd	-1.554	-1.423	-14.392***	-14.448***			I (1)
lncreditcrd	-2.880*	-6.105***					I (0)
lnmortdebt	-3.302**	-0.616	-2.467	-2.747	-12.152***	-12.136***	I (2)
Irt	-1.230	-1.713	-10.364***	-10.510***			I (1)
gvtexp	-1.947	-2.854	-19.483***	-20.260***			I (1)
Kpss unit root test							
lnmortdebt	1.453	0.309	0.705***	0.084***			I (1)

* means p < 0.10; ** means p<0.05 and *** means p<0.01

5.2.2. Optimal debt thresholds

Table 5.2 presents results estimated from an OLS model to determine the thresholds of debt for household debt, credit card debt, and mortgage debt with respect to economic growth in South Africa. The results indicate that for household debt in South Africa, the estimated growth-maximising overall debt threshold is 70 percent of household disposable income (column (1)). The results indicate that for credit card debt in South Africa (column (2)), the estimated optimal threshold could be around ZAR72 403. The estimated optimal threshold for mortgage debt in

South Africa for credit card debt is ZAR 5 980 000 (column (3)). The regression in (3) was estimated in first difference since mortgage debt was found to be integrated of order two.

According to Cecchetti *et al*. (2011: 1), household debt beyond 85 percent of GDP undermines growth. Cecchetti *et al.* (2011: 1) state that high levels of household debt can cause bankruptcy and financial damage to both households and financial institutions when funds are lent out to people who are unable to service their debt and high debt levels can be unfavorable by hindering output growth and increasing volatility. Arcand *et al*. (2015: 112) claim that financial depth starts yielding negative returns when credit to the private sector reaches 82 percent of GDP. Asteriou and Spanos (2022: 140) found that household debt-to-GDP-ratios higher than 63 percent have a detrimental impact on economic growth. When the credit supply-to-GDP ratio is above 70 percent household debt is subject to increased pressure, and when the ratio is over 90 percent the pressure becomes even higher.

Table 5.2: Thresholds table

lngdppc			
Constant	8.951*** (1.426)	-985.74*** (59.918)	20.432***
Model 1Hhd	0.532*** (0.048)		
Model 1.1 Hhdsq	-0.0038*** (0.00040)		
Model 2 lncredcrd		181.573*** (11.364)	
Model 2.1 lncredcrdsq		-8.114*** (0.539)	
Model 3 lnmortdebt			0.104

			(0.222)
Model 3.1 lnmrtdbtsq			0.029*** (1.389)
R-squared	0.802	0.997	0.987
S.E. of regression	0.453	0.057	0.114
F-statistic	276.870***	21607.67***	5346.139***
Optimal threshold	70%	ZAR 72 403	ZAR 5 980 000

Standard errors in (); * means p < 0.10; ** means p<0.05 and *** means p<0.01.

5.2.3. VAR regression results

a. VAR order lag structure

The information criteria with the smallest number is used to determine the lag order. In Table 5.3 the AIC is selected with 6 lags for VAR regression results with household debt.

Table 5.3: VAR Lag order selection criteria for household debt

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1023.641	NA	76.528	15.689	15.777	15.725
1	-172.233	1637.823	0.0002	2.935	3.374*	3.113
2	-155.292	31.555	0.0002	2.920	3.711	3.242
3	-135.381	35.870	0.0002	2.861	4.002	3.325
4	-105.368	52.236	0.0002	2.647	4.139	3.253
5	-61.217	74.147	0.0001	2.217	4.061	2.966*

6	-42.209	30.760*	0.0001*	2.171*	4.366	3.063
7	-29.859	19.233	0.0001	2.227	4.773	3.261

*indicates lag order selected by the criterion; LR: sequential modified LR test statistic (each test at 5% level); FPE: Final prediction error; AIC: Akaike information criterion; SC: Schwarz information criterion; HQ: Hannan-Quinn information criterion

The information criteria with the smallest number is used to determine the lag order. In Table 5.4 the SC is selected with 1 lag VAR regression results with credit card debt. Table 5.4: VAR Lag order selection criteria for credit card debt

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-107.479	NA	6.45e-05	1.702	1.790	1.738
1	614.320	1388.499	1.35e-09	-9.074	-8.635*	-8.895
2	630.331	29.822	1.35e-09	-9.074	-8.284	-8.753
3	661.335	55.853	1.07e-09	-9.303	-8.162	-8.839
4	730.072	119.635	4.82e-10	-10.108	-8.616	-9.502
5	759.277	49.046*	3.96e-10*	-10.310*	-8.466	-9.560*
6	766.864	12.279	4.54e-10	-10.181	-7.986	-9.289
7	777.673	16.833	4.96e-10	-10.102	-7.556	-9.067

*indicates lag order selected by the criterion; LR: sequential modified LR test statistic (each test at 5% level); FPE: Final prediction error; AIC: Akaike information criterion; SC: Schwarz information criterion; HQ: Hannan-Quinn information criterion

The information criteria with the smallest number is used to determine the lag order. In Table 5.5 the SC is selected with 2 lags VAR regression results with mortgage debt.

Table 5.5: VAR Lag order selection criteria for mortgage debt

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-492.175	NA	0.023	7.575	7.663	7.611
1	465.364	1841.984	1.31e-08	-6.799	-6.361	-6.621
2	593.942	239.487	2.35e-09	-8.518	-7.728*	-8.197*
3	609.979	28.892	2.35e-09	-8.519	-7.377	-8.055
4	635.718	44.797	2.03e-09	-8.667	-7.175	-8.061
5	660.522	41.657	1.79e-09*	-8.802*	-6.958	-8.053
6	676.194	25.361	1.81e-09	-8.797	-6.602	-7.905
7	682.204	9.359	2.13e-09	-8.644	-6.098	-7.610

*indicates lag order selected by the criterion; LR: sequential modified LR test statistic (each test at 5% level); FPE: Final prediction error; AIC: Akaike information criterion; SC: Schwarz information criterion; HQ: Hannan-Quinn information criterion

b. Overall household debt and economic growth

Table 5.6 presents the VAR regression results. The coefficient signs for household debt are mixed. The first lag coefficient of the household debt variable is positive. This means that the variable conforms to the permanent income hypothesis and the life cycle hypothesis which state that the household debt has a positive effect on growth through the smoothing of current consumption. Therefore, household debt has a positive effect on growth in the short term. The 3rd lag is negative and significant at the 10 percent level of significance indicating that household debt has a negative effect on growth in the long term as stated by the Keynesian theory such as the neo-Kaleckian growth model. Hein (2012: 14) uses the neo-Kaleckian growth model and states that when household debt rises, purchasing power shifts from high-earning households with a low marginal propensity to consume to low-earning households with a high marginal propensity to consume. This initial boost in aggregate demand encourages consumption. However, over time, loan interest payments become a burden on growth and aggregate demand. According to Sparkes and Wood (2021: 611), household debt increased significantly during the Keynesian era. Several Conservative governments relaxed and

restricted household debt in line with Keynesian economic ideas and the growing demand for household debt.

The coefficient signs for government expenditure are mixed, but the 5th lag coefficient, which is negative, is significant at the 5 percent level of significance. Negative coefficients are much larger. This suggests that in the long-term government expenditure has a negative effect on growth as neoclassical theory states. The theory suggests that government spending should be limited, and it emphasizes the importance of market efficiency and warns about potential negative consequences of government intervention, such as crowding out and fiscal irresponsibility. Connolly and Li (2016: 393) investigate the relationship between government expenditure and growth and discover that government expenditure, specifically, social spending has a negative effect on economic growth. Christie (2014: 196) discovered that government expenditure over 33 percent of GDP has strong negative effects on growth. However, Pedrosa *et al*. (2023: 1) use the Super multiplier model and find that government expenditures may stabilize households' indebtedness.

The coefficient signs for interest rates are mixed. The negative coefficient signs state that a decrease in interest rates results in an increase in growth as the neoclassical theory states. Lower interest rates on loans, such as mortgages and car loans, can make borrowing more attractive and lead to increased consumer spending. This can stimulate demand for goods and services and support economic growth.

Table 5.6: VAR regression results with Household debt

Variable	lngdppc	Hhd	Gvtexp	Irt
lngdppc(-1)	0.729***	12.709	0.851	-4.339
	(0.145)	(11.040)	(2.983)	(3.730)
	[5.020]	[1.151]	[0.285]	[-1.163]
lngdppc(-2)	-0.203	-2.252	5.428	0.693
	(0.164)	(12.487)	(3.374)	(4.219)
	[-1.234]	[-0.180]	[1.609]	[0.164]
lngdppc(-3)	0.091	-3.932	-1.752	1.005

	(0.117)	(8.897)	(2.404)	(3.006)
	[0.774]	[-0.442]	[-0.729]	[0.334]
lngdppc(-4)	0.643***	6.588	1.076	1.922
	(0.113)	(8.554)	(2.311)	(2.890)
	[5.714]	[0.770]	[0.465]	[0.665]
lngdppc(-5)	-0.350**	-25.371**	-3.351	-0.085
	(0.152)	(11.569)	(3.126)	(3.909)
	[-2.301]	[-2.193]	[-1.072]	[-0.022]
lngdppc(-6)	0.074	11.896	-1.999	0.250
	(0.136)	(10.369)	(2.801)	(3.504)
	[0.539]	[1.147]	[-0.714]	[0.071]
Hhd(-1)	0.002	0.743***	-0.034	-0.006
	(0.002)	(0.129)	(0.035)	(0.044)
	[1.382]	[5.752]	[-0.961]	[-0.172]
Hhd(-2)	-0.001	0.164	0.020	0.011
	(0.002)	(0.158)	(0.043)	(0.053)
	[-0.425]	[1.041]	[0.479]	[0.197]
Hhd(-3)	-0.003*	0.086	0.025	0.019
	(0.002)	(0.145)	(0.039)	(0.049)
	[-1.758]	[0.595]	[0.639]	[0.408]
Hhd(-4)	0.005**	0.146	-0.0004	0.048
	(0.002)	(0.147)	(0.040)	(0.049)
	[2.591]	[0.995]	[-0.009]	[0.969]
Hhd(-5)	-0.002	-0.145	-0.025	0.008
	(0.002)	(0.155)	(0.042)	(0.052)
	[-0.874]	[-0.935]	[-0.603]	[0.154]

