Developments in the South African Credit Market and Analysis on Indebted Consumers Using NIDS Data

A Mini Dissertation Presented to the

UNIVERSITY OF CAPE TOWN

In Partial Fulfilment of the Requirements

For the Degree of

Master of Commerce (Applied Economics)

Student Name: Samantha Choonoo

Supervisor: Professor Haroon Bhorat

Date: 20 May 2016

ACKNOWLEDGEMENT

I wish to thank my supervisor, Professor Haroon Bhorat for his guidance and patience throughout the process of composing this dissertation. A special thank you to everyone who supported and motivated me in pursuing my goals.

ABSTRACT

Household debt measures provide vital information regarding society's financial wellbeing. This paper uses a comparative static analysis approach to evaluate total and consumer debt at the household level using two waves of NIDS data relating to the periods 2008 and 2012. The descriptive analysis is based on the share of income servicing debt by various household characteristics while the econometric analysis models the determinants of debt servicing at the household level. The descriptive statistics illustrates the financial vulnerable position of low income households as they spend a proportionally larger share of household income on debt payments and their main sources of credit are from retailers, hire purchase agreements and loan sharks. The OLS and Median Quantile regression results for 2008 and 2012 under total debt analysis indicate a dampening of the negative effect for female, Black, Coloured, no schooling and primary schooling variables; a strengthening of the positive effect for formal house structure made of brick; a dampening of the positive effect for house ownership, post-secondary education, employment and urban variables; and a strengthening of the negative effect associated with government grant income. Results for consumer debt servicing for the same period suggests a narrowing of the gender gap; that lower levels of education are less of a barrier; and that the positive effect associated with urban settlement type has diminished.

Terms of Reference

DTI – Department of Trade and Industry

EAOs – Emolument Attachment Orders

GDP – Gross Domestic Product

IFC – Irving Fisher Committee

MPC – Monetary Policy Committee

NCA – National Credit Act

NCR – National Credit Regulator

NIDS – National Income Dynamics Study

OLS – Ordinary Least Squares

SALDRU – Southern Africa Labour and Development Research Unit

SARB – South African Reserve Bank

VECM – Vector Error Correction Model

Table of Contents

List of Tables

Chapter One: Introduction

1.1. Background

Deregulation of South Africa's financial institutions began in the 1980s along with interest rate liberalisation, removal of credit rate caps, improved openness to foreign financial institutions and increased market penetration and extension of credit to consumers (Cronje and Roux 2010:27). New opportunities arose for credit providers as they became less constrained in their lending capacities in a regulatory context. The positive economic environment of low interest rates and rising employment and income in the early 1980s further fuelled credit providers' appetite to extend credit. This resulted in the increased ability of individuals' and households' to borrow.

As indicated by van den Heerver (2007), the household debt ratio rose until the mid-1980s, thereafter declined significantly as higher interest rates and a deteriorating economic outlook stemming from financial sanctions imposed on South Africa started to dampen households' appetite for debt. In the late 1980s household debt ratio started to increase once more as financial institutions started to develop innovative financial products. This was reinforced by legislative reform in the early 1990s which allowed Black South Africans more business opportunities and dealings in the property market as well as increased access and use of the banking sector. The 1990s was characterised by a changing socio-economic and political environment and one of the observed outcomes was increased levels of consumer credit which was attributable to aggressive marketing tactics employed by banks and chain-stores (Prinsloo 2000:20). The rise in household debt ratio kept on until 1996, remained stable till 1998 after which it declined through to 2002 due to the steep increase in interest rates following the Asian Crisis such that households remained hesitant to borrow even as interest rates eased between 1999 and 2001. As from 2002 the household debt ratio rose once more until peaking at record levels in early 2008 due to favourable economic and financial conditions. The low interest rate and buoyant housing market positively impacted the net wealth of households and increased its appetite for credit.

Once the negative spill-over effects of the global financial crisis of 2007/2008 hit the South African economy a recessionary period ensued. Together with the introduction of the National Credit Act (NCA) which took effect on 01 June 2007, there was a slow-down in debt accumulation between 2008 and 2010. For instance, Walters (2011:70) relays that the average annual growth rate of mortgage advances reduced substantially from 29 percent in the period 2003-2007 to 3.4 percent in the period 2008-2010; similarly, other household debt increased at a much slower pace at an average annual growth rate of 12 percent in the period 2003-2010. Although the Monetary Policy Committee (MPC) adopted an accommodative stance and reduced the repurchase rate by a total of 450 basis points between December 2008 and May 2009 the economic recession dampened activity within the residential property market, leading to an increase in impaired advances and a reduction in credit demand.

The economic outlook did improve as subsequent to this period rising real disposable income drove the increase in expenditure as opposed to credit use. This was considered to be more sustainable as debt service cost declined in an environment of lower interest rates due to the accommodative cycle that lasted until Quarter 1 of 2011. From 2010 to 2012, household debt to disposable income ratio decreased while the growth in net wealth for the household sector slowed in 2011 compared to 2010. This indicates that credit providers considered factors such as creditworthiness and household income more so than collateral. This change was further supported by the shift in credit providers' appetite from secured to unsecured lending which partly resulted from the pricing model set out by the NCA. The robust growth in unsecured lending started slowing down toward the end of 2012 and persisted until Quarter 2 of 2013 as banks attempted to reduce risk exposure to this segment of the market. Following this there was a decline in the household sectors' appetite for debt during 2014, mainly attributable to weak employment prospects and high levels of indebtedness. These weak economic conditions persisted into the first half of 2015, hence credit extension continued to be restrained. All these trends have been documented by numerous authors and much detail can be gained from a review of the Annual Economic Report and the Financial Stability Review released periodically by the South African Reserve Bank (SARB).

Credit extension has over the last few decades been affected by political and socio-economic considerations which have led to financial sector deepening and servicing of the previously under- and unserved segments of society. This can be deduced from the changes in the growth of credit over the years in response to legislative changes, innovative financial products, increased market penetration and prevailing economic conditions. Some of the economic factors that affect the indebtedness levels of individuals and households include:

- growth in disposable income - positive growth indicates a relative increase in the ability to meet debt obligations as long as the cost of such credit remains stable;
- employment status - the loss of a job or the inability to obtain a job may increase the reliance on outside sources of financing such as credit;
- administrative prices - high prices reduce the amount of disposable income left to satisfy obligations; and
- consumer confidence - high levels of consumer confidence may lead to over-optimism about future income expectations, which may increase current use of credit with the view that it is affordable.

1.2 Importance of Credit

Households at one point or another usually require credit to bridge the gap between its available resources and its need. The existence of a well-functioning consumer credit market is thus important and progress has definitely been made regarding the development of a competitive financial sector within South African since financial deregulation. One of the key measures when it comes to considerations of society's wellbeing is the financial position of households. An evaluation of debt measures imparts vital information about the soundness of household finances and this enables one to determine if and when the level of household borrowing becomes too burdensome such that households become financially vulnerable.

Some concerning observations have accompanied the rise in the proportion of households' ability to borrow over the past few decades. It is thus important to know what

factors influence household debt and debt servicing, this is especially true in circumstances where households may find themselves experiencing financial distress. A particular worrisome scenario is the case of long term indebtedness, as it hampers the ability of households to save over a significant period of time. Long term indebtedness diminishes households' ability to deal with unexpected shocks that negatively affect income, such as job loss, sudden illness or injury, death of the breadwinner or family member. Some households on the cusp of making ends meet given existing financial obligations and necessary expenditures may simply default on their debt obligation all together or satisfy only part of their obligation, others may temporarily solve the problem of unexpected income shock by borrowing additional funds to pay off existing obligations and thereby find themselves in an untenable over-indebted position. Once a household or individual is over-indebted recovery from this position is usually strenuous and slow and the risk of defaulting on existing obligations increases.

Another concerning issue is that households may be constrained from borrowing in the formal credit market due to a lack of assets and a poor creditworthy track record and thus be subjected to unfavourable terms and conditions attached to credit sourced from informal credit providers. For instance, loan sharks charge exorbitant interest rates and while their credit granting process is not as stringent as in the formal credit market, there is greater concern that households find themselves financially exposed, potentially leading them into a debt trap. This makes analysis of different segments of society necessary, especially low income households who experience persistent pressures on cash flows and often lack a savings buffer in the form of liquid or illiquid assets to protect them against negative income shocks.

Rob Davies the Minister of Trade and Industry, during the Barclays Consumer Conference in Cape Town on 7 September 2015, stated that, "consumers are continuously being lured and enticed into taking more credit due to misleading adverts that prey on desperate and vulnerable poor people", he also expressed that more rigid affordability assessments need to be conducted by credit providers to assist in addressing the problem of over-indebtedness (Dirk 2015a). An instance of consumer exploitation was recently reported whereby the National Credit Regulator (NCR) along with the police raided 21 Western

Cape companies. Most companies were found to be registered credit providers, however the raid resulted in the arrest of 5 alleged loan sharks, the seizure of 71 pension cards, and it was discovered that 7 identity documents and 5 bank cards were held illegally as surety for loans (Dirk 2015b). Another case in point of consumer exploitation involved a court case early in 2015 concerning a group of Stellenbosch workers. These workers had Emolument Attachment Orders (EAOs) on their salaries, such that a significant portion of their salary was deducted to satisfy debts owed to micro-lenders. It was found in some instances that consumers were charged excessive interest rates of up to 60 percent (Hartley 2015). These statements and events give one a sense that in spite of the new unifying credit legislation in place, namely the NCA, improvements still need to be made to tighten regulation further and effective enforcement must be maintained to ensure that vulnerable consumer are not taken advantage of.

Currently consumers are facing a rising interest rate cycle, higher inflation, persistent electricity constraints and with poor economic performance and political ructions the economic outlook is likely to remain depressed in the short to medium term. The current status of the economy provides impetus for continual observation of developments within the credit market industry and evaluation of households' financial wellbeing.

1.3 Objectives

The aim of this paper is to evaluate household debt using survey data from the National Income Dynamics Study (NIDS) collected in 2008 and 2012, which relates to wave 1 and wave 3, respectively. While the global financial crisis occurred in 2007/2008 and the National Credit Act 34 of 2005 became fully enforceable as from June 2007, the intention is not to decompose the effect of either or both events on household debt measures, rather the discussion will focus on the descriptive and econometric analysis regarding the developments and determinants relating to household debt measures following these events.

In this paper, the researcher defines and evaluates total debt and consumer debt separately at the household level. This is done to reflect the different debt profile associated with households who hold mortgages and those that do not, as mortgage debt is quite substantial in nature. While it is expected that the level of household debt for mortgagees are higher in absolute terms, often their financial situation is healthier in that they acquire a substantial asset through such means of finance and this leads to an improved net wealth position. Consumer debt is often costlier as credit providers charge higher interest rates over shorter terms to compensate for the increased risk of default in the absence of collateral. By separating total debt and consumer debt the financial position of households at different income levels are taken into account, especially low income households that incur debt predominantly in terms of consumption goods[1]. The researcher basis the analysis on respondents' reported debt payment made in the last 30 days and therefore debt servicing as a share of household monthly income by various household characteristics is the focus when it comes to the descriptive overview. The econometric analysis evaluates the determinants of monthly debt servicing at the household level. Results drawn from 2008 and 2012 NIDS datasets are compared, with particular focus on the latter period as it informs the most current perspective into household debt measures.

An advantage of individual and household level surveys is that is allows for data on informal economic activity to be captured and therefore an improved assessment of the financial position of each household. Aggregate data on the other hand provides a perspective based on the national average. The definition of household debt also differs between these different sources of data making direct comparisons between aggregate data and results derived from survey data inappropriate, rather the findings should support one another[2].

---

[1] Secured credit is linked to the purchase of an asset unlike unsecured credit. Unsecured credit is split into: revolving credit, where a debtor is allowed to borrow up to a pre-specified amount and payment in part or whole means that further borrowing can take place up to that pre-specified amount; and non-revolving credit, where debt is extended under pre-determined terms and conditions and not renewed once payment is made either in part or completely. While these distinctions exist they do not impact the analysis within this paper.
[2] For instance, SARB releases data on credit extension to the domestic private sector in its Quarterly Bulletins and included in this measurement is credit to unincorporated businesses.

This research paper commenced with an introduction detailing the background of credit use in the context of South Africa and provided the motivation for research on this topic. Chapter Two provides details on the regulatory environment governing the credit market industry. Although it is not the focus of this paper to discuss legislative reformation of the credit market, a review of the regulatory environment is essential as it provides insight into the motivation for legislative change. Chapter Three follows with a review of the relevant literature on debt. Thereafter a descriptive evaluation of household debt commences in Chapter Four with a discussion of the results. Following this Chapter Five details the econometric model of debt servicing at the household level. Lastly Chapter Six ends with the conclusion and recommendations for future research.

Chapter Two: South African Credit Legislation

2.1 Credit Legislation and Motivation for the NCA

Prior to the NCA, the legislative Acts regulating credit agreements were the Usury Act 73 of 1968, the Credit Agreements Act 75 of 1980 and the Exemption Notices of 1992 and 1999 to the Usury Act. The prevailing insolvency legislation at the time was described as being pro-creditor in nature, given the high costs associated with sequestration applications (Roestoff and Renke 2005:94). Towards the latter part of the 1990s consumer credit legislation was seen to be fragmented and considered to be ineffective as the credit market became evermore complex in view of the changing political and socio-economic environment which brought forth increased consumer demands.