Hhd(-6)	-0.001 (0.002) [-0.818]	-0.067 (0.119) [-1.161]	0.027 (0.032) [0.834]	-0.059 (0.040) [-1.462]
Gvtexp(-1)	0.001 (0.006) [0.236]	-0.531 (0.457) [-1.161]	0.619** (0.124) [5.014]	-0.076 (0.155) [-0.492]
Gvtexp(-2)	-0.006 (0.007) [-0.778]	0.023 (0.551) [0.047]	0.279* (0.149) [1.878]	0.079 (0.186) [0.426]
Gvtexp(-3)	0.002 (0.007) [0.293]	0.286 (0.526) [0.543]	0.072 (0.142) [0.505]	0.035 (0.178) [0.195]
Gvtexp(-4)	0.013* (0.007) [1.889]	-0.209 (0.529) [-0.397]	-0.099 (0.143) [-0.692]	-0.023 (0.179) [-0.129]
Gvtexp(-5)	-0.018** (0.007) [-2.652]	0.060 (0.529) [0.113]	0.142 (0.143) [0.995]	-0.056 (0.179) [-0.313]
Gvtexp(-6)	0.008 (0.006) [1.325]	0.333 (0.446) [0.748]	-0.069 (0.121) [-0.574]	0.248 (0.151) [1.643]
Irt(-1)	-0.001 (0.004) [-0.401]	-0.073 (0.275) [-0.265]	0.027 (0.074) [0.361]	1.016 (0.093) [10.930]
Irt(-2)	0.003 (0.005)	-0.148 (0.397)	-0.081 (0.107)	-0.321 (0.134)

	[0.480]	[-0.374]	[-0.755]	[-2.394]
Irt(-3)	-0.006 (0.005) [-1.090]	-0.007 (0.408) [-0.016]	-0.049 (0.110) [-0.442]	0.032 (0.138) [0.231]
Irt(-4)	0.009 (0.005) [1.602]	0.041 (0.409) [0.101]	0.014 (0.110) [0.129]	0.098 (0.138) [0.707]
Irt(-5)	-0.006 (0.005) [-1.080]	-0.006 (0.402) [-0.014]	0.051 (0.109) [0.465]	-0.104 (0.136) [-0.769]
Irt(-6)	0.0006 (0.004) [0.147]	-0.185 (0.288) [-0.644]	0.092 (0.078) [1.184]	0.201 (0.097) [2.063]
Constant	0.516* (0.268) [1.928]	18.350 (20.366) [0.901]	-7.583 (5.502) [-1.378]	11.013 (6.881) [1.6000]
R-squared	0.999	0.975	0.879	0.970
Sum sq. residuals	0.064	370.999	27.080	42.355
S.E. equation	0.024	1.853	0.501	0.626
F-statistic	8316.350	177.906	32.975	143.124
Normality test	5811.945 {0.000}			
Heterosce test	494.605 {0.313}			

1730 Standard errors in (); t-statistics in []; p-values in {}

VAR stability test

The inverse roots of AR characteristics polynomial indicate that the estimated VAR is stable if all roots have modulus less than one and lie inside the unit circle. If the VAR is not stable, certain results (such as impulse response standard errors) are not valid.

Figure 5.3 indicates that the VAR for household and economic growth is stable because all roots have modulus less than one and lie inside the unit circle.

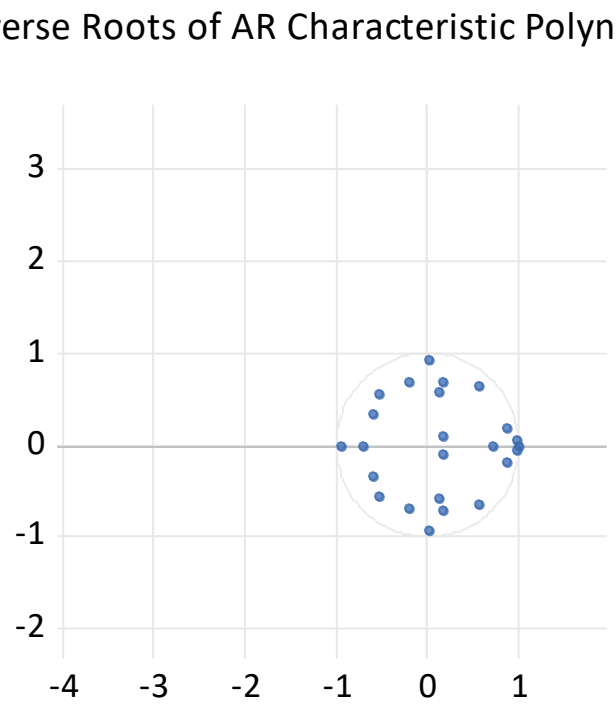

Figure 5.3: VAR stability for VAR regression results with Household debt

VAR Granger causality/ Block exogeneity test

The null hypothesis in Table 5.7 indicates that the independent variable does not granger cause the dependent variable. Therefore, it is concluded that at the 10 percent level of significance, household debt granger causes GDP per capita. However, government expenditure and interest rates do not granger causes GDP per capita. Overall, the variables significantly cause GDP per capita jointly, at the 1 percent level of significance. These results conform to the life cycle hypothesis and permanent income hypothesis which state that households borrow against their future income to smooth consumption.

Table 5.7: VAR Granger causality results with household debt

Dependent Variable: lnGDPpc		
Excluded	Chi-sq	Prob.
HHD	11.481	0.075
GVTEXP	8.878	0.181
IRT	3.116	0.794
ALL	**39.759**	**0.002**

Variance decomposition

In Table 5.8, a shock in GDP per capita explains 40.54 percent of its own variance in the short run. The influence increases to 49.81 percent in the long run. This indicates that GDP per capita has a strong influence on predicting itself from the short run to the long run.

The first period shows that a one standard deviation shock in household debt predicts 18.41 percent of the variance of the log of GDP per capita. The influence of household debt on growth begins to decrease from the short run to the long run with 8.67 percent in the 10th period. Therefore, the influence of household debt on growth is strong in the short run and begins to decrease in the long run. Tunc and Kilinc (2023: 88), investigate the impact of household debt service burden on economic growth and discover that an increase in the debt-to-GDP ratio improves the short-term economic position while depressing it in the medium to long term. Abd Samad *et al*. (2020: 547) explain over time, households become aware that their high debt-to-income ratio – which can be a result of either an interest rate shock or an income shock – makes it difficult to repay loans. As a result, they begin to reduce their spending, which eventually stunts economic growth. However, Serra (2023: 175) builds a neo-Kaleckian model in which households can borrow to either consume or invest in human capital and discovers that household debt is sustainable in the long run. This supports the findings of this paper.

A one standard deviation shock in government expenditure predicts 40.8 percent of the variance of the log of GDP per capita. Government expenditure decreased to 39.16 percent in the 10th period. Therefore, the influence of government expenditure on growth is strong in the short run and stays the same in the long run. According to Moore and Stockhammer (2018: 548) rising household indebtedness is due to the rolling back of the welfare state. The reduction of welfare

state spending and the age structure of the population drive household indebtedness, which results in a decrease in household consumption leading to a decrease in productivity and growth.

A one standard deviation shock in interest rates predicts 0.24 percent of the variance of the log of GDP per capita Therefore, interest rates have a small influence on growth in the short run but rise slightly in the long run.

Table 5.8: Variance decomposition of lnddppc with household debt

	lngdppc	Hhd	Gvtexp	Irt
1	40.542	18.414	40.799	0.244
2	45.644	15.487	38.680	0.189
3	46.015	14.362	39.447	0.176
4	43.119	14.329	41.596	0.956
5	49.229	13.132	36.815	0.824
6	50.194	11.111	37.992	0.704
7	49.726	10.192	39.343	0.739
8	48.011	9.849	40.080	2.0.61
9	49.384	9.448	38.915	2.253
10	49.805	8.668	39.164	2.363

Impulse response analysis

Figure 5.4 indicates that a one standard deviation shock in household debt will result in a decrease in GDP per capita by a maximum of 0.75 standard deviations. Therefore, a shock to household debt will have a negative response to GDP per capita in the long run. Mian *et al*. (2017: 1765) investigate the relationship between household debt and GDP ratio. They discover that the response of GDP to a shock to household debt boosts GDP in the short run, but it is short-lived as GDP eventually declines in the long run.

A one standard deviation shock given to government expenditure will result in a decrease in GDP per capita by a maximum of 0.75 standard deviations. Therefore, a shock to government expenditure will have a negative response to GDP per capita in the long run. Connolly and Li (2016) and Christie (2014) discovered that government expenditure has a negative effect on economic growth.

A one standard deviation shock given to interest rates will result in a slight decrease in GDP per capita by a maximum of 0.75 standard deviations. Therefore, a shock to interest rates will have a negative response to GDP per capita in the long run.

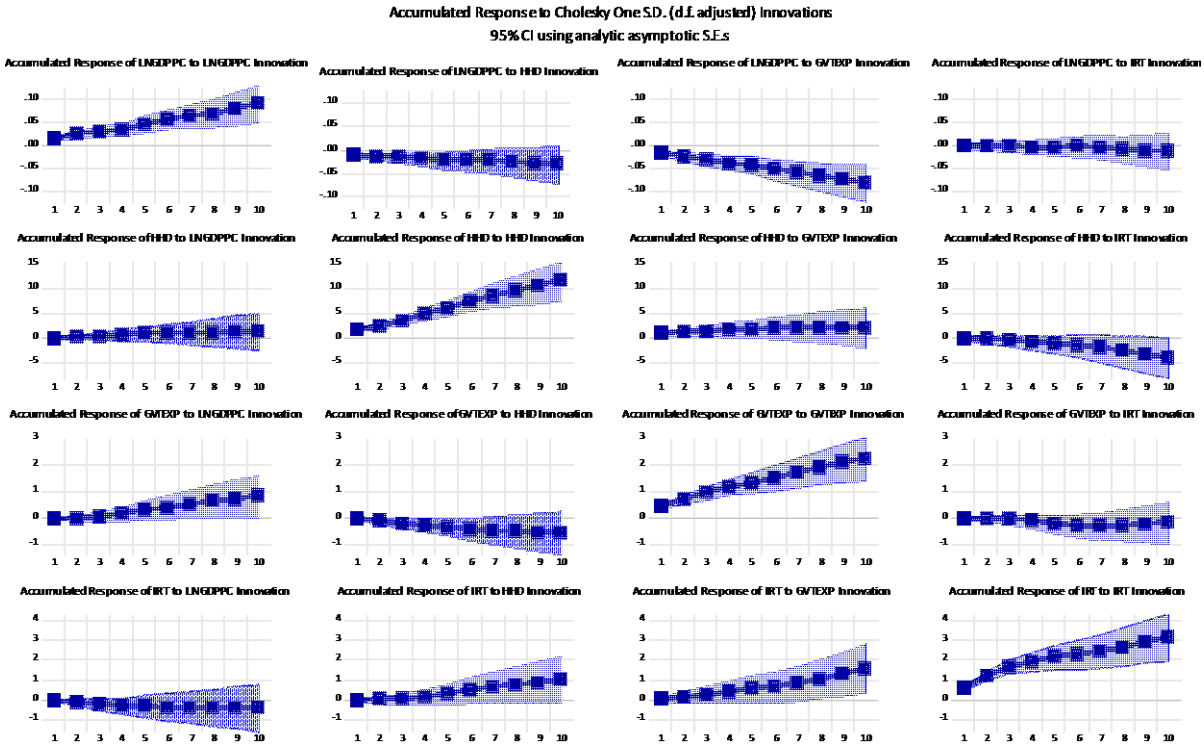

Figure 5.4: VAR regression results with Household debt

b. Credit card debt and economic growth

Table 5.9 presents the VAR regression results. A 1 percent increase in credit card debt, increases economic growth by 0.88 percent, other things being equal. The coefficient sign for credit card debt is positive and significant at the 1 percent level of significance. This suggests that credit card debt has a positive effect on economic growth. Ekici and Dunn (2010: 455) investigate the relationship between credit card debt and consumption using household-level data based on the permanent income hypothesis and life cycle hypothesis. They found that increasing credit card debt used to finance consumption is typically viewed as a positive economic

stimulus. However, high amounts of debt would eventually hinder the productivity of the economy. Dutt (2006: 339) uses a Steindlian model of growth and shows that borrowing by consumers can improve growth in the short run by increasing consumer demand. However, in the longer run the effects of increasing consumer borrowing are ambiguous because, by increasing consumer debt, it redistributes income towards the wealthier who have a higher propensity to save, thereby possibly inhibiting aggregate demand and growth despite the borrowing-induced expansion.

The coefficient sign for government expenditure is positive. This suggests that in the short run government expenditure has a positive effect on growth. This is in line with the Keynesian theory which states that if government spending increases, all else held constant, output will increase. Yasin (2011: 65) claims that government spending has a positive impact on economic growth when it is on private investment spending and capital formation. However, the impact turns negative in the long run. Aydin *et al*. (2016: 177) explain that government spending below the threshold has a significant and negative impact on economic growth while spending above the threshold has a significant and positive impact on growth revealing that the level of government spending is important for economic expansion.

The coefficient sign for interest rates is negative and significant at the 5 percent level of significance. This suggests that the short-term interest rates have a positive effect on growth as neoclassical theory states. Neoclassical theory states that rising interest rates increase the cost of borrowing for investment and consumption. This reduces aggregate demand by reducing investment and credit-financed consumption leading to a decrease in economic growth. Debelle (2004: 58) claims that if there is a downward shift in the interest rate there is an incentive for existing borrowers to renew their mortgages at the lower interest rate, thereby boosting the amount of household income available for other purposes, most notably consumption, resulting in an increase in productivity in the economy. Moore and Stockhammer (2018: 553) state the short-term interest rate drives household indebtedness because the low short-term interbank interest rate means cheap borrowing for banks, which is passed onto households in the form of cheap borrowing, resulting in a temporary boost in GDP.

Table 5.9: VAR regression results with credit card debt

	lngdppc	lncreditcrd	Gvtexp	Irt

lngdppc(-1)	0.896***	0.018***	-0.343	-1.480
	(0.039)	(0.005)	(0.670)	(0.803)
	[22.710]	[3.529]	[-0.512]	[-1.843]
lncreditcrd(-1)	0.876***	0.801***	5.737	10.637
	(0.408)	(0.054)	(6.942)	(8.314)
	[2.144]	[14.868]	[0.827]	[1.279]
Gvtexp(-1)	0.0004	0.0008*	0.825***	0.103
	(0.003)	(0.0004)	(0.057)	(0.068)
	[0.108]	[1.903]	[14.427]	[1.502]
Irt(-1)	-0.004**	-0.0001	0.021	0.856***
	(0.002)	(0.0003)	(0.034)	(0.040)
	[-2.249]	[0.476]	[0.608]	[21.173]
Constant	-6.382**	1.600***	-48.444	-72.940
	(3.241)	(0.427)	(55.097)	(65.993)
	[-1.969]	[3.745]	[-0.879]	[-1.105]
R-squared	0.999	0.998	0.837	0.964
Sum sq. residuals	0.130	0.002	37.556	53.879
S.E. equation	0.031	0.004	0.531	0.636
F-statistic	35165.90	1846.87	170.404	895.472
Normality test	890.134			
	{0.000}			
Heterosce test	153.392			
	{0.000}			
Serial corr test				
Lag 1	1.989			

	{0.016}
Lag 2	2.259
	{0.004}

Standard errors in (); t-statistics in []; p-values in {}

VAR stability test

Figure 5.5 indicates that the VAR for credit card debt and economic growth is stable because all roots have modulus less than one and lie inside the unit circle. The results suffer from serial correlation.

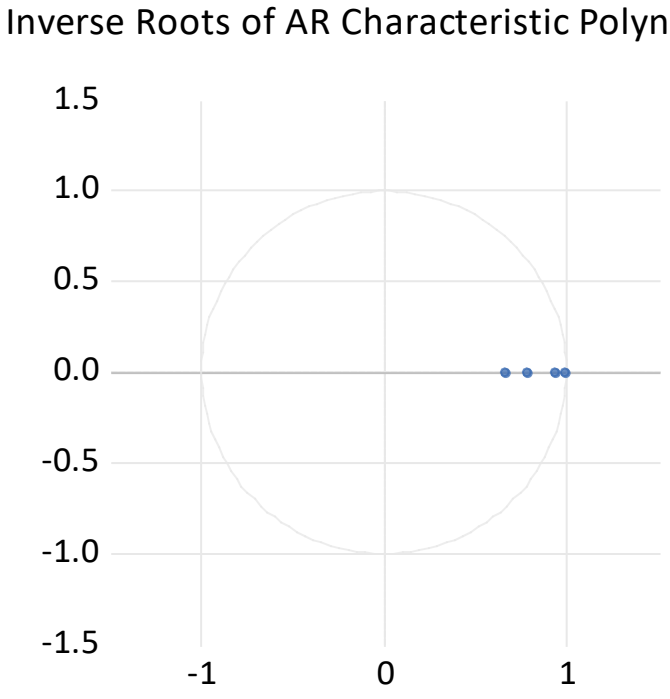

Figure 5.5: AR roots graph for VAR regression results with credit card debt

VAR Granger causality/ Block exogeneity test

The null hypothesis in Table 5.10 indicates that the independent variable does not granger cause the dependent variable. Therefore, it is concluded that at the 5 percent level of significance credit card debt and interest rates granger cause GDP per capita. However, government expenditure does not granger causes GDP per capita. Overall, all the variables are jointly significant, hence, they do granger causes GDP per capita at the 5 percent level of significance.

Based on the life cycle theory and permanent income hypothesis credit card debt impacts growth as it is used to finance consumption. According to Cynamon and Fazzari (2013), low stable interest rates encourage borrowing for consumption purposes.

Table 5.10: VAR Granger causality results with credit card debt

Dependent Variable: lnGDPpc		
Excluded	Chi-sq	Prob.
LNCREDCRD	4.598	0.032
GVTEXP	0.012	0.914
IRT	5.056	0.025
ALL	**8.364**	**0.039**

Variance decomposition

In Table 5.11, a shock in GDP per capita explains 70.07 percent of its own variance in the short run. The influence decreases to 61.22 percent in the long run. This indicates that GDP per capita has a strong influence on predicting itself in the short run and it starts to decrease in the long run.

A one standard deviation shock in credit card debt predicts 0.48 percent of the variance of the log of GDP per capita. The influence of credit card debt on growth begins to increase from the short run to the long run with 12.42 percent in the 10th period. Therefore, the influence of credit card debt on growth is weak in the short run but is stronger in the long run. According to Lin *et al.* (2019: 546), credit card use has grown rapidly in developing countries. This is because credit cards come with several advantages for customers, such as having an accurate record of purchases, less need to carry cash, and proof of creditworthiness in the past. Therefore, credit card debt increases in the long run.

In the first period, a one standard deviation shock in government expenditure predicts 27.93 percent of the variance of the log of GDP per capita. Government expenditure gradually decreases to 23.52 percent in the 10th period. Therefore, the influence of government expenditure on growth is strong in the short run but gradually decreases in the long run.