Since financial deregulation debt levels had shown strong growth, especially unsecured forms of credit used mainly for consumption goods among low income earners. This was facilitated by entry of micro-lenders into the credit market industry during the 1990s. The Department of Trade and Industry (the DTI) noted that there has been extensive credit

extension to consumers considered to be creditworthy which resulted in heavy debt burdens faced by these consumers. According to Goodwin-Groen (2006:8), "problems explicitly identified by the DTI in 2003 included reckless behaviour by credit providers; exploitation of consumers by some micro-lenders, debt administrators and debt collectors; lending without regard for a borrower's ability to repay, leading to high levels of indebtedness; deceptive pricing; and abusive collection techniques". The objective was to reconcile all these pieces of credit market legislation and create one unified piece legislation to fulfil a number of purposes which included: improved consumer protection; the promotion of competition, transparency and efficiency in the credit market; and the prevention of consumers becoming over-indebted thereby ensuring a stable financial system.

The NCA established the National Credit Regulator (NCR) which came into being on 01 June 2006. The NCR is responsible for enforcing provisions of the Act, monitoring the credit market industry and advising the Minister of Trade and Industry on matters of national policy relating to consumer credit. More specifically the NCR has a number of tasks according to Renke, Roestoff and Haupt (2007:239) that include:

- the promotion and support of access to the credit market by those considered under-served and unserved, essentially those that have been previously disadvantaged as well as low-income earners;

- registering of credit providers, credit bureaux and debt counsellors;

- to gain insight into the workings of the credit market;

- to improve public awareness of applicable legislation; and

- to increase financial literacy of participants in the credit market, particularly that of consumers.

Given the motivation behind the NCA, one would expect the extensive change in consumer credit legislation which now offers greater protection to more consumers to reduce access to credit at least initially. Formal credit providers are more likely to use stricter processes in screening credit applications, this introduces a longer time delay in

gaining credit for those successful applicants and also leads to higher rejection rates, essentially reducing the supply of credit. Given higher business costs regarding more rigorous screening processes and more instances of rejection in turn, demand seen in the form of credit applications is expected to decline. At the beginning stages of the 2007/2008 global financial crisis further deterioration of household debt levels may have been subdued to an extent while this regulatory adjustment in the consumer credit market took place.

2.2 Scope of the NCA

The list of credit types covered by the NCA are as follows: mortgage agreements, credit facilities, unsecured credit transactions, developmental credit agreements, short-term transactions, other credit agreements and incidental credit agreements; those credit agreements that are excluded from the Act include: stokvel syndicates, loans to government or certain juristic persons, and loans between family and friends (Renke, Roestoff and Haupt 2007:239)[3].

As per the NCA, credit providers must register themselves as such if they conducted at least 100 credit agreements or the total principal debt outstanding under all credit agreements of that credit provider is greater than R500 000 (Renke, Roestoff and Haupt 2007:240). This therefore means that not all credit providers are required to register themselves, which hinders regulation and monitoring of the credit market. This is not ideal as low income households tend to approach informal credit providers when the need for funding arises and are therefore subject to expensive non-transparent credit agreements.

---

[3] As indicated by Renke (2011), the NCA applies to all but a few credit agreements which are specifically excluded from its ambit, irrespective of size, form and the type of goods or services or the amount of money involved.

2.3 Consumer Protection Measures Set Out by the NCA

The NCA attempts to alter the balance of power between lender and borrower through measures of financial protection. Renke (2011:212) details these measures of financial protection quite precisely and they include:

- credit providers must fully disclose to the consumer their financial obligations enabling an informed decision prior to entering the credit agreement;
- the Act deters undesirable credit marketing and advertising, however Renke does suggest that this is not a serious provision given that contravention is not an offence, the only exception being the enforceability and validity of the agreement with respect to negative option marketing[4];
- the credit provider is to give the consumer a pre-agreement statement and a quotation which is valid for 5 business days and all documentation must contain the requisite financial information;
- unlawful contractual provisions are void;
- documents provided by the credit provider should be in the language that the consumer is conversant in and contain plain and understandable language;
- consumers are entitled to a copy of the credit agreement and to regular statements;
- interest rate caps are set as a way to provide the debtor with financial protection;
- the Act defines 'principal debt' and 'deferred debt' thereby preventing credit providers from altering the amounts that they can claim in the form of interest; and
- the Act also refers to the maximum amount recoverable.

In dealing with consideration of over-indebtedness Renke (2011:222) states that a full representation of consumers' financial means and obligations must be gleaned before a determination of over-indebtedness can be reached. Simply put, it must be determined if the consumer is able to meet his/her financial commitments regularly and this must be viewed in light of his/her track record under prior debt obligations.

---

[4] Negative option marketing is an offer to a consumer to enter into a credit agreement, such that unless the consumer actively declines the offer it is automatically taken up.

In terms of reckless lending, credit providers must conduct a three-part assessment before a credit agreement can be entered into. First the credit provider must take reasonable steps to determine the proposed consumers' understanding and appreciation of the associated risks and costs regarding the proposed credit agreement; secondly the credit provider must evaluate the repayment history of the individual in relation to obligations under other credit agreements; and thirdly, the proposed consumers' financial means, prospects and obligations must be assessed (Renke, 2011:223).

2.4 Consequences and Criticisms of the NCA

Collins (2008:469) makes a valid point when he asserts that the NCA and its legislative remedies is likely to relate only to a share of indebted household, particularly those households who have salaried workers and those that are located in urban areas. In the formal credit market one of the prerequisites for credit applications is often the provision of one's payslip, essentially those that do not have formal employment are rationed out by this requirement and are discouraged from applying for credit in the formal credit market. Additionally, those who are located in rural areas are disadvantaged by high transport cost and time delays in accessing the formal credit market.

As mentioned previously the expected effect of the NCA is to reduce household debt levels due to stricter lending criteria on the part of credit providers. Although access to credit may be reduced in the formal sector, poorer segments of society may gain credit from alternate informal sources which often place them in a worse-off financial position due to unfavourable terms and conditions attached to loans.

A shift in the finance bubble from mortgage bonds to unsecured loans was noted following the implementation of the NCA, as the figure on outstanding unsecured credit exploded from \$5.1 billion in late 2007 to \$15. 1 billion by March 2012 (Steyn, cited in Bond 2015, p.226). The NCA increased credit providers' appetite for unsecured credit as a result of

the pricing model employed within. Evaluation of the formula on the maximum interest rates for unsecured credit set forth by the NCA provides backing for this assertion. As conveyed by Ardé (4 July 2015:10), the formula is far from being pro-poor in that there is an exponential translation of movements in the repurchase rate to the interest rate charged on credit, which acts as a contributing factor to indebtedness. For instance, the formula for non-mortgage credit agreements is as follows: repurchase rate * 2.2 + X percent, where X depends on the type of credit agreement.

The fairness of the formula is questionable as consumers often use inappropriate, more expensive types of credit and given that poorer segments of society are less financially literate this further exacerbates potentially dire financial circumstances. The multiplier effect within the formula according to Ardé (22 August 2015:3) tends to lead to a number of consequences: the risk of default increases as most consumers find difficulty in understanding how increases in the interest rate effect the cost of credit; banks borrow at a rate directly linked to the repurchase rate but lend at a proportionally higher rate which leads banks to promote types of unsecured credit in an effort to boost profit margins; and the financial system is exposed to systemic risk if a significant portion of consumers no longer are able to afford their credit as the maximum interest rate exceeds a certain point. The consequences relating to the pricing model within the NCA will be alleviated as from May 2016 as an updated formula that excludes the multiplier will be used in calculating the maximum interest rate on loans and the maximum initiation fees and maximum service fee has been revised (Kearney 14 November 2015: 1)[5].

---

[5] Kearney adds that the maximum service fee is capped at R60 per month and the maximum initiation fee for short term and unsecured credit is capped at R165 per credit agreement plus 10 percent of the amount that exceeds R1000, but not more than R1050.

Chapter 3: Literature Review

Even though household debt measures are indicative of household financial wellbeing, research on this topic is scarce. The aim of this literature review is to touch on the theoretical underpinning that inform the use of credit and the various strands of literature that offshoot therefrom. The researcher first looks at descriptive and empirical findings in the international context before shifting to a review on findings for the South African economy.

3.1 Consumption Theory:

Modigliani's Life-Cycle Hypothesis states that consumption by a rational consumer depends on all available resources together with the allocation of income over a households' entire lifespan. Household spending behaviour relates to the eagerness of consumers to consume now rather than later, given their expectation about future income rather than relying solely on current income. A smooth consumption flow over the households' lifetime implies that in the early life stage, households need to borrow to fund this constant consumption level, as current income is insufficient and these younger households do not have saving to draw upon. As income increases from early to mid-life stage, households' are able to settle their debt obligation and save resources. These resources will then be depleted in the households' last life stage.

Extensions to the Life Cycle model since its inception have been made, though criticism still remains, as at the core the model still relies on households' ability to predict future states of the world. For instance, the household should be able to predict the following factors: future household size and make up; the lifespan of each household member; income profile of each household member over their lifespan; future impactful events such as emergencies and opportunities, social pressures that affect consumer spending and current and future extent of and terms and conditions attached to available credit (Froyen,

cited in Hurwitz and Luiz 2007, p.110). Hurwitz and Luiz (2007:111) suggests that in the context of South Africa as compared to industrialised countries, the task of foreseeing these future states of the world is made that much more challenging given that households are considered to be more vulnerable to income shocks, disease such as HIV/Aids, as well as the possibility of retrenchment in a weak labour market.

The theory also has limitations relating to the cost of credit and access to credit. The cost of credit is not a minor issue, different types of credit have different associated costs and poorer segments of society often face higher costs given their risk profile. Poorer households do not have assets to back up their borrowing needs and future earnings for these households are uncertain. As such current income is more so an indicator to credit providers of the ability to repay debt, as is employment status given its association with regular earning power. The risk profile of these poorer households leads lenders to charge higher interest rates to compensate for the increased risk of default while wealthier households have greater access to cheaper credit.

Use of credit by consumers is not limited to consumption smoothing in response to temporary unexpected adverse shocks to income. Aron and Muellbauer (2000:22) suggests several additional motives for the use of credit by consumers and they include: funding the purchase of expensive indivisible goods such as durables and housing; investing in human capital formation by way of education or training; investing in a portfolio of financial assets as favourable returns are foreseen; and lastly utilising credit in order to counterbalance the excessive level of savings gained from occupational pension rules.

Another train of thought is that an analysis of debt should be evaluated using a range of social science disciplines, which to date has not been done due to modelling difficulties. Livingstone and Lunt (1992:114) propose that personal debt should be evaluated from an economic perspective, noting the effects of income with the use of life cycle models; in the sociological context, where social norms and reference groups are considered to influence decisions; from a social psychological stance, where one's sense of control, attitudes and beliefs are important considerations; and from a demographical perspective,

highlighting the significance of life events, such as births, deaths or disease. In the event that such a model could be developed, the next step would be to find an adequate data source that holds all the requisite information, however this does not currently exist.

3.2 Theoretical Concepts and International Findings

i. Aggregate Demand and Business Cycles

A dominant perspective in the literature tends to point to the notion that individuals and households extend themselves financially in times of good economic conditions and tighten their belts financially during depressed economic conditions. Palley (1994) evaluated debt from a macroeconomic perspective by considering aggregate demand and the business cycle. He applies Minsky's theory, which proposes that business cycle upswings are regarded as periods of 'tranquillity' during which stakeholders become increasingly optimistic. He combines this with Kaldorian theory to make this notion applicable to household debt and consumption rather than corporate debt and investment. Palley terms this combination as the Minsky-Kaldor business cycle and suggest that within the financial sector these periods of 'tranquillity' increase households' willingness to borrow and leads to an easing in lending standards by credit providers, which in turn results in an increase in households' leveraged position. The increase in household debt initially stimulates aggregate demand, however with the increased accumulation of debt households become financially vulnerable. A reduction in credit extension ensues due to fears of financial instability on the part of credit providers and this is followed by a reduction in aggregate demand due to the heavier burden in the form of higher debt repayments faced by consumers. Palley uses data from CITIBASE for the period Q2-1975 to Q1-1991 and employs a simple multiplier accelerator model and found that these periods of 'tranquillity' indeed increased the likelihood of cyclical instability.

ii.   Social Norms and Behaviour

With the use of credit becoming more widespread over time much of society no longer view it in a negative light, but rather see it as a tool to achieve certain goals such as asset accumulation or to serve a temporary need due to limited resources. The Life Cycle model relies on consumers' ability to predict future states of the world, which in reality is an extremely complex task accompanied by many uncertainties. This uncertainty is the reason why Cynamon and Fazzari (2008:2) suggest that household spending and financial decisions be institutionally specific and historically contingent. The authors consider consumption preferences to be endogenous and developing over time through exposure to group interactions and the media. There has been a noted change in consumers behaviour over time due to changed perceptions and social norms, such that consumer spending often exceeds income. This along with institutional changes to consumer finance which eased borrowing constraints, as well as the introduction of innovative financial products has resulted in an explosion of household debt. Cynamon and Fazzari (2008) suggests that lending based on untenable consumer culture is inconsistent with the Life Cycle theory and uses Minsky's financial instability theory to emphasise the severity of American consumer culture toward credit use.

At the core of Minsky's instability theory in the context of consumers and households is the notion of leveraging to a point where it no longer becomes sustainable and ultimately back-fires by negatively impacting aggregate demand. Hull (2003:9) details the mechanics behind leveraging, namely increases in capital gearing[6] makes households more vulnerable to declines in asset values and in the event of a recession, access to credit may be constrained due to an existing high stock of debt and falling asset prices; additionally, rising interest rates would add to the debt servicing burden by increasing the income gearing ratio[7], this concern is echoed by Girouard, Kennedy and Andre (2006:6). In the case of New Zealand, Hull (2003:10) notes that the increase in capital gearing is due to an increase in debt and not a decrease in assets with an upward trend in capital

---

[6] Capital gearing is defined as the ratio of total liabilities to total financial assets and housing wealth.
[7] Income gearing is defined as the ratio of interest payments on debt to disposable income.

gearing observed after financial deregulation. With the increase in indebtedness levels following financial deregulation, came a decrease in savings rate, which according to Hull supports the notion that liquidity constraints increase savings rate.

The study by Livingston and Lunt (1992) evaluates psychological, social and economic determinants predicting debt and debt repayment. A questionnaire was posted to a pseudo random sample of residents in the UK and a snowballing technique followed to increase the number of working age people. A discriminate function analysis was used to distinguish debtors from non-debtors and a multiple regression analysis followed to predict how much debt debtors were in and how much would be repaid on a regular basis. The results indicated that debtors were significantly younger than non-debtors, however the authors argue that the finding is based on generational difference in attitude towards debt rather than confirmation of the Life Cycle theory. The data showed that debtors had fewer children and emphasised loss of control. The amount of debt was determined by disposable income, the number of debts and a favourable attitude towards credit. Factors that increase the amount of regular debt repayment include: disposable income, amount owed, and the view of credit as a temporary budget strategy.

iii.   Financial Expectations

Financial expectations according to theoretical underpinnings impact spending behaviour and thus borrowing on the part of consumers. When the general economic outlook and one's own financial outlook is positive (negative) it increases (decreases) individuals' and households' willingness to borrow. Similarly, credit providers adjust their willingness to lend and the extent of risk that they are prepared to be exposed to in response to economic conditions. Brown *et al.* (2005) creates a financial expectation index based on subjective answers to survey questions ranking responses from a bleak to optimistic outlook using two waves of data from the British Household Panel Survey, relating to the periods 1995 and 2000. Brown *et al.* (2005) first estimated a random effects Tobit model to explore the logarithm of amount of outstanding debt, then estimated by random effects

the logarithm of growth in debt weighted by total annual income over the 1995-2000 period. Results from the estimation and robustness checks confirm that optimistic financial expectations positively influence both the level and growth of debt rather than the precision of forward-looking individuals and households when it comes to their financial position.

iv.   Credit Constraints and Desired Amount of Debt

A univariate estimate to show the probability of being credit constrained is used by Crook (2001) to evaluate household debt in the USA, using the 1995 Survey of Consumer Finance. Crook finds that the probability of being credit constrained is negatively related to the age bands 55-64 and 65 and above, income, net worth, owning one's own house, the number of cards; and positively related to being Black, household size, foreseeing a large expenditure in the next five years. Younger age bands were not found to have a significant positive impact on credit constraints as expected, while households with some sort of structural advantage seem to be better equipped to overcome the initial obstacle associated with accessing credit. The desired stock of debt for households that are not credit constrained is positively related to current income, house ownership, size of the household, large expense foreseen in the near future and employment of the household head; negatively related to current income squared[8], net worth, risk aversion; and has no significant relation with regard to future interest rates, gender or race of the household head. According to the descriptive statistics constrained households have heads that are younger, less educated, less likely to own the household, more likely to be Black or native American, less likely to be White, have a smaller household size, have fewer chequing accounts, a bigger proportion foresees a large expenditure in the next five years, having been employed for a shorter period in their current job and having lower net worth and assets on average.

---

[8] The current income squared variable indicates that there is a maximum desired stock of debt at some income level.

v.   Risk of Default

With rising levels of debt in developed and developing countries risk of default is an important research topic. May and Tudela (2005) use data from the British household panel survey to examine the determinants of households' ability to service mortgage debt using a dynamic probit approach. They find that the most important household level variables associated with an increase in mortgage payment problems are: adverse changes to unemployment, specifically inflows into unemployment matter rather than persistent unemployment, as in the case of persistent unemployment households adjust accordingly; and income gearing above 20%[9]. While interest rate is the only significant non-household variable. Other household variables associated with increased probability of mortgage payment problems are past payment problems (persistence), high burden relating to secure debt and high loan to value ratio.

Alfaro and Gallardo (2012) evaluated the probability of defaulting on outstanding debt using household level data in the context of Chile. The authors used personal and financial variables to analyse securitised (mortgage) debt separately from non-securitised (consumer) debt given that the structure of these types of debt differ. They used a two stage equation as the probability of default could only be estimated conditional on households holding debt. The main determinants that lower the probability of default for both mortgage and consumer debt are: income or proxies of income, such as having a bank account or education above high school level. The probability of default for consumer debt increases as the number of people within the household who contribute to household income increases. There may be many household members who contribute to household income, however combined household income remains low due to a high level of income inequality within some societies.

There is a strand of literature that questions whether differing institutions have a bearing on the likelihood of default (insolvencies) in the event of adverse shock, such as job loss

---

[9] Income gearing in this instance refers to the ratio of mortgage obligation to household income.

or interest rate hikes for those highly indebted households who are considered to be in a financially fragile state. Jappelli, Pagano and Di Maggio (2008) test this idea for a number of countries by evaluating institutional factors such as, the extent of creditor rights, the effectiveness of judicial enforcement and information sharing amongst credit providers. These aspects impact the contracting environment and the penalty associated with default. Their financial fragility hypothesis is as follows: in countries with poor contracting environment and low enforcement, arrears are sensitive to indebtedness and unemployment. The authors evaluated the determinants of household arrears using panel data for 11 EU countries and the results confirm their hypothesis. Their cross country analysis indicates that institutional variables are indeed powerful determinants of debt and default. Additionally, time series evidence for the US and Germany indicate that insolvencies increase (decrease) after pro-debtor (pro-creditor) reforms.

vi.   Household Portfolio

A concern is often that household debt should be evaluated in light of household net wealth which takes into account both the assets and liabilities of the household, as only then can households' financial burden be properly evaluated. Brown and Taylor (2008) use household level survey data for Germany, Great Britain and the USA to analyse the determinants of financial assets and debt. The results for the bivariate tobit specification show that on average financial assets increases monotonically with age, is higher for employed household heads and heads who report good health over the past year; debt and assets are lowest for the bottom income quartile, lower for non-white heads while it is higher for married heads and larger households; debt increases with income quartile and is lower for male headed households; and the number of children in the household is associated with lower financial assets. Brown and Taylor (2008) go on to estimate the logarithm of net worth using quantile regression analysis and the results show a positive relationship with age and income; while having an employed head, the number of children and being non-white has a significant positive effect for the top net worth quartile. Lastly, the authors note that considerations of the debt to income ratio, savings to income ratio and the mortgage income gearing measure suggests that the poorest and youngest

households are potentially the most unprotected to adverse changes in their financial position, as they appear to be the least financially liquid.

vii.   General Descriptive Findings

Girouard, Kennedy and André (2006), evaluate the rise in debt for a number of OECD economies by way of descriptive analysis based on developments in the household balance sheet. The authors conclude that household debt has risen to historical levels due to favourable financial conditions, a buoyant housing market which offers capital gains and easier access to credit for lower income household due to innovative financial products and reduced financial constraints for first-time home buyers. These broad trend are similar to that observations within the South African credit market following financial liberalisation. There are a number of aspects according to the authors that have impacted aggregate debt service ratio. Firstly, the composition of those holding high debt service ratio has changed, as younger individuals are becoming home owners earlier and down-payments are not as substantial as once was required, thus monthly obligations have become more significant at a younger age. Secondly, loan terms have been prolonged thereby lowering monthly repayments. Thirdly, housing equity withdrawals increase debt service burden unless used to pay off more expensive credit. Lastly, refinancing allows home owners to take advantage of lower interest rates. The use of household level surveys by Girouard, Kennedy and André (2006) provide results consistent with the Life Cycle theory, namely the proportion of indebted households are greatest amongst young households or middle age groups.

3.3 South Africa

Hurwitz and Luiz (2007:108) notes that after the democratic transition a larger proportion of households were able to borrow as private households experienced an increase in their wealth and previously under-served markets characterised by low incomes and lack of

creditworthy track record have become more of a focal point. New credit products were developed from various lenders targeting this previously under-served market, the outcome being a dramatic rise in debt relating to numerous credit types. One such example is the rapid growth in consumer debt following the introduction of the micro-lending market brought about by legislation. Daniels (2004) notes that South Africa had one of the fasters growing financial sectors between 1990 and 1999 and ranked second on the list of countries with the highest indicator of financial depth. Daniels thus evaluated the significant growth in the micro-credit sector in light of the fact that South Africa has a large informal sector, significant income inequality and a relatively larger proportion of poorer households. Daniels finds that poorer households shifted from informal sector borrowing to formal micro-credit borrowing as it became readily accessible and that the majority of lending by micro-credit institutions was to the consumer sector. Daniels shows further that between 1995 and 2000, the indebted population grew and it did so within each income category implying financial sector deepening and especially so for the lower income categories, this is understandable given that micro-loans were primarily geared toward low to mid-income households. Ardington *et al.* (2004:12) attributes the phenomenal growth in the micro-lending market to retail store credit and the small loans industry.

Bond (2015:225) provides statistics to illustrate the developments of credit use within the household sector. He notes that consumer debt was a major component in Gross Domestic Product (GDP) growth rate of 5% during most of the 2000s; that the household debt to disposable income ratio grew from 50 to 80 percent from 2005 to 2008; and that non-performing loans for credit cards and home mortgages rose by 80 and 100 percent, respectively, from 2006 to 2007. Bond also notes that after the real estate market peaked, there was a shift in lending as expected to unsecured credit. The statistics reveal the significance of consumer spending backed by consumer credit as a contributor to GDP performance; it also reveals the fall-out from the rapid growth of household debt in the form of an increasing number of loan defaults; and lastly it reveals the shifts in lending practices regarding credit types. This puts into contrast the transformative objectives of the government and the reality of increased household vulnerability.

Although the statistics highlighted by Bond (2015) indicate significant shifts within the credit market leading up to the global financial crisis, asset accumulation and appreciation kept the households' balance sheet in a fairly robust condition, notwithstanding increased levels of indebtedness. In the period following the global financial crisis, growth in consumption spending driven predominantly by credit weakened before contracting in 2009, as income growth prospects by households deteriorated. At the onset of the global financial crisis household debt ratio was at record levels and as the negative effects of the crisis started to spill over into the South African economy asset values declined and high debt servicing costs damaged the financial position of households in an economy characterised by weak labour market prospects.

The source of credit, the utilisation thereof and interest rates according to Ardington *et al.* (2004:3) are important considerations in determining the vulnerability of households. The authors concede that while access to credit assists households to smooth consumption, thereby reducing vulnerability, it may also be a source of vulnerability if it leads households to incur additional financial obligation that is unaffordable. It is thus important to assess access to credit and examine expenditure patterns thereof. Poorer households may have lower absolute levels of debt yet have proportionally higher debt servicing costs given low levels of household income as compared to middle and high income households. This in part is due to the cost of credit associated with different credit sources and credit types. Ardington *et al.* (2004:26) expresses that poorer households who do not have access to formal financial services but only the small loan gained from informal credit providers or family may need to make sacrifices. These sacrifices could be in the form of reduced expenditure on health and education and potentially at times going without food. This reduction in human capital investment ultimately leads to a reduction in the capacity of the household to improve upon its financial position in the medium to long term.

Okurut (2006) evaluates access to credit using 1995 and 2000 Income and Expenditure survey data where he splits the credit market into formal, semi-formal and informal credit markets[10] and he evaluates the bottom 40 percent of all households in terms of income.

---

[10] Formal credit market includes mortgage finance and loans from commercial banks; semi-formal credit market includes consumption credit to finance household assets such as furniture and retail accounts; and informal credit market includes loans from friends and family.

The author estimated the likelihood of access to credit and his findings showed that the poor and Blacks have limited access to formal and semi-formal financial markets. Okurut found that access to formal credit by poor households is constrained, firstly at the institutional level due to business costs associated with assessing the creditworthiness of small borrowers, who in turn provide low returns to lenders if such credit is granted. And secondly, at the household level given the absence of collateral of low income households, which is considered by formal lenders during their screening process. Poorer households are thus rationed out of the formal credit market leading them to access credit from informal credit providers in order to meet borrowing needs.

For those highly indebted households that do not have access to formal credit, informal credit sources act as a benefit and a burden; the benefit being that a need is served given small incomes and the burden relates to the notion that often these credit types are more expensive and the terms and conditions attached are not transparent (Collins 2008:478). Collins limits his analysis to poor households with earnings below R2000 per month and he too splits the credit market into formal and informal sources[11]. This study is distinct from others as it uses detailed income and expenditure data that had been collected in diary form over a 13-month period. The main finding is that indebtedness is positively correlated with income in urban, whereas indebtedness in rural areas is observed across the income distribution. Another finding which is expected, is that over-indebtedness[12] is attributed to informal credit in rural areas and to formal credit in urban areas.