A one standard deviation shock in interest rates predicts 1.52 percent of the variance of the log of GDP per capita in the first period and gradually increases to 2.84 percent in the 10th period. Therefore, interest rates have a small influence on growth in the short run but rise slightly in the long run.

Table 5.11: Variance decomposition of lnddppc with credit card debt

	lngdppc	lncreditcrd	Gvtexp	Irt
1	70.073	0.475	27.933	1.519
2	69.341	1.969	27.793	0.897
3	68.228	3.766	27.326	0.679
4	66.994	5.561	26.711	0.733
5	65.781	7.204	26.059	0.956
6	64.654	8.637	25.430	1.278
7	63.638	9.856	24.854	1.652
8	62.733	10.877	24.342	2.048
9	61.931	11.724	23.898	2.448
10	61.219	12.423	23.518	2.840

Impulse response analysis

In Figure 5.6 a one standard deviation shock given to credit card debt will result in an increase in GDP per capita by a maximum of 0.75 standard deviations. Therefore, a shock to credit card debt will have a positive response to GDP per capita in the short run and long run. Adewale (2014) examined data from 2007-2012 and established that there is a strong relationship between increasing credit consumption and economic growth in South Africa. The PIH and LCH were used to explain the relationship between household debt and consumption. Ekici and Dunn (2010: 455) find that increasing credit card debt used to finance consumption is typically viewed as a positive economic stimulus, even so, high debt levels can restrain future spending, dampening growth. These results agree with economic theory.

A one standard deviation shock or impulse given to government expenditure will result in a decrease in GDP per capita by a maximum of 0.75 standard deviations. Therefore, a shock to government expenditure will have a negative response to GDP per capita in the long run. Moore and Stockhammer (2018: 552) argue that when not funded by the state, household spending on housing, health, education, and transportation comes into the basic consumption basket of households and is hence a component of households' battle to sustain consumption standards. This results in a decrease in productivity and growth as households have less disposable income.

A one standard deviation shock given to interest rates will result In a slight decrease in GDP per capita by a maximum of 0.75 standard deviations. Therefore, a shock to interest rates will have a negative response to GDP per capita in the long run.

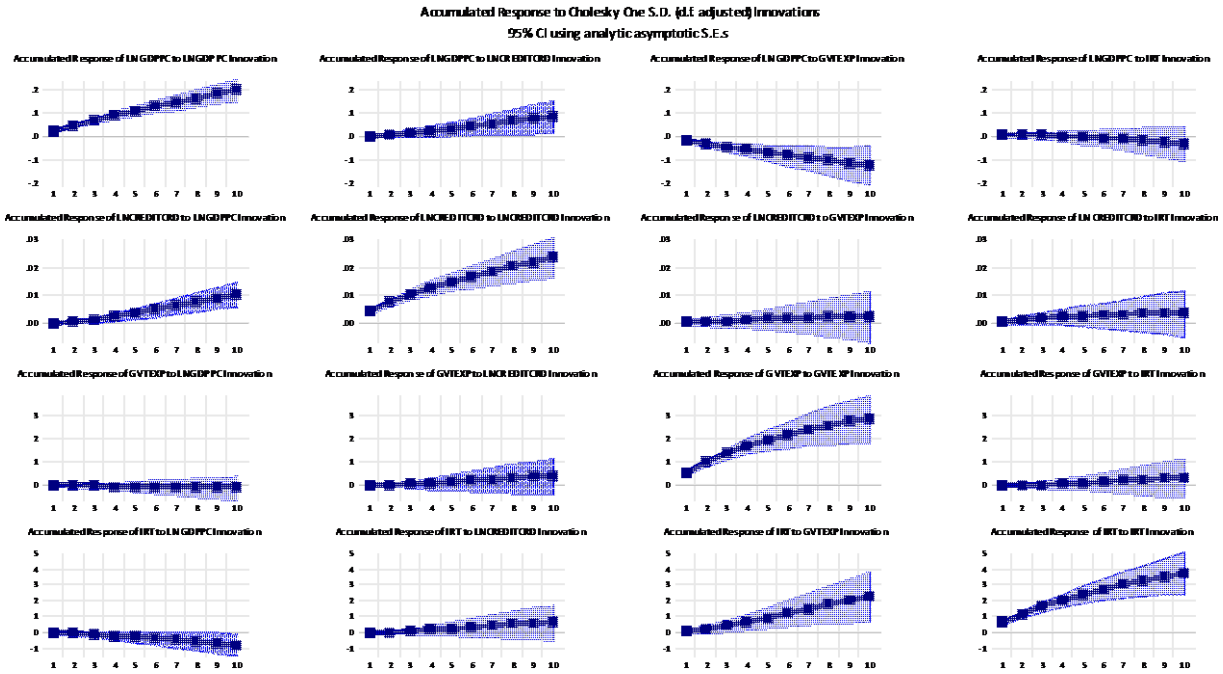

Figure 5.6: VAR regression results with credit card debt

c. Mortgage debt and economic growth

Table 5.12 presents the VAR regression results. The coefficient sign for mortgage debt is positive in the short run but is not significant. Ajisafe and Okunade (2020: 40) claim that when households borrow to invest in real estate or start businesses, it can contribute to economic growth by creating jobs, increasing productivity, and expanding the overall economy. Authors such as Moore and Stockhammer (2018), Stockhammer and Wildauer (2017: 2), and Wood and

Stockhammer (2023) discover that house prices fuel the build-up of household debt because they loosen credit restrictions through the collateral impact and increase household indebtedness through the wealth effect. Because of their increasing wealth, households may not be credit-constrained but instead boost their spending. This can be done by borrowing through mortgage equity withdrawals. Hence, they find that house prices are a major determinant of household debt, and household debt contributes to economic growth. However, Bezemer *et al*. (2016) and Sassi and Gasmi (2014) discovered that a high mortgage-to-GDP ratio might hinder rather than accelerate growth which has little impact on economic expansion.

The coefficient signs of government expenditure are negative. This means that the variable does not conform to the Keynesian theory which states that government spending stimulates economic growth, especially during economic downturns. However, the negative sign could be a result of government expenditure being financed by accumulating excessive debt as it leads to concerns about fiscal sustainability, higher interest rates, and crowding out of private investments.

The coefficient signs for interest rates are negative. This suggests that low-interest rates enable consumers to spend at high rates relative to their income. Mutezo (2014: 75) states that the reduction in interest rates both in nominal and real terms, contributes to a significant easing of liquidity constraints on households thereby increasing consumption and productivity.

Table 5.12: Toda-Yamamoto VAR regression results with mortgage debt

	lngdppc	lnmortdebt	Gvtexp	Irt
lngdppc(-1)	0.424***	-0.051**	1.118	-4.349*
	(0.097)	(0.019)	(1.882)	(2.286)
	[4.371]	[-2.638]	[0.594]	[-1.902]
lngdppc(-2)	-0.026	-0.044**	1.589	1.230
	(0.098)	(0.019)	(1.893)	(2.299)
	[-0.271]	[2.309]	[0.840]	[0.535]
lnmortdebt (-1)	0.228	1.788***	-8.930	-20.481**
	(0.406)	(0.080)	(7.870)	(9.561)

	[0.563]	[22.321]	[-1.135]	[-2.142]
lnmortdebt (-2)	-0.231 (0.588) [-0.392]	-0.755 (0.116) [-6.503]	7.502 (11.405) [0.658]	27.677** (13.855) [1.998]
Gvtexp(-1)	-0.003 (0.005) [-0.487]	-0.003** (0.001) [-2.459]	0.589*** (0.106) [5.579]	-0.051 (0.128) [-0.395]
Gvtexp(-2)	-0.006 (0.006) [-1.081]	0.002 (0.002) [1.505]	0.271** (0.117) [2.321]	0.046 (0.142) [0.326]
Irt(-1)	-0.0008 (0.004) [-0.218]	-0.0007 (0.0007) [-0.957]	0.027 (0.072) [0.381]	1.050 (0.088) [11.982]
Irt(-2)	-0.001 (0.004) [-0.252]	-6.873 (0.0008) [-0.083]	-0.114 (0.082) [-1.398]	-0.320*** (0.099) [-3.234]
Constant	1.400*** (0.430) [3.260]	-0.201** (0.085) -2.373	-12.121 (8.332) [-1.455]	12.723 (10.123) [1.257]
lngdppc(-4)	0.535 (0.082) [6.539]	0.024 (0.016) [1.496]	-1.638 (1.587) [-1.032]	2.764 (1.928) [1.434]
lnmortbebt(-4)	0.037 (0.207) [0.178]	-0.053 (0.041) [-1.293]	0.462 (4.009) [0.115]	-7.450 (4.870) [-1.530]
Gvtexp(-4)	0.012	1.212	-0.042	0.128

	(0.005) [2.496]	(0.0009) [0.013]	(0.090) [-0.464]	(0.109)
Irt(-4)	-0.0006 (0.003) [-0.231]	-0.0004 (0.0005) [-0.653]	0.041 (0.053) [0.772]	0.109 (0.064) [1.704]
R-squared	0.999	0.999	0.861	0.968
Sum sq. residuals	0.084	0.003	31.541	46.699
S.E. equation	0.026	0.005	0.509	0.619
F-statistic	15190.75	540107.6	62.905	303.374
Normality test	2327.716 {0.000}			
Heterosce test	357.393 {0.000}			

Standard errors in (); t-statistics in []; p-values in {}

VAR stability test

Figure 5.7 indicates that the VAR for mortgage debt and economic growth is non-stationary because some roots have modulus greater than one and lie outside the unit circle. This could be due to the Kwiatkowski-Phillips-Scdmidt-Shin (KPSS) unit root test performed to determine the absence of a unit root in mortgage debt and the Toda-Yamamoto VAR is an overfitted model. Hence, the results for this regression are unstable so they might be misleading.