An interesting finding drawn from a survey conducted by Hurwitz and Luiz (2007:119) relates to the reason for borrowing funds among urban working class breadwinners and it was found that among the top 5 reasons for borrowing either from the bank or micro-lender was the repayment of other debts or accounts. Another concerning notion mentioned by Prinsloo (2000:23), is that the younger generation are increasingly more concerned with portraying their wealth through an outward display of their status, image and material possessions. While Cronje and Roux (2010:25) add that the Black middle

---

[11] As Collin defines it, formal credit sources include: loans, accounts, store cards, debts under administration and wage advance; while informal credit sources include: loan from mashionisa/ loan sharks, one-on-one loans, stokvel loans and credit from the local spaza shop.
[12] Collins defines over-indebted household to be households with a ratio of monthly debt servicing payment to gross monthly income in excess of 20%.

class has gained economic significance during the 2000s and that with its growth it has driven consumer spending through the use of debt, thereby leading to a culture of debt rather than savings. Needless to say the sustainability of household indebtedness is in question when new debt is used to pay off existing debt or when one chooses to live a lifestyle beyond one's means.

The next step is to discuss research papers that evaluate credit over a period including the years following the 2007/2008 global financial crisis and the implementation of the NCA. With this in mind Chipeta and Mbululu (2012) determined the impact of these two events on domestic credit extension and categories thereof, in so doing they used time series data sourced from SARB for the period 01 January 2005 to 30 September 2010. The authors descriptive results suggested that the implementation of the Act did not lead to a structural shift in any of the credit categories. The empirical results indicated that the global financial crisis had a significant negative effect on all credit categories but for mortgage finance and in the period prior to full implementation of the Act[13], total credit extension increased, which was led by increased extension relating to credit cards, bank overdrafts and other conventional loans.

Aregbeshola (2014) evaluates the effect of the NCA on credit consumption and ultimately on economic growth for the period Q4-2007 to Q3-2012. The results show a strong relationship between increasing credit consumption and economic growth. Despite the recessionary period, unsecured credit had grown since 2009 while secured credit had contracted. This is explained by the shift in credit providers' lending practices and potentially indicates a rising bubble in unsecured credit.

Moroke, Mukuddem-Peterson and Peterson (2014) use a Vector Error Correction Approach (VECM) in their analysis of household debt, for the period Q1-1990 to Q1-2013. The independent variables (in natural log form) included: house prices, consumption prices, household income, interest rate, GDP, household consumption, household savings, household exchange rates and unemployment. A multivariate econometric

---

[13] The National Credit Act was promulgated on 01 June 2005 and became operational on 01 June 2007.

method using the Johansen cointegration and the Toda-Yamamato causality testing approach to estimate direct long and short run relationships was employed. All point estimates accorded with the theory except for the coefficient on consumer prices, though the results over-estimated their contribution to household debt, thus an ECM of 13.8 percent per quarter was calculated to correct for short run dynamics. Thereafter the ECM results indicated that all variables except for household consumption, GDP and exchange rate was associated with household debt in the short run. Also household consumption and savings had the most significant negative effect in the long run. The Toda-Yamamoto Granger causality test was used and this showed that there was a unidirectional causal relationship from GDP, exchange rate and unemployment rate to household debt; with the remaining variables having a feedback relationship.

Chapter Four: Descriptive Analysis

4.1 Data

As the global financial crisis occurred in 2007/2008 and the NCA became fully enforceable as from June 2007, it must be re-iterated that the intention of the ongoing analysis is not to decompose the effect of either or both events on household debt measures. Instead the discussion will be grounded on the developments and determinants relating to household debt measures following these events, based on NIDS data collected in 2008 and 2012.

In exploring the prevalence of indebtedness in South Africa at the individual and household level the researcher uses the first and latest wave of released data sourced from NIDS. NIDS is a panel study conducted by the Southern Africa Labour and Development Research Unit (SALDRU) and to date three waves of data have been collected and released thus far (Wave 1: 2008, Wave 2: 2010/2011 & Wave 3: 2012).

NIDS is the first nationally representative panel study, it is rich in nature as it contains a vast amount of data on income and expenditure at the individual and household level, thereby allowing for in-depth analysis of household wellbeing. All data analysis is conducted using Stata version 14 and versions 5.3 of Wave 1 and 1.3 of Wave 3 of the NIDS datasets are being used and treated separately as cross sectional datasets.

Each wave of NIDS contains data collected from a set of four questionnaires that includes: an Adult questionnaire; a Child questionnaire; a Proxy questionnaire; and a Household questionnaire[14]. The debt data that is of interest is drawn from the Adult and Household questionnaires. Within the Adult questionnaire there is a section covering personal ownership and debt which contains questions on various types of debt. Each adult respondent within the household was asked if they owe on a particular debt type and upon answering in the affirmative they are asked what payment they have made towards that debt type in the last 30 days. Thereafter the respondent is asked for the total outstanding amount associated with that debt type.

It must be said that while some respondents confirmed being indebted to some debt type there were instances when the payment made in the last 30 days was reported as zero, indicating no payment despite the existence of a financial obligation. There were also instances when those who identified themselves as positively indebted failed to provide information on either or both the amount paid in the last 30 days and total outstanding debt, however it must be noted that the missing data on total outstanding debt exceeded that on payment made in the last 30 days[15]. Given these data limitations, the current analysis focuses on actual debt payment made as reported by respondents. While analysis of this sort does not directly lead to objective findings pertaining to household financial distress or over-indebtedness given that the true debt burden based on debt servicing obligation may not be properly ascertained, it does indicate the level of payments that households are able to make. Evaluating reported debt servicing in the last

---

[14]As per NIDS Wave 3 User Manual, the Adult questionnaire applies to persons 15+; the Child questionnaire applies to persons 0-14 years; the Proxy questionnaire applies to adults not available for interview and is to be answered by a household member 18+, the Household questionnaire is to be answered by the oldest woman in the household and/or another household member who is knowledgeable about the living arrangements and spending patterns of the household.
[15] Missing data/non-response for total outstanding debt exceeds that of payment made in the last 30 days due to recall bias as it is easier for the respondent to recall monthly payments than keeping in mind a running balance of debt owed.

30 days may be preferable as it avoids the complications relating to the term structure of debt and the determination of the principal and interest portion of debt payments.

Two forms of debt are analysed within this paper, namely total debt which includes the sum of all the various debt types; and consumer debt which includes all debt types except for mortgage debt. Individuals who are indebted in terms of total debt and consumer debt account for 15.4 and 14.95 percent of the sample in Wave 3 (2012), respectively. With regard to Wave 1 (2008) the corresponding figures are larger at 30.76 and 29.4 percent, respectively. The sub-sample of indebted individuals are small and few households are indebted in terms of mortgage debt only[16]. As such the results for total and consumer debt are similar to an extent, to this end the descriptive results relating to total debt is reported within this Chapter while that of consumer debt is displayed within the Appendix. Before turning to the descriptive analysis on household debt, it serves of interest to look at some of the distinguishing characteristics between debtors and non-debtors at the individual level.

4.2 Individual Level Analysis: Debtors versus Non-Debtors

Indebted individuals are such a small proportion of the overall sample making it worthwhile to look at some of the distinguishing characteristics between debtors and non-debtors.

For instance, in Table 1 below which pertains to Wave 3 (2012) data on total debt, regular monthly income on average for debtors is significantly higher than for non-debtors where the components that make up regular monthly income at the individual level include: labour market income, government grant income, other government income, investment income and remittance income[17]. This is to be expected as one of the major factors that

---

[16] For Wave 3 the number of households with mortgage debt only equates to 108, while for Wave 1 the number is 99.

[17] As per NIDS Wave 3 User Manual, regular monthly income consist of the following: labour market income – main and second job, casual wages, self-employment income, 13th cheque, bonus payment, profit share, extra piece-rate income; government grant income – state old age pension, disability grant, child support grant, foster care grant, care dependency grant; other government income– unemployment insurance fund, workmen's compensation; investment income – interest/dividend income, rental income, private pension and annuities; remittance income; other income - inheritance, retrenchment, lobola, gift, loan repayments and sale of household assets.

credit providers consider in determining if credit is affordable is regular income. Debtors are on average four years older than their non-debtor counterparts, this could suggest that out of the individuals who apply for credit more mature individuals are successful in the process as they are better positioned to take on credit given affordability considerations.

Table 1: Differences between Debtors and Non-Debtors for Total Debt Payment

Co-Variates	Mean (standard deviation)			
	Wave 3 - 2012		Wave 1 - 2008	
	Non-Debtors	Debtors	Non-Debtors	Debtors
Monthly Income	1806.83	5588.98*	1440.84	5784.75*
Age	36.69	40.46*	36.94	41.43*
Education	8.45	11.66*	7.68	11.56*
Married (=1 if yes)	0.28	0.47*	0.33	0.56*
English (=1 if yes)	0.03	0.05*	0.04	0.10*
Life Satisfaction: scale (1 - 10)	4.84	5.61*	5.32	6.09*

* indicates significant difference between non-debtors and debtors at the 5% level

Debtors also tend to be more educated having on average attained a Grade 11 education versus non-debtors who attained a Grade 8 education. This finding aligns with expectation as the more highly educated one is, the better one's employment prospects and higher one's earning power. This supports the positive relationship often found between income and debt levels for positively indebted individuals. The dummy variable, 'Married' indicates relationship status, where 'Married' is classified as those individuals who are married or living together with a partners, while the alternative is classified as being single, a widow(er), divorced or separated and never having been married. The results indicate that debtors are on average more likely to be 'Married', with this result being stronger in 2008. The statistical significant difference between debtors and non-debtors for monthly income, age, education and married variables are more pronounced for Wave 1 (2008) data, potentially indicating a change in the profile of debtors over the four-year period.

With regard to the English variable debtors are more inclined to speak English at home than non-debtors, however the values are quite low across the board indicating the disproportionate presence of Black South Africans whose preferred language is not the

English language. The last variable is Life Satisfaction which is measured on a scale, where 1 indicates very dissatisfied and 10 indicates very satisfied. Debtors indicate a satisfaction level slightly above neutral and non-debtors experience on average a satisfaction level just below the neutral in the year 2012, where neutral means neither strong feelings of satisfaction or dissatisfaction. The same sized gap in subjective wellbeing is present between debtors and non-debtors in 2008, however on average life satisfaction is above neutral for both groups indicating that 2008 was perceived by respondents as a more positive year than 2012. This is understandable in light of the slow recovery following the global financial crisis and economic recession. All variables show statistical significant difference between debtors and non-debtors at the 5% level for total debt across both waves of NIDS data thereby validating that these two groups are indeed distinguishable based on the chosen characteristics.

The results hold and remain significant for consumer debt as can be seen within Table A of the Appendix. However, the values for debtors and non-debtors is less on average for monthly income, age and education variables. This is evidence of a differing debt profile between positively indebted individuals who hold mortgages and those that do not. Mortgage finance is a component of total debt and is substantial in nature, along with it comes stricter requirements which need to be met in order to qualify for such credit extension.

Table 1 above is disaggregated to provide a racial overview of the differences between debtors and non-debtors and this can be seen in Table 2 below. The same finding holds for monthly income, however there is a noticeable difference between average income levels between Blacks and Coloureds on the one hand and Indians/Asians (hereafter referred to as Indians) and Whites on the other hand for both 2012 and 2008. The latter pair tend to have substantially higher average incomes, with Whites having the highest values on average. Whereas the former pair have approximately the same average income values. In terms of age, the significance difference found previously is attributed to differences between debtors and non-debtors for Blacks and Coloureds only. The age result for Indians is contrary to what is observed for other race groups, this is probably due to the small number of indebted Indians found within the sample, 61 in 2012 and 59

in 2008, respectively. Education has the same pattern across racial categories as that observed for the variable monthly income, namely debtors are statistically distinct from non-debtors and education on average increase from Blacks and Coloureds to Indians and a further increase in the average is observed from Indian to Whites.

Table 2: Differences between Debtors and Non-Debtors for Total Debt Payment, by Race

| | Wave 3 - 2012 | | | | | | | |
| | Black | | Coloured | | Indian | | White | |
Co-Variates	Non-Debtors	Debtors	Non-Debtors	Debtors	Non-Debtors	Debtors	Non-Debtors	Debtors
Monthly Income	1615.07	4393.05*	1904.04	4093.31*	2822.91	14580.04*	7395.45	22614.90*
Age	35.77	39.52*	37.60	41.83*	41.28	37.70	47.92	48.52
Education	8.22	11.47*	8.53	10.47*	10.44	14.89*	13.52	16.56*
Married	0.25	0.42*	0.38	0.57*	0.49	0.74*	0.63	0.69
English	0.00	0.00	0.06	0.07	0.99	0.98	0.31	0.25
Life Satisfaction	4.57	5.11*	6.18	6.88*	6.93	7.72*	6.90	7.28*
	Wave 1 - 2008							
Monthly Income	1093.26	3604.18*	1335.77	3804.08*	4295.05	8805.92	7249.10	15503.33
Age	36.23	39.82*	37.99	41.95*	39.92	37.58	47.02	47.41
Education	7.38	10.71*	7.72	10.24*	10.04	14.73*	13.02	15.68*
Married	0.30	0.49*	0.43	0.64*	0.53	0.69*	0.60	0.74*
English	0.00	0.01*	0.09	0.12*	0.98	0.97	0.34	0.29
Life Satisfaction	5.00	5.58*	6.64	6.70	6.70	6.80	6.93	7.21*

* indicates significant difference between non-debtors and debtors at the 5% level

In terms of the life satisfaction variable there is a significant difference for all racial groups in 2012, again with an upward trend from Blacks to Whites. This upward trend is also seen in 2008, however the difference between debtors and non-debtors in terms of life satisfaction is significant for Blacks and Whites only. Blacks are less satisfied on average in 2012 than in 2008, again this is the driving force behind the aggregate result found in Table 1. As conveyed by Burns (2009:4), persistent socio-economic inequalities tend to be highly correlated with race, hence it is expected to a degree that satisfaction levels differ by race before further dissection of the data on the basis of indebtedness occurs. The only non-significant variable across all racial groups for 2012 is that indicating preference of the English language, this result holds for Indians and Whites in 2008. In 2012, use of the English language is not likely to have had an effect on whether an individual is indebted. However, four years prior Black and Coloured individuals who

prefer using the English language may have accessed credit more easily, especially in the formal financial sector and thus those minor differences in averages attributed to language among debtor and non-debtors for these race groups are found to be significant. The results on the differences between debtors and non-debtors by race for consumer debt is found within Table B in the Appendix. The results are similar, with few immaterial points of departure.