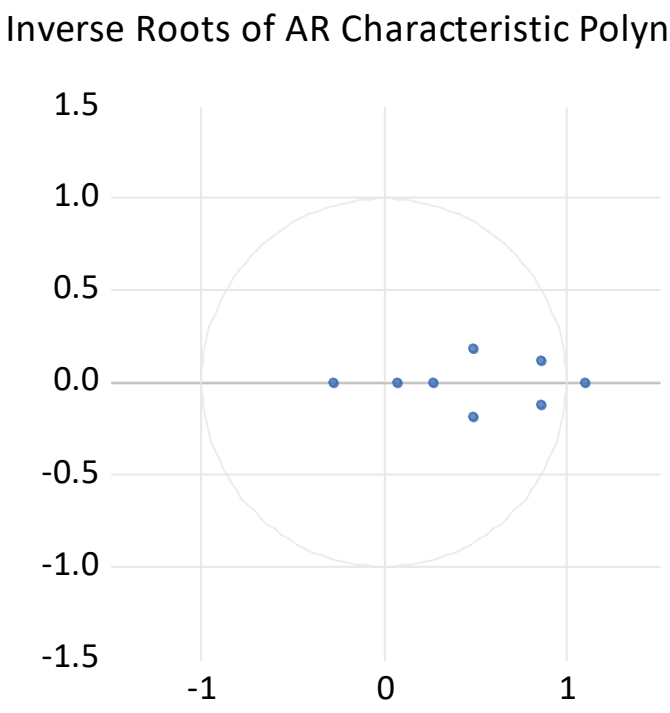

Figure 5.7: AR roots graph for VAR regression results with mortgage debt

VAR Granger causality/ Block exogeneity test

The null hypothesis in Table 5.13 indicates that the independent variable does not granger cause the dependent variable. Therefore, it is concluded that mortgage debt, government expenditure and interest rates do not granger causes GDP per capita. Overall, all the variables are not significant, hence, they do not granger causes GDP per capita.

Table 5.13: VAR Granger causality results with mortgage debt

Dependent Variable: lnGDPpc		
Excluded	Chi-sq	Prob.
LNMORTDEBT	1,082	0.583
GVTEXP	03.199	0.202
IRT	0.501	0.778
ALL	**9.162**	**0.165**

Variance decomposition

In Table 5.14, a shock in GDP per capita explains 67.48 percent of its own variance in the short run. The influence decreases to 51.33 percent in the long run. This indicates that GDP per capita has a strong influence on predicting itself in the short run but it decreases in the long run.

A one standard deviation shock in mortgage debt predicts 0.02 percent of the variance of the log of GDP per capita. The influence of mortgage debt on growth begins to increase from the short run to the long run with 5.17 percent in the 10th period. Therefore, the influence of mortgage debt on growth is weak in the short run and begins to increase in the long run. According to Bezemer *et al*. (2016: 652) a high mortgage-to-GDP ratio might hinder rather than accelerate growth and household credit - the majority of which is in the form of mortgages - has little impact on economic expansion. Sassi and Gasmi (2014: 227) explain that the loan-to-value ratio for mortgages, which measures household credit, has a negative correlation with the rise of the GDP per capita. Based on the life cycle and permanent income hypothesis, Crook (2001: 83) discovered that households headed by an individual over age 55 had a reduced demand for total debt (defined as mortgages, home equity loans, credit cards, and installment debt).

A one standard deviation shock in government expenditure predicts 31.77 percent of the variance of the log of GDP per capita. Government expenditure gradually increased to 42.19 percent in the 10th period. Therefore, the influence of government expenditure on growth is strong in the short run and gradually increases in the long run.

A one standard deviation shock in interest rates predicts 0.73 percent of the variance of the log of GDP per capita in the first period and gradually increases to 1.29 percent in the 10th period. Therefore, interest rates have a small influence on growth in the short run but rise slightly in the long run.

Table 5.14: Variance decomposition of lnddppc with mortgage debt

	lngdppc	lnmortdebt	Gvtexp	Irt
1	67.481	0.020	31.765	0.734
2	65.746	0.141	33.486	0.627

3	61.843	0.404	36.997	0.755
4	58.968	0.876	39.056	1.099
5	56.759	1.526	40.452	1.263
6	55.139	2.254	41.338	1.268
7	53.906	2.980	41.875	1.238
8	52.924	3.686	42.155	1.235
9	52.092	4.398	42.249	1.261
10	51.333	5.174	42.199	1.294

Impulse response analysis

In Figure 5.8 a one standard deviation shock given to mortgage debt will result in an increase in GDP per capita by a maximum of 0.75 standard deviations. Therefore, a shock to mortgage debt will have a positive response to GDP per capita in the long run. Cox and Jappelli (1993) investigated the effect of borrowing constraints on consumer debt based on the life cycle hypothesis and found that the desire for debt increased until the household head reached the mid-thirties and then it declined. Prinsloo (2002) states that, in most circumstances, the size of the loan is often determined by the borrower's annual income and the value of the collateral. Although shorter repayment terms can be agreed upon, the loan is typically repaid over a 20–30-year period. Hence, mortgages will have a positive effect on growth in the long run if annual income increases simultaneously.

A one standard deviation shock given to government expenditure will result in a decrease in GDP per capita by a maximum of 0.75 standard deviations. Therefore, a shock to government expenditure will have a negative response to GDP per capita in the long run.

A one standard deviation shock given to interest rates will result in an unchanged response in GDP per capita by a maximum of 0.75 standard deviations. Therefore, a shock to interest rates will have a no response to GDP per capita in the short and long run.

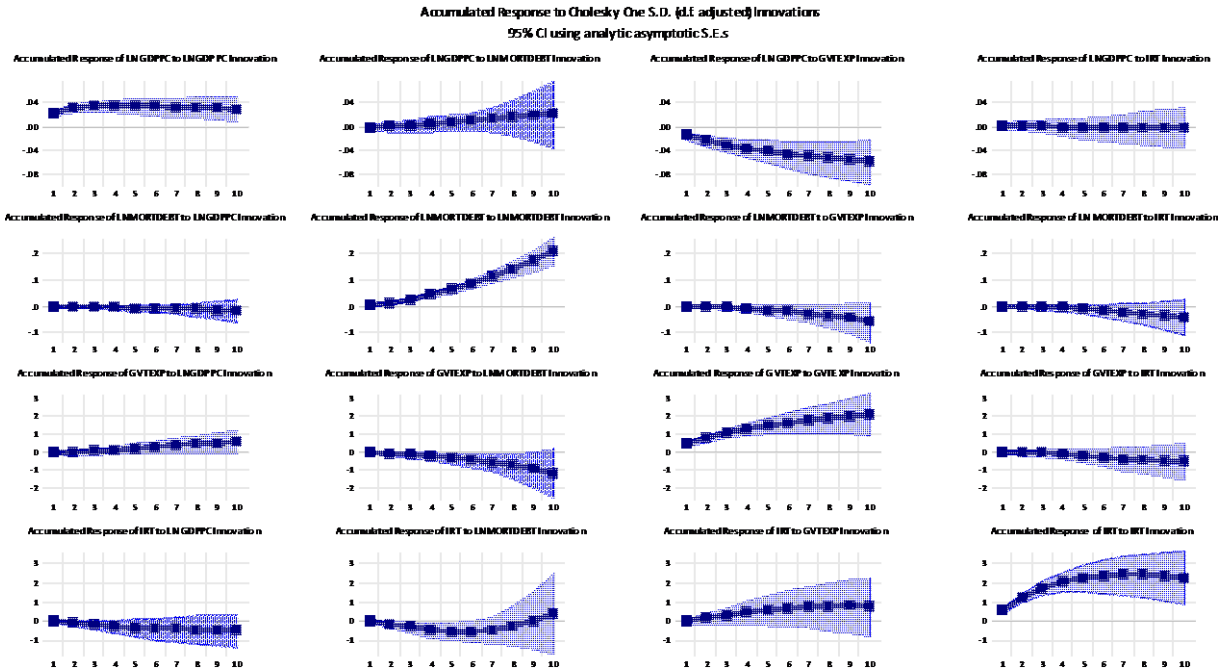

Figure 5.8: VAR regression results with mortgage debt

5.3. Discussions and conclusions

Household debt has risen in several countries over the last few decades. Increased private-sector credit promotes economic growth over the long run. However, over time, high household debt can result in substantial debt overhang problems when a nation experiences strong negative shocks suddenly. Although household debt has a short-term positive impact on GDP and consumption, it is likely to have a detrimental long-term impact on growth.

Overall, the results show that household debt has a positive yet weak impact on economic growth in South Africa. The VAR results with household debt indicate that household debt stimulates growth in the short run but hinders productivity and growth in the long run. The variance decomposition results indicate that the influence of household debt on growth begins to decrease from the short run to the long run. Therefore, the results are in line with authors such as Abd Samad *et al.* (2020), Hein (2012), Mian *et al.* (2017) Tunc and Kilinc (2023), found that household debt boosts GDP in the short run, but it is short-lived as GDP eventually declines in the long run.

The different types of household debt represented by credit card debt and mortgage debt have different impacts on economic growth in South Africa. Credit card debt has a strong positive impact on economic growth. The VAR results with credit card debt indicate that credit card

debt has a positive effect on growth from the short run to the long run. The variance decomposition results indicate that credit card debt has a small positive influence on growth in the short run and the influence gets stronger in the long run. Therefore, the results are in line with authors such as Adewale (2014) Dutt (2006), and Ekici and Dunn (2010) who found that increasing credit consumption can improve growth in the short run by increasing consumer demand and credit card debt used to finance consumption is typically viewed as a positive economic stimulus even so, high debt levels can restrain future spending, dampening growth.

Mortgage debt has a weak positive impact on economic growth the influence increases in the long run. The VAR results with mortgage debt indicate that mortgage debt has a short-term positive effect on growth. The variance decomposition results show that the influence of mortgage debt on growth is weak from the short run to the long run. Therefore, the results are in line with authors such as Ajisafe and Okunade (2020), Prinsloo (2002), and Wood and Stockhammer (2023) who found that if households borrow to invest in real estate or start businesses, it can contribute to economic growth by creating jobs, increasing productivity, and expanding the overall economy. However, Bezemer *et al*. (2016) and Sassi and Gasmi (2014) discovered that a high mortgage-to-GDP ratio might hinder rather than accelerate growth which has little impact on economic expansion.

The conclusion from the results is that household debt has a positive effect on economic growth in South Africa in the short run but is negative in the long run.

CHAPTER 6: CONCLUSION

6.1. Introduction

The main aim of this chapter is to provide a summary of the results and the policy recommendations of the results of this study. This chapter proceeds as follows: Section 6.2 provides a summary of the results, 6.3 discusses recommendations and 6.4 highlights an overall conclusion.

6.2. Summary of results

6.2.1. Household debt and growth

The overall objective is to determine the effect of aggregate household debt on economic growth in South Africa. The results show that household debt has a positive yet weak impact on economic growth in South Africa. The VAR results with household debt indicate that household debt stimulates growth in the short run but hinders productivity and growth in the long run. The variance decomposition results indicate that the influence of household debt on growth begins to decrease from the short run to the long run. Therefore, the results are in line with authors such as Abd Samad *et al.* (2020) and Lombardi *et al*. (2017) who state that growth has a short-term positive effect on growth but is detrimental to growth in the long run.

6.2.2 Credit card debt and growth

The objective is to determine the effect of credit card debt on economic growth in South Africa. The different types of household debt represented by credit card debt and mortgage debt have different impacts on economic growth in South Africa. Credit card debt has a strong positive impact on economic growth. The VAR results with credit card debt indicate that credit card debt has a positive effect on growth from the short run to the long run. The variance decomposition results indicate that credit card debt has a small positive influence on growth in the short run and the influence gets stronger in the long run.

6.2.2 Mortgage debt and growth

The objective is to determine the effect of mortgage debt on economic growth in South Africa. Mortgage debt has a weak positive impact on economic growth the influence increases in the long run. The VAR results with mortgage debt indicate that mortgage debt has a short-term

positive effect on growth. The variance decomposition results show that the influence of mortgage debt on growth is weak from the short run to the long run.

6.3. Recommendations

South Africa must desist from following a finance led growth model given that the findings show that household debt has no long run effect on growth in the long term. The results indicate a significant relationship between household debt and growth. Therefore, it is recommended that policymakers monitor the household debt levels in South Africa. Continuously monitoring the trends of household debt in South Africa is a step in the right direction for governments. Forecasting household debt for South Africa is of importance to policymakers. It becomes challenging for policymakers to develop feasible policies without appropriate and reliable forecasts. With accurate projections generated, it may be simple for the relevant authorities to design and devise effective plans to address household debt in the country, and with the use of an appropriate modeling approach, forecasting accuracy of household debt in the country may be enhanced. First, the South African Reserve Bank (SARB) can adopt interest rate policies that balance the short-term stimulus of low-interest rates with a long-term view. By carefully managing interest rates, the government can encourage borrowing for productive investments while discouraging excessive consumer debt. Second, implementing measures to enhance financial literacy and consumer protection can be crucial. This can include regulations that prevent predatory lending practices and encourage responsible borrowing. Moreover, educational programs can empower individuals to make informed financial decisions, reducing the risk of excessive debt accumulation. Third, the government can design policies to specifically encourage the use of household debt for productive investments, such as small business development, education, or housing. This can contribute to long-term economic growth and development. Fourth, acknowledging the varied impact of different types of debt, the government can consider implementing policies that differentiate between credit card debt and mortgage debt. For instance, measures to encourage responsible mortgage borrowing, which has a weak positive impact in the long run, might be prioritized over credit card debt. Fifth, redirecting household debt towards investments in infrastructure and development projects can provide a boost to both short-term and long-term economic growth. This could be achieved through public-private partnerships or government-led initiatives and lastly, establishing a robust system for monitoring and evaluating the impact of household debt on

economic growth is essential. Regular assessments can help the government adjust its policies based on evolving economic conditions and emerging trends.

6.4. Conclusion

To conclude, household debt has a positive yet weak impact on economic growth in South Africa. Household debt stimulates growth in the short run but hinders productivity and growth in the long run. Credit card debt has a positive effect on growth from the short run to the long run. Mortgage debt has a weak positive impact on economic growth the influence increases in the long run. This study implies that it is important to strike a balance between encouraging economic activity through household debt and preventing the negative consequences associated with excessive debt levels. This requires a comprehensive and dynamic approach that considers both short-term and long-term economic goals.

REFERNCE LIST

Abd Samad, K., Dali, N.R.S.B.M. and Daud, S.N.M., 2020. Leading Factors Of Household Debt.

Abd Samad, K., Daud, S.N.M., Shah, N.R. and Dali, M., 2020. Household debt and economic growth. *International Journal of Academic Research in Business and Social Sciences*, *10*(4).

Abd Samad, K., Mohd Daud, S.N. and Mohd Dali, N.R.S., 2020. Determinants of household debt in emerging economies: A macro panel analysis. *Cogent Business & Management*, *7*(1), p.1831765.

Adewale, A.R., 2014. Financial Regulation, Credit Consumption And Economic Growth An Analysis Of The National Credit Act In South Africa. *Journal of Applied Business Research (JABR)*, *30*(2), pp.367-378.

Ajisafe, R.A. and Okunade, S.O., 2020. Finance-led-growth hypothesis and domestic investment in Nigeria. *Journal of Emerging Trends in Economics and Management Sciences*, *11*(2), pp.40-52.

Alharahsheh, H.H. and Pius, A., 2020. A review of key paradigms: Positivism VS interpretivism. *Global Academic Journal of Humanities and Social Sciences*, *2*(3), pp.39-43.

Alter, A., Feng, A.X. and Valckx, N., 2018. *Understanding the macro-financial effects of household debt: A global perspective*. International Monetary Fund.

Arcand, J.L., Berkes, E. and Panizza, U., 2015. Too much finance?. *Journal of Economic Growth*, *20*(2), pp.105-148.

Ardington, C., Lam, D., Leibbrandt, M. and Levinsohn, J., 2004. Savings, insurance and debt over the post-apartheid period: A review of recent research.

Arioğlu, E. and Koray, T.U.A.N., 2011. Test of the absolute income hypothesis in USA and Europe. *Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, *20*(2), pp.299-316.

Aron, J. and Muellbauer, J., 2000. Financial liberalisation, consumption and debt in South Africa.

Aron, J. and Muellbauer, J., 2000. Personal and corporate saving in South Africa. *The World Bank Economic Review*, *14*(3), pp.509-544.

Aron, J. and Muellbauer, J., 2013. Wealth, credit conditions, and consumption: Evidence from South Africa. *Review of Income and Wealth*, *59*, pp.S161-S196.

Asteriou, D. and Spanos, K., 2022. Credit to private sector, household debt and economic growth: An empirical investigation of EU countries. *Economics and Business Letters*, *11*(4), pp.134-142.

Avritzer, J.D., 2020. *Three Essays on Growth, Income Distribution and Household Debt* (Doctoral dissertation, The New School).

Avritzer, J.D. and Brochier, L., 2022. *Household credit-financed consumption and the debt service ratio: tackling endogenous autonomous demand in the Supermultiplier model* (No. PKWP2219).

Aydin, C., Akinci, M. and Yilmaz, Ö., 2016. The analysis of visible hand of government: The threshold effect of government spending on economic growth. *International Journal of Trade, Economics and Finance*, *7*(5), p.170.

Azzouza, A., 2021. The effect of financial liberalization on Malaysian economic growth. *Theoretical and Applied Economics. Volume XXVIII (2021), No. 2(627), Summer,* pp. 19-32.

Baek, E. and Hong, G.S., 2004. Effects of family life-cycle stages on consumer debts. *Journal of Family and Economic Issues*, *25*, pp.359-385.

Barba, A. and Pivetti, M., 2009. Rising household debt: Its causes and macroeconomic implications—a long-period analysis. *Cambridge journal of economics*, *33*(1), pp.113-137.

Bartscher, A.K., Kuhn, M., Schularick, M. and Steins, U., 2020. Modigliani meets Minsky: Inequality, debt, and financial fragility in America, 1950-2016.

Benitez, J., Henseler, J. and Roldán Salgueiro, J.L., 2016. How to address endogeneity in partial least squares path modeling.

Bezemer, D., Grydaki, M. and Zhang, L., 2016. More mortgages, lower growth?. *Economic Inquiry*, *54*(1), pp.652-674.

Bhutta, N., 2015. The ins and outs of mortgage debt during the housing boom and bust. *Journal of Monetary Economics*, *76*, pp.284-298.

Bond, P., 2012. Debt, uneven development and capitalist crisis in South Africa: The first 200 years. *Repoliticizing Debt, Queen's University Development Studies, Kingston, Canada*.

Brochier, L. and Freitas, F., 2019. Debt and demand regimes in canonical growth models: a comparison of neo-Kaleckian and Supermultiplier models.

Brochier, L. and Freitas, F., 2023. Debt and demand regimes in simplified growth models: a comparison of neo-Kaleckian and Supermultiplier models. *Cambridge Journal of Economics*, p.bead033.

Brown, M., Stein, S. and Zafar, B., 2015. The impact of housing markets on consumer debt: Credit report evidence from 1999 to 2012. *Journal of money, credit and Banking*, *47*(S1), pp.175-213.