The last set of distinguishing characteristics between debtors and non-debtors evaluated relate to the sources of household income as listed in Table 3 below. Once again two distinguishable pairs appear. Firstly, between Blacks and Coloureds and secondly, between Indians and Whites as far as labour market income is concerned, with the former pair obtaining lower average incomes than the latter pair. Differences between debtors and non-debtors for each race group is statistically significantly when it comes to labour market income, understandably so as credit providers are more inclined to lend to those with stable incomes derived from employment. Those without employment who earn little from alternative sources often have insufficient assets to provide as collateral. They are therefore deemed to be riskier in terms of the potential to default on loans, this lessens credit providers' willingness to extend credit to these individuals.

The same trend is observed for investment income as is for labour income, although the only significant difference occurred for Blacks in both periods and Whites in 2008. Government grant income differs significantly between debtors and non-debtors for Blacks and Coloureds only, this is understandable given that these race groups on average are more reliant on this source of income as a component of total income. Remittance income is significantly different between debtors and non-debtors for both Blacks and Whites in 2012 and only Blacks in 2008. There were only 11 and 12 observations relating to remittance income by White debtors and non-debtors respectively in 2012, thus a few large amounts received in the form of remittance income led to the result of significant difference for this race group. As expected the three most substantial sources of income are the same across racial groups, that being labour market income, other income and investment income. Reviewing the results gives one a sense of the reliance on different income sources by the different racial groups.

Table 3: Differences between Debtors and Non-Debtors for Total Debt Payment, by Income Source

	Wave 3 - 2012							
	Black		Coloured		Indian		White	
Sources of Income	Non-Debtors	Debtors	Non-Debtors	Debtors	Non-Debtors	Debtors	Non-Debtors	Debtors
Labour Market	2295.75	5085.54*	2410.82	4355.78*	4300.17	12971.78*	8782.36	14378.07*
Government Grant	810.11	859.61*	824.86	933.76*	1091.25	1187.50	1490.00	1262.50
Other Government	1268.38	1894.63	1033.57	3466.67	n/a	n/a	n/a	n/a
Investment	1842.17	2947.43*	1631.69	2472.24	2668.89	33233.33	7112.33	9910.05
Remittance	1092.39	1645.39*	1061.81	833.22	2390.00	8550.00	915.65	3763.46*
Other	8766.27	4218.06	6025.59	1976.41	n/a	n/a	9974.00	1.6e+05
	Wave 1 - 2008							
	Black		Coloured		Indians		White	
Sources of Income	Non-Debtors	Debtors	Non-Debtors	Debtors	Non-Debtors	Debtors	Non-Debtors	Debtors
Labour Market	1343.32	4071.94*	1501.85	4361.13*	4943.22	8471.99*	5655.97	10536.40*
Government Grant	603.65	633.10	581.07	756.71*	623.82	650.00	559.72	1535.65*
Other Government	1162.36	1159.42	894.11	1357.00	n/a	n/a	915.00	3000.00
Investment	920.83	1633.14*	1370.82	2544.23	3739.04	3773.66	4124.87	5788.52*
Remittance	844.91	1184.40*	571.74	950.68*	1867.45	1366.67	2719.15	11933.61
Other	5003.30	1604.58	13390.07	365.00	63533.33	1635.00	69551.3	86065.86

* indicates significant difference between non-debtors and debtors at the 5% level; n/a implies that there are no observations to determine average value

Once again, the results hold for consumer debt with one exception which relates to the finding of no statistical significant difference for Indian debtors and non-debtors for both 2012 and 2008 in terms of labour market income. This can be seen from table C within the Appendix.

The three tables above looked at characteristics that distinguished debtors from non-debtors. We limit the next set of descriptive statistics to those that are positively indebted, with an evaluation on debt servicing within the last 30 days as a share of income taking place at the household level. Data on eleven types of debt have been collected from the Adult Questionnaire, they include: bond/mortgage debt, personal loans from banks, personal loans from micro-lenders, loans from loan sharks, study loans from the bank, study loans from other institution, vehicle finance, credit card debt, store card debt, debt in terms of hire purchase agreements and debt owed to family or friends.

In order to conduct analysis at the household level, individual debt data for the various debt types was aggregated. The household questionnaire collected data on mortgage debt only; this mortgage debt data was used in the calculation of total debt as opposed to the mortgage debt data obtained from the Adult questionnaire. The reason for this came down to the concern that more than one adult within the household may have reported mortgage debt, given the possibility of duplication it was preferred to use the one figure reported in the household questionnaire.

4.3 Household Level Analysis

While debt analysis at the individual level is informative a better sense of social welfare is gained from an analysis at the household level. For instance, an individual may be highly indebted, however if he/she lives in a household with multiple other household members who work and earn an income or receive income from other sources and thereby assist in meeting monthly financial obligation, then the financial situation is not as strained as what it initially seemed to be. Evaluating the servicing of household debt in light of household income is one way to get clarity on how households manage their collective financial responsibilities[18]. Household monthly income is an existing derived variable within the datasets, it is net of taxes with an implied/imputed rental income added onto it for owner-occupied housing. The researcher excluded implied rental income from the calculation of regular monthly household income and also excluded implied rental expenditure from household expenditure as it does not constitute a cash flow.

The analysis that follows in this Chapter in part is set out similar to the comparative static analysis approach displayed in the paper by Daniels (2001), who evaluates consumer indebtedness among urban South African households by way of a descriptive overview using the Income and Expenditure Survey of 1995 and an adjusted dataset on income and expenditure compiled by Wefa Southern Africa for 1999. Daniels differentiates between and evaluates various indicators of indebtedness based on total outstanding

---

[18] There is a caveat in interpreting the ongoing results as the derived household income variable includes income data from the Proxy dataset, however no information on debt was captured in Proxy questionnaire thus household level debt may be under-reported.

debt for positively indebted urban households, he further evaluates cash flow at the national level and details consumption and debt schedules. The main differences between Daniels' analysis and the current analysis relates to the source of data used, the time period, the debt variable being analysed and that the ongoing analysis is applicable to all positively indebted households. In addition, Chapter five of this paper goes further by specifying an econometric model of household debt servicing for both total and consumer debt. The intention first is to analyse the share of regular monthly income that services debt by various household characteristics and to evaluate the composition of consumption and debt and changes thereto from 2008 to 2012.

Tables 4 and 5 below lists two main debt measures, namely debt servicing as a share of regular monthly income (D/YRD: column 1) and debt servicing as a share of monthly expenditure (D/C: column 4). Alongside those measures a recalculated measure excluding mortgage debt is displayed (D/YRD less housing: column 2 and D/C less housing: column 5) and the difference in average share of income servicing debt and average share of income servicing debt less housing is also displayed (Difference 1-2: column 3 and Difference 4-5: column 6). These measures are determined for a number of household characteristics including: income, race, gender, age, education, settlement type and provincial location. Household income is split into deciles and the demographic variables relate to that of the household head.

i.   Descriptive Results for NIDS Wave 3: 2012

Debt measures by household characteristics for 2012 is listed in Table 4 below. The most eye-catching result is the share of income towards debt servicing for the lowest income decile which is substantially high at 96.34 while the reverse is true for the highest income decile with a share of 20.59. High income households may have large absolute levels of debt and substantial monthly obligations affordable due to their sizeable incomes, however the relative share of income towards debt servicing is far less especially in contrast to income groups at the lower end of the distribution. For middle income groups the share of income to debt servicing ranges between 21 and 29, with no noticeable trend.

Table 4: Total Debt Measures by Household Characteristics for 2012

NIDS - WAVE 3 - 2012: Total Debt							
Columns:		1	2	3	4	5	6
Co-Variate		(D/YRD) %	(D/YRD) less housing %	Difference 1-2 %	(D/C) %	(D/C) less housing %	Difference 4-5 %
INCOME DECILES	1: 0 - 10	96,34	92,70	3,64	43,76	43,13	0,63
	2: 10 - 20	26,05	25,86	0,19	32,12	31,90	0,22
	3: 20 - 30	25,57	23,67	1,90	28,07	27,38	0,69
	4: 30 - 40	27,49	22,73	4,76	37,30	36,23	1,07
	5: 40 - 50	27,53	27,01	0,52	49,72	49,33	0,39
	6: 50 - 60	23,01	19,82	3,19	36,85	35,08	1,77
	7: 60 - 70	21,34	18,66	2,68	36,43	34,37	2,06
	8: 70 - 80	28,89	23,53	5,36	55,36	51,92	3,44
	9: 80 - 90	25,66	21,09	4,57	40,64	35,47	5,17
	10: 90 - 100	20,59	13,50	7,09	34,99	26,53	8,46
RACE	Black	35,87	33,00	2,87	44,13	42,42	1,71
	Coloured	20,36	17,62	2,74	26,74	24,02	2,72
	Indian	25,18	14,10	11,08	21,32	14,68	6,64
	White	23,73	14,01	9,72	24,35	15,82	8,53
SEX	Male	34,38	30,77	3,61	43,64	40,92	2,72
	Female	30,66	27,44	3,22	36,42	34,30	2,12
AGE CATEGORIES	15 - 24	64,30	63,53	0,77	32,89	34,88	3,37
	25 - 34	34,77	32,37	2,40	45,98	45,82	0,20
	35 - 44	34,60	30,36	4,24	40,30	29,69	0,96
	45 - 54	26,32	22,29	4,03	35,78	33,02	2,76
	55 - 64	30,78	27,84	2,94	43,74	41,85	1,89
	65 - 74	20,78	19,87	0,91	38,10	37,80	0,30
	75 & Older	16,56	16,56	0,00	29,94	29,94	0,00
EDUCATIONAL CATEGORIES	No Schooling	21,70	21,46	0,24	38,60	38,39	0,21
	Pre-Primary	24,09	23,81	0,28	37,72	37,17	0,55
	Primary	27,82	26,68	1,14	45,96	45,20	0,76
	Secondary	36,75	32,93	3,82	38,58	36,16	2,42
	Post High School	30,17	23,74	6,43	36,65	31,96	4,69
	Degree	29,90	22,54	7,36	35,45	24,82	10,63
	Higher Degree	24,98	18,37	6,61	34,36	27,75	6,61
URBAN/ RURAL	Urban	35,67	31,13	4,54	38,25	34,88	3,37
	Traditional	26,01	25,20	0,81	46,02	45,82	0,20
	Farm	23,70	21,81	1,89	30,65	29,69	0,96
PROVINCES	Western Cape	33,20	29,89	3,31	27,28	24,36	2,92
	Eastern Cape	39,43	34,30	5,13	40,15	38,29	1,86
	Northern Cape	29,28	26,02	3,26	42,30	39,82	2,48
	Free State	37,72	35,67	2,05	54,43	52,54	1,89
	KwaZulu-Natal	29,85	26,89	2,96	50,44	49,01	1,43
	North West	31,13	29,73	1,40	38,71	37,36	1,35
	Gauteng	38,05	31,97	6,08	37,28	32,77	4,51
	Mpumalanga	22,13	20,18	1,95	30,33	28,43	1,90
	Limpopo	20,07	19,46	0,61	32,88	32,11	0,77

Source: Own Calculations from NIDS Wave 3 Data

The result for the lowest income decile is extremely high and concerning as it suggests that these households dissave to supplement expenditure given that an extremely high share of household income goes towards satisfying existing debt commitments. For these particular households, if new borrowing assists them in meeting current debt obligations then in all likelihood they are stuck in a debt trap.[19]

In terms of the racial breakdown, it is noted that Black headed households use a much larger proportion of their income to satisfy debt obligation, in excess of 10 percentage points more than any other racial group. This is to be expected as Black indebted households on average have lower incomes and any debt obligation in the presence of limited resources will entail a greater sacrifice of household income. Males on average spend approximately 3.7 percentage points more of their income on debt payments amounting to just over a third of net household monthly income.

Turning to age, age bands of 10 years were chosen and this started from 15 years of age since this is the age from which data on adults were collected. The results indicate that households with very young household heads between ages 15 to 24 pay a hefty portion of regular household monthly income toward debt obligation amounting to 64.3 percent. There is a substantial drop of nearly 30 percentage points from the lowest to second lowest age group and following this there is a general downward trend in debt servicing as a share of income which is expected.