Business Tech. (2022) 'More South Africans are using credit to make it to the end of the month', *Business Tech*, 13th April. Available at: https://businesstech.co.za/news/finance/577322/more-south-africans-are-using-credit-to-make-it-to-the-end-of-the-month/#:~:text=Buying%20necessities,bills%20and%20monthly%20fees%2C%20respectively. (Accessed: 05th April 2023).

Canakci, M., 2021. The Impact of Monetary Policy on Household Debt in China. *The Journal of Asian Finance, Economics and Business*, *8*(4), pp.653-663.

Cavalletti, B., Lagazio, C., Lagomarsino, E. and Vandone, D., 2020. Consumer debt and financial fragility: evidence from Italy. *Journal of Consumer Policy*, *43*, pp.747-765.

Cecchetti, S.G., Mohanty, M.S. and Zampolli, F., 2011. BIS Working Papers-No 352-The real effects of debt.

Chatterjee, A., Czajka, L. and Gethin, A., 2020. *Estimating the distribution of household wealth in South Africa* (No. 2020/45). WIDER Working Paper.

Chmelar, A., 2013, May. Household Debt and the European Crisis. In *Paper presented at the ECRI Conference*.

Chotewattanakul, P., Sharpe, K. and Chand, S., 2019. The drivers of household indebtedness: Evidence from Thailand. *Southeast Asian Journal of Economics*, pp.1-40.

Christie, T., 2014. The effect of government spending on economic growth: Testing the non-linear hypothesis. *Bulletin of Economic Research*, *66*(2), pp.183-204.

Coletta, M., De Bonis, R. and Piermattei, S., 2019. Household Debt in OECD Countries: The Role of Supply-Side and Demand-Side Factors. *Social Indicators Research: An International and Interdisciplinary Journal for Quality-of-Life Measurement*, *143*(3), pp.1185-1217.

Connolly, M. and Li, C., 2016. Government spending and economic growth in the OECD countries. *Journal of Economic Policy Reform*, *19*(4), pp.386-395.

Cox, D. and Jappelli, T., 1993. The effect of borrowing constraints on consumer liabilities. *Journal of Money, Credit and Banking*, *25*(2), pp.197-213.

Crook, J., 2001. The demand for household debt in the USA: evidence from the 1995 Survey of Consumer Finance. *Applied Financial Economics*, *11*(1), pp.83-91.

Cynamon, B.Z. and Fazzari, S.M., 2013. The end of the consumer age. *After the Great Recession: The struggle for economic recovery and growth*, pp.129-157.

Daud, S.N.M., Podivinsky, J.M. and Abd Samad, K., 2021. Household debt and country economic growth: does a magic threshold exist?. *International Journal of Business and Society*, *22*(1), pp.161-174.

Deaton, A., 2005. Franco Modigliani and the life cycle theory of consumption. *Available at SSRN 686475*.

Debelle, G., 2004. Household debt and the macroeconomy. *BIS Quarterly Review*.

De Gregorio, J., 1996. Borrowing constraints, human capital accumulation, and growth. *Journal of Monetary Economics*, *37*(1), pp.49-71.

Dikko, M. and Madi, A.K., 2015. Casualties and effects of household debt in ASEAN countries. *International Journal of Economics, Commerce and Management*, *3*(2), pp.1-8.

Dumitrescu, B.A., Enciu, A., Hândoreanu, C.A., Obreja, C. and Blaga, F., 2022. Macroeconomic determinants of household debt in OECD countries. *Sustainability*, *14*(7), p.3977.

Dutt, A.K., 2006. Maturity, stagnation and consumer debt: a Steindlian approach. *Metroeconomica*, *57*(3), pp.339-364.

2222 Eggertsson, G.B. and Krugman, P., 2012. Debt, deleveraging, and the liquidity trap: A Fisher-
2223 Minsky-Koo approach. *The Quarterly Journal of Economics*, *127*(3), pp.1469-1513.

2224 Ekici, T. and Dunn, L., 2010. Credit card debt and consumption: evidence from household-
2225 level data. *Applied Economics*, *42*(4), pp.455-462.

2226 Feldstein, M., 1976. Social security and saving: The extended life cycle theory. *The American*
2227 *Economic Review*, *66*(2), pp.77-86.

2228 Finocchiaro, D., Jonsson, M., Nilsson, C. and Strid, I., 2016. Macroeconomic effects of
2229 reducing household debt. *Sveriges Riksbank Economic Review*, *2*, pp.57-88.

2230 Foote, C.L., Loewenstein, L. and Willen, P.S., 2021. Cross-sectional patterns of mortgage debt
2231 during the housing boom: evidence and implications. *The Review of Economic Studies*, *88*(1),
2232 pp.229-259.

2233 Fornell, C., Rust, R.T. and Dekimpe, M.G., 2010. The effect of customer satisfaction on
2234 consumer spending growth. *Journal of Marketing Research*, *47*(1), pp.28-35.

2235 Gelb, S., 2003. *Inequality in South Africa: Nature, causes and responses*. Johannesburg: Edge
2236 Institute.

2237 Gerlach-Kristen, P., 2014. Testing the permanent income hypothesis for Irish households, 1994
2238 to 2005. *The Economic and Social Review*, *45*(4, Winter), pp.511-535.

2239 Gujarati, D.N. and Porter, D.C., 2003. Basic Econometrics, McGraw-Hill. *New York*.

2240 Hein, E., 2012. Finance-dominated capitalism, re-distribution, household debt and financial
2241 fragility in a Kaleckian distribution and growth model. *PSL Quarterly Review*, *65*(260), pp.11-
2242 51.

2243 International Monetary Fund. Monetary and Financial Systems Department, 2017. *Global*
2244 *Financial Stability Report, October 2017: Is Growth at Risk?* International Monetary Fund.

2245 Jappelli, T., 2005. The life-cycle hypothesis, fiscal policy and social security. *PSL Quarterly*
2246 *Review*.

2247 Jian Xiao, J. and Yao, R., 2014. Consumer debt delinquency by family lifecycle categories.
2248 International Journal of Bank Marketing, 32(1), pp.43-59.

Johnston, A., Fuller, G.W. and Regan, A., 2021. It takes two to tango: mortgage markets, labor markets and rising household debt in Europe. *Review of international political economy*, *28*(4), pp.843-873.

Karambakuwa, R.T. and Ncwadi, R., 2021. Developing a framework for managing household debt. The case of South Africa. *The Business & Management Review*, *12*(1), pp.153-164.

Kereeditse, M.K. and Mpundu, M., 2021. Analysis of Household Debt in South Africa Pre-and Post-Low-Quality Asset Financial Crisis. *International Journal of Economics and Financial Issues*, *11*(5), p.114.

Kim, H., Cho, H. and Ryu, D., 2018. An empirical study on credit card loan delinquency. *Economic systems*, *42*(3), pp.437-449.

Kohl, S., 2018. More mortgages, more homes? The effect of housing financialization on homeownership in historical perspective. *Politics & Society*, *46*(2), pp.177-203.

Lacoviello, M., 2008. Household debt and income inequality, 1963–2003. *Journal of money, credit and banking*, *40*(5), pp.929-965.

Lang'at, L.C., 2018. Income distribution and household debt: macro-economics of keeping up with the Joneses.

Leclaire, J., 2021. Does household debt matter to financial fragility?. *Review of Political Economy*, pp.1-20.

Leigh, D., Igan, D., Simon, J. and Topalova, P., 2012. Chapter 3: Dealing with household debt. *IMF World Economic Outlook*, *16*.

Li, C., Lin, L. and Gan, C.E., 2016. China credit constraints and rural households' consumption expenditure. *Finance Research Letters*, *19*, pp.158-164.

Lie, C., Hunt, M., Peters, H.L., Veliu, B. and Harper, D., 2010. The "Negative" Credit Card Effect: Credit Cards as Spending-Limiting stimuli in new Zealand. *The Psychological Record*, *60*, pp.399-411.

Lin, L., Revindo, M.D., Gan, C. and Cohen, D.A., 2019. Determinants of credit card spending and debt of Chinese consumers. *International Journal of Bank Marketing*.

Lombardi, M.J., Mohanty, M.S. and Shim, I., 2017. The real effects of household debt in the short and long run. *BIS Working Paper No. 607*

Marire, J., 2023. Do fiscal deficits influence private savings in South Africa? An empirical note. *Journal of Economic and Financial Sciences*, *16*(1), p.13.

Marire, J., 2023. Interactive influence of house prices and the repo rate on household debt in South Africa. *Journal of Economic Analysis*, *3*(1), pp.58-78.

Meniago, C., Mukuddem-Petersen, J., Petersen, M.A. and Mongale, I.P., 2013. What causes household debt to increase in South Africa? *Economic Modelling*, *33*, pp.482-492.

Meng, X., Hoang, N.T. and Siriwardana, M., 2013. The determinants of Australian household debt: A macro level study. *Journal of Asian Economics*, *29*, pp.80-90.

Mian, A., Sufi, A. and Verner, E., 2017. Household Debt and Business Cycles Worldwide. *The Quarterly Journal of Economics*, *132*(4), pp.1755-1817.

Moore, G.L. and Stockhammer, E., 2018. The drivers of household indebtedness reconsidered: An empirical evaluation of competing arguments on the macroeconomic determinants of household indebtedness in OECD countries. *Journal of Post Keynesian Economics*, *41*(4), pp.547-577.

Moroke, N.D., 2014. The robustness and accuracy of Box-Jenkins ARIMA in modeling and forecasting household debt in South Africa. *Journal of Economics and Behavioral Studies*, *6*(9), pp.748-759.

Moroke, N.D., Mukuddem-Petersen, J. and Petersen, M., 2014. A Multivariate Time Series Analysis of Household Debts during 2007-2009 Financial Crisis in South Africa: A Vector Error Correction Approach. *Mediterranean Journal of Social Sciences*, *5*(7), p.107.

Muneri, K.P. and Kuhn, K., 2023. *Note on household sector debt and debt-service cost statistics, September 2023*. South African Reserve Bank.

Mutezo, A., 2014. Household debt and consumption spending in South Africa: an ARDL-bounds testing approach. *Banks & bank systems*, (9, Iss. 4), pp.73-81.

Odhiambo, N.M., 2006. Financial liberalisation and savings in South Africa: An empirical analysis. *African review of money finance and banking*, pp.61-74.

Oren, T. and Blyth, M., 2019. From big bang to big crash: The early origins of the UK's finance-led growth model and the persistence of bad policy ideas. *New political economy*, *24*(5), pp.605-622.

Orhangazi, Ö. and Özgür, G., 2015. Capital flows, finance-led growth and fragility in the age of global liquidity and quantitative easing: The case of Turkey. *Political Economy Research Institute Working Paper Series*, (397).

Östensson, O., 2012. The 2008 commodity price boom: did speculation play a role? *Mineral Economics*, *25*(1), pp.17-28.

Parui, P., 2023. Worker household debt, functional income distribution and growth: A neo-Kaleckian perspective. *Metroeconomica*, *74*(2), pp.446-476.

Pedrosa, Í., Brochier, L. and Freitas, F., 2023. Debt hierarchy: autonomous demand composition, growth and indebtedness in a supermultiplier model. *Economic Modelling*, *126*, p.106369.

Pill, H. and Pradhan, M., 1997. Financial liberalization in Africa and Asia. *Finance & Development*, *34*(002).

Precious, C. and Asrat, T., 2014. Determinants of household savings in South Africa: An econometric approach (1990-2011). *Mediterranean Journal of Social Sciences*, *5*(15), p.183.

Prinsloo, J.W., 2002. Household debt, wealth and saving. *Quarterly Bulletin*, *63*(78), pp.290-296.

Rees, J., 2014. Distribution and Debt: How Consumption and Household Debt Can Affect Economic Growth.

Rena, R. and Msoni, M., 2014. Global financial crises and its impact on the South African economy: A further update. *Journal of Economics*, *5*(1), pp.17-25.

Ryan, G., 2018. Introduction to positivism, interpretivism and critical theory. *Nurse researcher*, *25*(4), pp.41-49.

Salisbury, L.C., 2014. Minimum payment warnings and information disclosure effects on consumer debt repayment decisions. *Journal of Public Policy & Marketing*, *33*(1), pp.49-64.

Sassi, S. and Gasmi, A., 2014. The effect of enterprise and household credit on economic growth: New evidence from European union countries. *Journal of Macroeconomics*, *39*, pp.226-231.

Setterfield, M. and Kim, Y.K., 2016. Debt servicing, aggregate consumption, and growth. *Structural Change and Economic Dynamics*, *36*, pp.22-33.

Serra, G.P., 2023. Household debt, student loan forgiveness, and human capital investment: a neo-Kaleckian approach. *Journal of Post Keynesian Economics*, *46*(1), pp.173-206.

Soiferman, L.K., 2010. Compare and Contrast Inductive and Deductive Research Approaches. *Online Submission*.

South African Reserve Bank, 2009. *Financial Stability Review, March 2009*. South African Reserve Bank.

South African Reserve Bank, 2012. *Annual Economic Report, 2012*. South African Reserve Bank.

South African Reserve Bank, 2016. *Financial Stability Review, First edition, 2016*. South African Reserve Bank.

South African Reserve Bank, 2019. *Financial Stability Review, Second edition, November 2019*. South African Reserve Bank.

South African Reserve Bank, 2021. *Financial Stability Review, First edition, May 2021*. South African Reserve Bank.

Sparkes, M. and Wood, J.D., 2021. The political economy of household debt & the Keynesian policy paradigm. *New Political Economy*, *26*(4), pp.598-615.

Stockhammer, E., 2011. Wage-led growth: An introduction. *Towards a sustainable recovery: The case for wage-led policies*, p.167.

Stockhammer, E. and Wildauer, R., 2017. Expenditure cascades, low interest rates or property booms? Determinants of household debt in OECD countries.

Taydas, Z. and Peksen, D., 2012. Can states buy peace? Social welfare spending and civil conflicts. *Journal of Peace Research*, *49*(2), pp.273-287.

Toda, H.Y. and Yamamoto, T., 1995. Statistical inference in vector autoregressions with possibly integrated processes. *Journal of econometrics*, *66*(1-2), pp.225-250.

Tunc, C. and Kilinc, M., 2023. Household debt and economic growth: Debt service matters. *Open Economies Review*, *34*(1), pp.71-92.

Tunc, C. and Yavas, A., 2017. Collateral damage: The impact of mortgage debt on US savings. *Housing Policy Debate*, *27*(5), pp.712-733.

van den Heever, J., 2006. Household debt, interest rates and insolvencies in South Africa. *Press & Communications CH 4002 Basel, Switzerland*, *30*, p.52.

Wood, J.D. and Stockhammer, E., 2023. Bringing Household Finance Back In: House Prices and the Missing Macroeconomics of Comparative Political Economy. *Politics & Society*, p.00323292231201480.

Yasin, M., 2011. Public spending and economic growth: empirical investigation of Sub-Saharan Africa. *Southwestern Economic Review*, *30*, pp.59-68.

Yilmazer, T. and DeVaney, S.A., 2005. Household debt over the life cycle. *Financial services review-greenwich-*, *14*(4), p.285.

Zabai, A., 2017. Household debt: recent developments and challenges. *BIS Quarterly Review, December*.

Zakaria, R.H., Jaafar, N.I.M. and Ishak, N.A., 2017. Household debt decision: Poverty or psychology? *International Journal of Business and Society*, *18*(3), pp.515-532.

APPENDIX

Table A: summary of studies on the effect of household debt on economic growth in South Africa

Study	*Title*	*Year*	*Methodology*	*Country/s*	*Variables*	*Findings*
Abd Samad *et al*. (2020)	Household debt and economic growth	1980-2018	Least Square Dummy Variables (LSDVC) estimator	43 countries	GDP per capita growth, GCF, population growth, human capital, inflation, household debt	The findings for the sample of panel data confirm that the household debt has detrimental effect on growth.
Adewale, (2014).	Financial Regulation, Credit Consumption And Economic Growth An Analysis Of The National Credit Act In South Africa	2007-2012	Unit root tests	SA	Mortgages granted, secured credit, short term credit, unsecured credit, inflation, interest rates	The findings are that an increase in credit consumption has precipitated an increase in economic growth.
Ajisafe and Okunade, (2020)	Finance-led-growth hypothesis and domestic investment in Nigeria.	1986-2017	ARDL and VECM Granger causality	Nigeria	GDP, financial sector development, domestic investment, government expenditure, real interest rates	The study finds that financial development and domestic investment have significant positive impacts on economic growth in Nigeria
Bezemer *et al*. (2016)	More mortgages, lower growth?	1990-2011	Generalised Method of Moment	46 countries	GDP per capita, total credit, nonfinancial sector, financial sector, nonfinancial credit, consumer credit, mortgage credit, financial business credit	The study finds positive growth effects for credit flows to nonfinancial business but not for mortgage and other asset market credit flows.

Daud *et al*. (2021)	Household debt and country economic growth: does a magic threshold exist?	2008-2016	Economic growth model	24 countries	GDP per capita, household debt, investment, population, trade	The study found that the impact of household debt on a country's economic growth is negative. Because the relationship between debt and growth is a monotonically non-increasing function, we do not find a magic threshold of debt.
Lombardi *et al*. (2017)	The real effects of household debt in the short and long run.	1990–2015	ARDL model	54 economies	Financial dev index, per-capita income, savings rate, schooling, dependency ratio, trade openness, legal protection for creditors, depth of credit info, tax rate, reliance USD, inflation, house price, population	Household debt boosts consumption and GDP growth in the short run, mostly within one year
Mian *et al.* (2017)	Household debt and business cycles worldwide	1960-2012	VAR model	30 countries	Household and nonfinancial firm debt to GDP, national accounts, unemployment, professional GDP forecasts, credit spreads, international trade	Countries with a household debt cycle more correlated with the global household debt cycle experience a sharper decline in growth after an increase in domestic household debt
Moore and Stockhammer (2018)	The drivers of household indebtedness reconsidered: An empirical evaluation of	1993-2011	ECMs	13 OECD countries	Household debt as a % of GDP, house prices, stock prices, wages, welfare, age	The results show that the most robust macroeconomic determinant of household debt is real residential

	competing arguments on the macroeconomic determinants of household indebtedness in OECD countries					house prices, and that the phase of the debt and house price cycles plays a role in household debt accumulation.
Mutezo (2014)	Household debt and consumption spending in South Africa: an ARDL-bounds testing approach	1986-2013	ARDL model	SA	Household debt, household disposable income, wealth, interest rate, consumer price index	The study discovered that higher household debt levels lead to higher consumption spending, and therefore growth in South Africa
Sassi and Gasmi (2014)	The effect of enterprise and household credit on economic growth: New evidence from European union countries	1995-2012	OLS and IV regression and GMM dynamic panel data model	27 European countries	GDP per capita, income per capita, household credit, enterprise credit, government consumption, total exports and imports, consumer price index	Our finding gives an explanation of the negative effect of aggregate credit measures on economic growth
Tunc and Kilinc (2023)	Household debt and economic growth: Debt service matters	1999-2019	MSV	17 countries	GDP, household debt, firm debt, household Debt Payment / Income, firm Debt Payment / Revenue, unemployment rate	The study finds that the debt service burden reduces economic growth over both the short and medium run.
Wood and Stockhammer (2023)	Bringing Household Finance Back In: House Prices and the Missing Macroeconomics of Comparative Political Economy.	1980-2019	ARDL model	18 countries	GDP, household debt, house prices, business debt	The finds show that household debt is determined by house price inflation, and that rising household debt contributes to GDP growth,

2391

2392

2393