The education variables have been grouped as follows: no schooling; pre-primary (grades 1 - 2), primary (grades 3 - 7), secondary (grades 8 - 12), post-secondary (certificates and diplomas), degree (bachelor's degree, bachelor's degree and diploma and honours degree) and higher degree (masters and doctorate). The share of income servicing debt on average increases from no schooling to secondary schooling with a disproportionate

---

[19] The data indicate that household debt exceed household income for 39 households in the lowest income decile, furthermore for 4 of these households, debt servicing exceeds regular monthly income by 10 fold. Without these 39 households, debt servicing as a share of income falls to 26.59. These odd observations may be due to misreporting by the respondent or capturing error, however as there is no certainty in this regard all data is assumed to be valid.

jump from primary to secondary schooling, thereafter there is a downward trend and another disproportionate jump occurs from secondary to post secondary schooling and then from degree to higher degree. Educational achievements act as flags to formal credit providers indicating ability to service different forms and sizes of credit.

If one was to assume that monthly debt payment closely followed monthly debt obligation, then the result for those that have no schooling may be explained by the notion that these households have less access to credit given that no schooling is associated with low income and is an indicator to the credit provider of a riskier client. This makes it harder for those with low incomes and low levels of education to benefit from the use of credit, thus limiting debt obligation and debt payment on a regular basis. The reverse explanation holds for those with degrees and higher degrees, such that debt payment in light of very high incomes earned result in a low share of income going towards debt servicing while those with middle of the range education levels use a higher share of their moderate income levels to satisfy debt commitments. This is the reason for observing higher shares of 36.75 and 30.17 for secondary and post-secondary qualifications, respectively; these groups may not be constrained in their ability to access credit as is the no schooling category, however their debt payment may absorb a larger share of regular household monthly income.

If one looks at settlement type variables, it is observed that there is a greater share of household income satisfying debt obligation in urban locations, on average the share being 35 percent whereas in less formal settings such as farms the share falls to a low of 23.7 percent. Those situated in farming locations may restrain themselves from borrowing or be restricted in terms of access as incomes may be too miniscule to afford debt payments in the first instance.

Recalculating debt measures across various household characteristics when excluding mortgage debt leads to added insight[20]. When assessing the recalculated debt measure

---

[20] It must be noted that figures relating to total debt less housing is not equivalent to consumer debt figures as descriptive statistics relating to consumer debt as calculated by the researcher is based on yet a smaller sub-set of the sample.

across income deciles, one observes that mortgage debt is quite a substantial portion of total debt for the highest income decile, accounting for just over a third of debt servicing as a share of income. This holds true for income deciles 8 and 9, although not to the same extent. As expected debt relating to mortgage loan is substantial in nature due to the significant asset accumulation that occurs in tandem. The bottom two income deciles experience a low share of housing debt relative to total debt servicing which is expected as these income groups are unlikely to qualify and therefore gain housing finance. Amongst the race groups the share of income going to housing debt is over three fold higher for Whites and Indians than for Blacks and Coloureds. In light of household income levels and collateral considerations, Whites and Indians may be more successful on average in accessing mortgage loans from formal lending institutions.

For the youngest category the difference associated with housing debt is 0.77 which is normal as not many household heads falling within this age group would be recipients of mortgage finance. The value pertaining to housing debt as a share of income for the oldest age group is zero, this too is expected given the likelihood that these individuals could no longer satisfy such a significant debt obligation given limited resources at that stage in their lives. A similar explanation holds for the age category 65-74, though given the small difference observed this could relate to a small number of indebted households within this cohort who are nearing the end of their mortgage loan repayments[21]. Age categories 35-44 and 45-54 show the greatest difference attributable to housing debt, credit providers view these household heads as being more stable as a larger proportion are more likely to have a reliable job and a regular household income over and above younger or older age groups.

When reviewing the difference between total debt and total debt less housing for the various educational categories, an upward trend is observed from the lowest to the second highest category. This accords with a priori expectations as those with higher education have a higher monthly income on average and are more prone to be granted mortgage debt. In urban areas housing cost is typically far more expensive and credit is more easily accessible than that in traditional or farm settings. This can be seen in the

---

[21] Indeed 6 households with heads falling between the ages 65-74 are found to have mortgage debt only.

results as the share of income going to housing debt for urban households exceeds that of households situated in farming areas by 2.4 fold and that of traditional households by 5.6 fold, respectively. Share of income to debt serving is generally higher for urban based households and mortgage debt is one of the main contributing factors.

As expected, expenditure is lower in absolute terms for lower income households than higher income households due to the availability of resources or lack thereof. For instance, the expenditure level of the top income decile exceeds that of the lowest income decile on average by 12.6 fold. Household expenditure includes the following categories: food, personal items, transport costs, energy, water and municipal rates, insurance, household items, clothing and shoes, health care, education and miscellaneous items. The household items category includes home maintenance and repairs among other items. In the calculation of household expenditure, the researcher included monthly rental payment and mortgage payment and excluded implied rental expenditure.

Debt servicing as a share of household monthly expenditure tends to give one a sense of the relative financial importance of debt obligation to overall household expenditure. Two households may have similar consumption requirements and therefore expenditure levels, however if one of the households uses credit to fund its consumption then household welfare differs.

When accounting for housing the largest differences are picked up for the top half of the income distribution, indicating the significance of housing debt payment as a share of expenditure for the higher income groups. The results indicate that Blacks on average have the highest debt to expenditure ratio, this is understandable given that their existing debt obligation strains an already tight household budget, while multiple needs have to be met. When it comes to education, debt as a share of expenditure is fairly stable with shares mostly occurring in the high thirties, however this changes when one excludes housing. For the two highest education categories, the proportion of housing debt to overall expenditure is substantial, at 10.63 and 6.61 for degree and higher degree, respectively.

Results relating to debt servicing as a share of income and debt servicing as a share of expenditure in terms of consumer debt for 2012 is displayed in columns 1 and 2 of Table D within the Appendix. As expected there is a noticeable divergence in the shares relating to debt measures for the highest income decile when comparing total and consumer debt as higher income households make use of substantial mortgage debt, while the lowest two income deciles show minimal differences as these groups predominantly used unsecured forms of credit. Both debt measures showed lower figures for Whites, Indians and the highest three educational categories in terms of consumer debt. The differences in total debt less housing found within Table 4 and consumer debt values found within Table D in the Appendix is small, as few positively indebted households have mortgage debt only. This means that there is a significant amount of overlapping occurring in the analysis, thereby resulting in similar output.

ii.   NIDS Wave 1 (2008) Results

Across every income decile but for income decile 3, debt servicing as a share of income in 2008, which can be seen in column 1 of Table 5 below exceeds that in 2012. The difference ranges from 11 to 35 percentage points for income deciles 2 to 10, while the difference for the lowest income decile is 55 percentage points. In relation to the racial breakdown, the results in order of magnitude resemble nothing like what was observed for 2012. Debt servicing as a share of income in descending order for the racial groups starts for Whites at 61.12, followed by African at 50.06, next is Coloureds at 48.63 and lastly Indians at 29.96. The results are more stable when accounting for housing and the order returns to that seen in wave 3, however the figures remain substantially higher.

These higher shares of income going toward debt servicing as indicated by the data is supported by the observed peak in aggregate household sector debt ratio during 2008, which resulted from favourable economic and financial conditions. This is further understood in light of earlier descriptive results relating to the individual, where it was noted that average life satisfaction/subjective wellbeing was higher in 2008 than in 2012, potentially indicating that individuals perceived themselves to be in a better financial position prior to the economic recession.

Table 5: Total Debt Measures by Household Characteristics for 2008

		NIDS - WAVE 1 - 2008: Total Debt					
Columns:		1	2	3	4	5	6
Co-Variate		(D/YRD) %	(D/YRD) less housing %	Difference 1-2 %	(D/C) %	(D/C) less housing %	Difference 4-5 %
INCOME DECILES	1: 0 - 10	151,00	138,10	12,90	33,24	31,91	1,33
	2: 10 - 20	43,73	33,00	10,73	37,05	34,13	2,92
	3: 20 - 30	23,54	22,99	0,55	31,88	31,27	0,61
	4: 30 - 40	32,38	27,77	4,61	31,23	29,27	1,96
	5: 40 - 50	62,88	55,30	7,58	67,50	64,58	2,92
	6: 50 - 60	33,99	29,20	4,79	35,17	31,45	3,72
	7: 60 - 70	31,65	25,44	6,21	42,92	37,95	4,97
	8: 70 - 80	66,43	53,34	13,09	70,84	61,56	9,28
	9: 80 - 90	41,19	27,47	13,72	63,42	55,51	7,91
	10: 90 - 100	44,93	22,32	22,61	46,42	36,17	10,25
RACE	Black	50,06	42,32	7,74	52,95	49,57	3,38
	Coloured	48,63	42,56	6,07	32,80	28,48	4,32
	Indian	29,96	23,11	6,85	25,18	18,28	6,90
	White	61,12	40,38	20,74	36,15	26,80	9,35
SEX	Male	45,25	34,36	10,89	42,53	37,12	5,41
	Female	62,00	54,40	7,60	52,49	49,21	3,28
AGE CATEGORIES	15 - 24	31,08	28,52	2,56	29,01	27,26	1,75
	25 - 34	53,72	44,75	8,97	52,20	47,69	4,51
	35 - 44	41,34	30,70	10,64	46,44	40,36	6,08
	45 - 54	63,33	52,25	11,08	53,93	49,07	4,86
	55 - 64	55,60	41,86	13,74	44,67	41,07	3,60
	65 - 74	78,40	75,53	2,87	39,20	37,50	1,70
	75 & Older	17,53	17,25	0,28	37,37	36,71	0,66
EDUCATIONAL CATEGORIES	No Schooling	37,89	28,47	9,42	35,55	34,72	0,83
	Pre-Primary	55,94	55,81	0,13	86,56	86,04	0,52
	Primary	48,35	43,62	4,73	66,64	64,86	1,78
	Secondary	57,07	48,50	8,57	40,12	35,32	4,80
	Post High School	36,67	28,08	8,59	41,89	33,36	8,53
	Degree	76,43	32,24	44,19	37,23	29,28	7,95
	Higher Degree	64,93	56,50	8,43	56,59	49,65	6,94
URBAN/ RURAL	Urban	54,10	41,38	12,72	46,10	39,93	6,17
	Traditional	39,27	38,43	0,84	42,32	42,13	0,19
	Farm	74,15	69,48	4,67	53,04	51,48	1,56
PROVINCES	Western Cape	38,99	30,86	8,13	33,49	27,95	5,54
	Eastern Cape	49,98	43,32	6,66	34,96	31,74	3,22
	Northern Cape	41,17	38,59	2,58	60,02	57,59	2,43
	Free State	69,26	57,54	11,72	62,91	58,85	4,06
	KwaZulu-Natal	59,46	57,04	2,42	38,23	36,00	2,23
	North West	43,80	27,77	16,03	48,70	45,90	2,80
	Gauteng	39,97	24,70	15,27	36,86	28,35	8,51
	Mpumalanga	70,54	58,66	11,88	66,88	62,35	4,53
	Limpopo	116,30	90,04	26,26	69,38	63,98	5,40

Source: Own Calculations from NIDS Wave 1 Data

In terms of gender there is also a reversal of results in that a greater share of income to debt servicing is attributed to females in 2008 and it is more than twice the share seen in 2012. For most age groups and for every educational category, debt as a share of income for 2008 exceeds that in 2012. Highly educated individuals are presumably more financially literate yet they too get caught up in taking on higher debt obligations in positive economic conditions.

Similarly, the results pertaining to settlement type are reversed and hugely inflated when compared with that in 2012. This may be attributable to the over-optimism associated with the economic environment prior the 2007/2008 global financial crisis. With regard to the provinces some results align between waves and some results couldn't be more different. In 2012 for instance, Limpopo and Mpumalanga had the lowest values, while in 2008 they had the highest values relating to debt measures. The reversal of results probably comes down to changes in the relative size of debt and income for households located in these areas. Gauteng recorded similar debt servicing to income share values for both waves, however in 2008 the share attributable to housing was more than twice that found in 2012. The share of income satisfying housing debt decreased between 2008 and 2012 for most provinces, this is indicative of credit providers changing appetite from secured to unsecured credit following the global financial crisis and implementation of the NCA.

For most income deciles, debt servicing as a share of expenditure is higher in 2008 than in 2012, however the lowest income decile appears to be contributing on average 10 percentage points more in 2012, which could be indicative of increased reliance and use of credit for this group resulting from tougher economic and financial constraints on a small household budget. When it comes to a racial breakdown, the figures more or less align to that observed in 2012, although once again they are slightly higher. In terms of gender, the share of debt to expenditure is higher for females than males by 10 percentage points. Household heads falling in the middle age categories and those heads with pre-primary and primary education commit a significant share of expenditure to debt servicing. In 2008 the share of debt to expenditure for those living in farming areas was substantial, taking on a value in excess of 50.

Consumer debt analysis results for 2008 relating to debt servicing as a share of income and debt servicing as a share of expenditure is displayed in columns 3 and 4 of Table D within the Appendix. Again the results for consumer debt are extremely similar to that of total debt for reasons previously stated.

iii.   Consumption Schedule

The consumption schedule details the proportion of household expenditure devoted to various categories of consumer goods where these categories are made up of various line items[22]. It is essential to analyse debt in light of household expenditure as it informs one about the relevant importance of each consumption category and in the event that household finances are strained it indicates where credit may be directed if successfully sourced. The top half of Table 6 below displays the consumption schedule for 2012, while the bottom half details percentage changes in the consumption schedule between 2008 and 2012.

The two most important expenditure categories for the lowest income decile is food and housing which accounts for just over 60 percent of total household expenditure. This result accords with expectations, as low income households tend to spend the largest share of expenditure on food as it has important implications in terms of wellbeing; while higher income households may spend a significant absolute amount on food, they have the option of considering type and quality thereof. According to Engel's law as income rises the share of income spent on food declines, this indeed is observed within the consumption schedule. Energy, water and municipal rates expenditures where combined with other housing costs. Given the broad make-up of housing costs, it is quite plausible that the lowest income decile spends a similar proportion of expenditure as does higher income deciles on housing costs.

---

[22] The consumption schedule is drawn up on the basis of all positively indebted households with no distinction between total and consumer debt.

Table 6: Consumption Schedule for 2012 and Percent Changes in Consumption from 2008 to 2012

Consumption schedule for 2012 (%)									
	0 – 10	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70	70 - 80	80 - 90	90 - 100
Housing	16,00	14,01	13,82	13,34	13,25	14,80	14,72	16,14	17,51	18,96
Food	45,03	44,28	40,52	39,27	39,28	36,45	33,54	28,20	23,86	17,41
Personal Items	14,54	14,06	14,74	14,35	15,77	15,97	15,23	15,38	14,09	13,66
Clothing	3,83	4,47	6,28	6,94	5,31	5,65	5,86	4,56	4,59	3,69
Furniture	3,10	4,58	5,73	4,67	5,23	4,10	4,89	3,59	4,36	3,29
Health	1,96	1,05	0,89	1,22	1,78	2,56	2,80	4,43	4,94	5,61
Transport	3,23	3,76	4,56	6,64	6,04	7,49	9,55	12,45	13,90	17,97
Education	2,00	2,31	2,43	2,42	2,28	1,52	2,43	2,82	4,17	3,99
Insurance	4,00	4,99	4,85	5,29	5,16	5,63	5,17	6,43	5,90	6,02
Other	6,31	6,48	6,16	5,87	5,90	5,83	5,82	6,01	6,69	9,40
Changes to Consumption Schedule between 2008 and 2012 (percent change)									
Housing	54,59	4,55	12,72	-1,77	-3,43	-1,73	-4,17	-17,65	-11,03	0,90
Food	-14,88	-13,36	-16,86	-4,08	-4,31	-0,92	2,41	2,81	11,08	6,48
Personal Items	78,40	44,95	43,80	39,46	41,56	60,83	44,09	58,39	30,83	12,24
Clothing	11,34	38,82	67,47	31,19	14,69	53,95	31,98	22,25	49,51	4,83
Furniture	-12,43	38,79	18,63	-13,68	49,86	-13,32	15,88	-20,58	1,63	-40,07
Health	20,99	-28,57	-59,17	-49,59	-37,32	-20,00	-39,26	-27,97	-26,71	-30,22
Transport	-35,01	-17,72	-23,75	-10,99	-18,82	-22,54	-16,67	-5,75	-8,73	13,52
Education	-73,54	-59,97	-43,75	-52,64	-59,14	-78,10	-61,73	-21,45	-22,92	-8,49
Insurance	35,59	48,51	32,51	15,25	-0,58	2,74	-5,83	11,63	-1,83	0,00
Other	39,60	57,66	52,85	20,04	19,92	28,70	22,53	-4,75	-8,61	-0,32

Source: Own Calculations from NIDS Wave 1 and Wave 3 Data

Note: As per the NIDS Household Questionnaire, personal item category consists of the following items: cigarettes; alcohol; television, cinema and music entertainment; sport activity and equipment; cosmetics, soap, shampoo and haircuts; jewellery; stationery and leisurely reading material; cellphone account and airtime; telephone account and internet; gambling, holidays excluding transport cost; and ceremonies relating to weddings and funerals.

The share of expenditure on housing shows a slight decline moving from the lowest to mid-income deciles and thereafter there is a steady increase towards the highest income decile. Higher income deciles may experience a higher share of housing costs as the type of dwelling they occupy may be defined as formal dwellings types, thus they are subject to utilities, rates, levies as well as bond payments for those still owing on their home[23]. The data indicate that for the top 2 income deciles home-owners living in formal dwellings

---

[23] Formal dwelling is classified within this paper as: house made of brick structure, flat or apartment, town/cluster/semi-detached house, unit in retirement village, dwelling/house/flat in back yard; and informal dwelling is classified as shacks, traditional dwelling structures/huts.

account for over 80 percent of the sub-sample while home-owners of formal dwellings for income categories falling between the lowest and the 8th income decile range between 43.06 to 61.05 percent. Thus for higher income categories, not only are these related housing expenses higher in absolute terms, there is a greater number of associated costs, both of which require a greater proportion of expenditure relative to home-owners that own their homes outright or renters of informal dwellings. Some households are deemed to be occupied by renters given that none of the household members owns the household; although this may be the case some of these renting households do not actually pay rent. The data illustrates this fact, as for the bottom 5 income deciles 'renters' who do not pay rent range from 11.03 to 19.57 percent of households, whereas for the top 5 income deciles the range is 4.63 to 12.37 percent.

There is a small but steady increase in health care expenditure observed from the third to highest income decile, however a noticeable increase is seen from the 7th to the 8th income decile. This may be the point at which the decision is made to shift from public to private health care. The share of expenditure on transport increases steadily on average from just over 3 percent to almost 18 percent from lower to higher income deciles. This indicates that higher income groups are more likely to purchase their own vehicle and use it as a mode of transport as opposed to using the public transport system which lower income households are accustomed to. As such transport expenses of higher income groups which include vehicle finance and maintenance costs take up a greater share of household expenditure. The top three consumption categories for the highest income decile in descending order is housing, transport and then food. The same top three consumption categories apply to income deciles 8 and 9 though not in the same order. Whereas the top three consumption categories for income deciles 2 to 7 again in descending order is food, personal items and then housing. The order of consumption categories indicates households' priorities in line with household income.

When evaluating the change in consumption schedule from 2008 to 2012 it can be seen that the share of expenditure on housing has declined for most income deciles. This result reflects the downturn in the property market following the financial crisis of 2008. The

share of expenditure on personal items grew across all income deciles, although more so for lower income categories. Health expenditure declined for all income deciles except for the bottom decile and the share of expenditure on education declined for all income deciles, however the negative growth was off a low base. The share of expenditure on transport declined for all income deciles but the highest income group. This result indicates that most income groups cut costs by possibly relying increasingly on public transport, whereas high income households are more financially capable and willing to incur heavier transport costs as it remains affordable and in so doing they are able to maintain a level of comfort or luxury that has become a part of their lifestyle.

iv.   Debt Schedule

The debt schedule in Table 7 below lists the share of debt payment to total debt payment for the various loan types over income deciles. It is clear that mortgage debt is the dominant debt type among higher income deciles, as the share of mortgage debt from total debt reportedly paid in the last month on average increase and peaks at the highest income decile. Another substantial debt type for higher income households is that of credit card debt and vehicle finance, which is not the case for lower income groups. Lower income households are usually not in a position to finance a vehicle and credit providers may be hesitant to issue credit cards to these consumers due to affordability concerns given this type of unsecured credit is more expensive. The most dominant debt type for all income deciles except for the highest is that of store card credit which is substantial as it ranges from 30 to 45 percent of debt servicing across the income distribution. This type of credit enables low income households to finance items that may not have been affordable through a single payment, nonetheless is attainable as it can be paid off over a period of time. Debt associated with hire purchase agreements is also substantial for the bottom half of the income distribution. Hire purchase agreements are used to finance durable goods with an economic lifespan of 3 to 5 years, again the full retail price may not be affordable in terms of a once off payment necessitating the purchase through credit agreement.

The second most popular credit source for the lowest income group is that of loan sharks. These creditor providers are accessed as lower income household are often restricted from accessing credit in the formal credit market and the alternative is more expensive, short term source of credit. Another popular source of credit among lower income households are that of family and friends. In times of need when lower income households cannot access credit from other sources they usually turn to those closest to them. As income increases, the reliance on loan sharks and family and friends as a source of finance diminishes and other sources become more affordable and accessible.

Table 7: Debt Schedule for 2012 and Percent Changes in Debt Schedule from 2008 to 2012

| Debt Schedule for 2012 (%) | | | | | | | | | |
	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70	70 - 80	80 - 90	90 - 100
Bond	2,90	1,35	3,09	3,17	1,47	5,35	5,52	8,98	16,79	27,35
Loan Bank	7,46	14,35	11,23	14,31	22,78	19,43	21,98	22,95	20,03	14,84
Loan Micro-lender	1,27	1,46	1,33	2,56	1,54	0,17	0,95	0,83	1,03	0,30
Loan Shark	20,90	10,30	7,97	7,51	4,79	6,28	1,67	1,51	0,90	0,43
Study Loan	1,58	0,00	0,00	0,87	0,00	0,00	1,04	1,58	0,63	0,38
Vehicle	0,42	0,23	0,88	0,29	1,40	2,67	6,26	10,44	10,82	19,16
Credit Card	3,36	2,35	2,01	1,60	3,89	4,86	6,10	7,80	12,40	17,07
Hire Purchase	15,10	21,47	25,17	23,56	21,19	18,19	13,53	9,04	5,91	2,50
Store Card	33,69	41,93	45,06	40,74	41,50	40,64	40,53	35,80	31,05	17,94
Family & Friends	13,31	6,56	3,27	5,39	1,44	2,41	2,41	1,06	0,42	0,05
Changes to Debt Schedule between 2008 and 2012 (percent change)									
Bond	-47,94	-83,02	-12,71	-44,77	-82,97	-49,58	-57,51	-58,92	-16,09	3,17
Loan Bank	28,18	127,06	51,55	34,87	48,11	65,64	38,85	94,49	94,66	134,07
Loan Micro-lender	-77,16	-33,64	-49,04	19,07	-57,34	-87,77	15,85	-43,15	11,96	15,38
Loan Shark	61,39	7,52	26,51	104,63	20,35	145,31	98,81	160,34	95,65	86,96
Study Loan	187,27	0,00	0,00	20,83	-100,00	-100,00	-60,15	3,27	-53,33	-70,77
Vehicle	-37,31	-77,00	-68,00	-91,59	-60,00	-54,97	-43,96	-30,07	-44,51	-24,45
Credit Card	48,02	-4,86	-47,52	-64,44	-28,23	-44,33	-35,65	-37,20	-36,12	-30,55
Hire Purchase	11,03	38,70	5,62	20,45	50,18	39,71	16,43	65,27	27,92	-8,76
Store Card	-10,18	-7,40	12,45	-4,92	1,02	-2,71	29,49	29,15	41,59	48,88
Family & Friends	-14,02	-32,51	-66,08	-20,03	-53,99	-24,21	-27,63	-52,04	-72,19	-91,80

Source: Own Calculations from NIDS Wave 1 and Wave 3 Data

The relative share of the debt types to total debt suggest a differing debt profile along the income distribution. At the lower end consumption smoothing is predominantly achieved through the use of unsecured credit and at the higher end credit is used to for both consumption purposes and asset accumulation.

The percentage change in debt types over the period 2008 to 2012 is displayed in the bottom half of Table 7. The percent change in mortgage servicing over the period, again suggests that the property market suffered following the global financial crisis which resulted in reduced appetite for high levels of debt. While on average households within each income decile increased their relative payment toward personal loans sourced from banks between 2008 and 2012, the top three income groups showed nearly 100 percent growth in debt servicing on an existing substantial share. There was positive growth in payments made to loan sharks for all income groups, although this was off a very low base except in the case of the three lowest income deciles.

The figures relating to study loan[24] are very high in instances, however their impact on the composition of debt is minimal given its extremely small share of total debt servicing. With regard to vehicle finance, in 2012 the share of debt payment was lower than in 2008 for most income deciles, for the top 5 deciles the negative growth was noteworthy as it brought about a change in debt composition. Growth in credit card debt payment as reported by respondents also declined for all but the lowest income decile also bringing about a substantial change in the debt schedule for the top 5 income deciles. This could be due to consumers increasingly perceiving credit card debt as being costlier and thus using other sources of cheaper finance to fund expenditure such as personal loans from banks for which positive growth was observed. There is also negative growth associated with personal loans from micro-lenders for most income deciles and this is also probably due to preferred use of cheaper credit, as the cost relating to personal loans is cheaper if sourced from banks instead of micro-lenders.

Store card credit takes a significant share of debt servicing across all income deciles, in excess of 30 percent for the bottom 7 income deciles in 2008. Therefore, any growth associated with this debt type causes a significant change in the composition of debt servicing as can be seen in terms of the three lowest and the four highest income deciles. Similarly, hire purchase is also a significant debt type for the bottom 8 income deciles for which positive growth is observed. Growth in terms of loans from family and friends is

---

[24] The researcher combined data on 'study loan with a bank' and 'study loan with an institutions other than a bank' to represent one debt type even though it is captured separately within the questionnaire.

relevant mainly for the bottom end of the income distribution. From 2008 to 2012 on average loans from family and friends declined and was offset by an increase in personal loans from banks, hire purchase agreements and loans from loan sharks.

Chapter Five: Econometric Analysis

5.1 Methodology

The aim in this Chapter is to garner a greater understanding of what factors drive debt servicing at the household level and the extent thereof. Ordinary Least Squares (OLS) and Median Quantile robust estimations are utilised to analyse total and consumer debt separately, in a comparative static approach for the periods 2008 and 2012, thereby extending the analysis from a purely descriptive overview. While OLS regression analysis offers insight based on conditional means, Median Quantile regression provides a good comparison as it is less sensitive to outliers.

5.2 Determinants of Debt Servicing at the Household Level

The outcome variable is the log of monthly household debt payment, again one must remember that the values provided by respondents relate to household debt payment made in the last 30 days and do not necessarily equate to household debt obligation on a monthly basis. The independent variables relating to household characteristics include: household size which is a continuous variable, as household size grows it is expected that household financials face greater strain, which negatively impacts the ability to service debt; house ownership is a dummy variable and a good predictor of monthly debt servicing, owning one's home outright or financing the purchase via home loan suggests some level of financial stability better than households that are classified as 'renters';

formal house structure made of brick is also a dummy variable, if one lives in a formal house versus an informal shack or structure made out of traditional materials, it indicates better living conditions and therefore a household which may be more capable of meeting its financial commitments.

Gender, race, age, education and employment status are characteristics attributable to the head of the household. Female headed households may have lower overall levels of debt and hence lower monthly debt obligations and debt service payments, as their access to credit and the amount of credit they qualify for may be limited relative to their male counterpart. This may be partly explained by the observation that females earn lower average incomes such that higher levels of debt are less affordable, which makes them less attractive to credit providers. The same reasoning holds for Black and Coloured vis-à-vis White South Africans in terms of relative average incomes. With respect to the age categories, unlike with the descriptive statistics where 10-year age intervals were chosen, the regression analysis below includes age categories of 5 year intervals where the 30-34 year age group is chosen as the reference category. This allows for greater scrutiny of the effect of age on debt servicing. It is expected that positively indebted household, where the household head falls between the ages of 30 and 50, which likely corresponds to one's most productive working years, these households should experience debt servicing at greater levels than households where the household head falls in younger or older age bands.

Given that higher education often leads to better employment opportunities hence greater income earnings, it is natural to expect the level of indebtedness to be higher and thus the level of debt servicing to increase as education level increases. Those who attain higher levels of education generally possess a better understanding of how financial markets operate. These individuals typically use credit differently, as they foresee the value that can come from financing the purchase of substantial assets such as housing and vehicles with the aid of credit. The use of credit in this way assists in the growth of wealth, thereby advancing financial wellbeing and assisting in the sustainability of household debt burden. In tough economic conditions indebted individuals with higher

levels of education often know how to prioritise their debt obligation based on the cost of different forms of credit, in this way they are able to satisfy financial obligation in circumstances of reduced resources. The secondary schooling category is used as the reference group among educational dummy variables in the current analysis.

This analysis considers all positively indebted households; thus employment status dummy variables enter the model with the reference group being 'not economically active'[25]. It is expected that households with employed heads would service existing debt to a greater degree than those households with unemployed heads and households with heads not active in the labour force. Most credit providers require payslips in assessing the affordability of credit applied for by consumers, thus unemployment and not being active in the labour market acts as a barrier in accessing credit.

In addition, a set of dummy variables were included indicating what the main source of household income is, with the reference category being 'salary income'. All sources of income for each household member as detailed at the individual level is combined with the biggest overall contributor to household income among the various income sources being classified as the main source of household income. The a-priori expectation is that household income derived mainly from employment should drive debt servicing more so than any other main source of household income such as government grant income, other government income, investment income, and remittance income.

Lastly there is a set of dummy variables to account for differences attributable to household location in terms of provinces and settlement type, where the respective reference groups are Gauteng and rural settlement type. Urban settings are characterised by easier access to various types of credit especially in the formal credit market. The proportions of employed individuals are generally greater in urban areas and this too indicates increased ability to access and re-pay credit.

---

[25] Employment status refers to that of the household head and indicates any type of employment whether it be full-time or part-time labour market employment, self-employment or casual work for which one is paid a salary or wage to work regularly.

5.3 Econometric Results

i. Total Debt Analysis

Table 8 below displays the OLS and Median Quantile robust regression output for 2008 (columns 3 and 4, respectively) and 2012 (columns 1 and 2, respectively). Across both types of estimations for both periods the following variables are found to be positively correlated with the log of households' total debt payment: household size; being a home-owner; living in a formal house made of a brick structure; having a post-secondary qualification, or degree, or higher degree; being employed; and living in urban areas[26]. Those variables found to be negatively correlated to the outcome variable across estimations and periods include: being female; being Black or Coloured; having no schooling or primary schooling; being unemployed; having the main source of income be government grant income or remittance income.

A few common occurrences are observed across the OLS and Median Quantile Regression output for 2008 and 2012. There is a dampening of the negative effect associated with: being female, suggesting a narrowing of the gender gap in terms of debt servicing; being Black or Coloured, indicating that the racial differences associated with debt servicing has declined although still remains negative for these groups vis-à-vis their White counterparts; having no schooling or only primary level schooling, indicating that no education and low levels of education are not as strong a barrier as it once was due to increased credit access and take-up by these groups; and having the main source of income be investment income. There is a strengthening of the negative effect associated with the main source of income being government grant income. Household heads earning salaries/wages as their main source of income are increasingly better positioned to service debt relative to households whose main component of income is sourced from the government.

---

[26] With regard to the independent dummy variables, the estimation result must be interpreted in relation to their respective reference group, see table 8 for ease of reference.

Table 8: OLS and Median Quantile Robust Regression Output for Total Debt Payment, 2012 & 2008

Total Debt Analysis		Wave 3: 2012				Wave 1: 2008			
	Columns:	1		2		3		4	
Independent Variables		OLS		Median Quantile		OLS		Median Quantile	
Household Characteristics	Household Size	0.046***	(0.010)	0.043***	(0.008)	0.046***	(0.013)	0.059***	(0.012)
	House Ownership	0.302***	(0.056)	0.349***	(0.058)	0.400***	(0.068)	0.407***	(0.067)
	Brick Structure	0.454***	(0.066)	0.316***	(0.058)	0.377***	(0.082)	0.311***	(0.067)
Gender (Ref: Male)	Female	-0.180***	(0.049)	-0.211***	(0.048)	-0.246***	(0.063)	-0.306***	(0.051)
Race (Ref: White)	Black	-0.576***	(0.122)	-0.843***	(0.116)	-1.019***	(0.116)	-1.045***	(0.094)
	Coloured	-0.678***	(0.128)	-0.730***	(0.114)	-1.059***	(0.128)	-1.008***	(0.122)
	Indian	0.286	(0.233)	-0.085	(0.192)	-0.642***	(0.248)	-0.685*	(0.406)
Age Categories (Ref: 30-34)	15-19	-0.459	(0.303)	-0.540**	(0.272)	-1.080***	(0.204)	-0.733	(0.567)
	20-24	0.030	(0.124)	0.038	(0.106)	-0.609***	(0.205)	-0.540***	(0.174)
	25-29	-0.283***	(0.101)	-0.287**	(0.133)	-0.188	(0.139)	-0.340**	(0.147)
	35-39	0.010	(0.095)	0.134	(0.105)	-0.146	(0.128)	-0.165	(0.144)
	40-44	0.097	(0.098)	0.085	(0.097)	0.040	(0.127)	0.009	(0.142)
	45-49	0.158	(0.096)	0.229**	(0.098)	-0.186	(0.135)	-0.178	(0.157)
	50-54	0.067	(0.103)	0.104	(0.114)	0.078	(0.140)	0.083	(0.145)
	55-59	0.119	(0.111)	0.078	(0.113)	0.058	(0.150)	0.136	(0.143)
	60-64	0.088	(0.110)	0.074	(0.096)	-0.338**	(0.150)	-0.318	(0.173)
	65-69	0.003	(0.139)	-0.000	(0.098)	-0.009	(0.182)	0.109*	(0.228)
	70-74	0.072	(0.173)	0.135	(0.183)	-0.177	(0.196)	-0.123	(0.195)
	75-79	-0.371*	(0.208)	-0.341	(0.220)	0.322	(0.225)	0.323	(0.226)
	80-84	0.096	(0.279)	0.097	(0.109)	-0.628*	(0.342)	-0.330	(0.537)
	85+	0.269	(0.432)	0.046	(0.243)	-1.373**	(0.691)	-1.61	(2.100)
Educational Category (Ref: Secondary Schooling)	No Schooling	-0.277***	(0.089)	-0.220**	(0.103)	-0.367***	(0.106)	-0.357***	(0.101)
	Pre-Primary	-0.133	(0.141)	0.038	(0.078)	-0.291	(0.221)	-0.516*	(0.278)
	Primary	-0.300***	(0.067)	-0.261***	(0.066)	-0.483***	(0.087)	-0.498***	(0.075)
	Post-Secondary	0.384***	(0.081)	0.498***	(0.092)	0.424***	(0.091)	0.611***	(0.091)
	Degree	1.058***	(0.116)	1.400***	(0.106)	1.245***	(0.128)	1.234***	(0.079)
	Higher Degree	1.126***	(0.332)	1.456***	(0.413)	1.211***	(0.188)	1.355***	(0.086)
Employment Status (Ref: Not Economically Active)	Unemployed	-0.099	(0.097)	-0.153*	(0.083)	-0.071	(0.135)	-0.160*	(0.086)
	Employed	0.159**	(0.073)	0.170***	(0.063)	0.227**	(0.101)	0.242***	(0.088)
Main Income Source (Ref: Salary Income)	Government Grant	-0.642***	(0.067)	-0.628***	(0.050)	-0.612***	(0.094)	-0.488***	(0.075)
	Other Government	-0.106	(0.284)	-0.168	(0.159)	-0.060	(0.447)	-0.273	(0.279)
	Investment	-0.163	(0.179)	-0.245	(0.291)	-0.977***	(0.241)	-0.870***	(0.136)
	Remittance	-0.578***	(0.140)	-0.721***	(0.219)	-0.626***	(0.181)	-0.680***	(0.165)
Provinces (Ref: Gauteng)	Western Cape	-0.079	(0.100)	-0.173*	(0.100)	-0.059	(0.121)	-0.056	(0.098)
	Eastern Cape	-0.148	(0.102)	-0.098	(0.091)	-0.031	(0.124)	0.026	(0.126)
	Northern Cape	0.079	(0.108)	0.036	(0.142)	0.066	(0.131)	-0.029	(0.101)
	Free-State	-0.127	(0.095)	0.087	(0.114)	0.199	(0.127)	0.271**	(0.129)
	Kwa-Zulu Natal	-0.099	(0.088)	-0.083	(0.088)	0.042	(0.108)	0.072	(0.092)
	North West	-0.083	(0.112)	-0.040	(0.162)	0.125	(0.133)	0.011	(0.128)
	Mpumalanga	-0.099	(0.104)	-0.020	(0.137)	0.217*	(0.120)	0.221**	(0.088)
	Limpopo	-0.234*	(0.113)	-0.090	(0.127)	0.271	(0.200)	0.258**	(0.112)
Settlement Type	Urban	0.181***	(0.061)	0.141***	(0.055)	0.328***	(0.226)	0.354***	(0.066)
Constant		6.484***	(0.188)	6.774***	(0.177)	6.644***	(0.226)	6.592***	(0.219)
N		2418		2418		1740		1740	
R-squared		0.2582		0.1625		0.3663		0.2535	

Note: *p-value<0.1, **p-value<0.05, ***p-value<0.01; standard errors in brackets to the right of point estimates; dependent variable is the log of households' total debt payment

Additionally, there is a dampening of the positive effect associated with: house ownership, potentially indicating increased extension of credit despite collateral considerations, this is validated by the observed shift in credit providers' appetite from secured to unsecured debt in recent years; having post-secondary education, this particular educational category is one level above the reference group and suggests that it is no longer as strong a distinguishing characteristic as it once was; urban settlement type, this may be due to increased penetration into rural areas by lending institutions or increased use of informal credit providers by rural residents; and being employed. Then there is a strengthening of the positive impact associated with house structure made of brick, formal house structure may have become more indicative of credit affordability and thus debt servicing as it speaks to living conditions and lifestyle.

ii.   Consumer Debt Analysis

The outcome variable under this analysis is the log of households' consumer debt payment and the regression results appear in Table 9 below. Across estimations for both periods the variables positively correlated to the outcome variable include: household size; being a home-owner; having a formal house made of a brick structure; educational categories falling above secondary schooling; being employed; and located in an urban area. Those variables negatively correlated to the outcome variable include: being female, having no schooling or primary schooling, having the households' main source of income be government grant income or investment income.

Unlike under the total debt analysis, being Black is negatively associated with debt servicing vis-à-vis Whites for 2008 only. From 2008 to 2012 the statistically significant negative association for Blacks in terms of debt servicing has disappeared despite persistent differences with regard to average income levels between race groups. Additionally, the negative coefficient for Coloureds is significant for all estimations but the Median Quantile estimation for 2012 and the magnitude of the negative coefficients have reduced drastically, indicating weaker racial differences regarding debt servicing for this group vis-à-vis Whites.

Table 9: OLS and Median Quantile Robust Regression Output for Consumer Debt Payment, 2012 & 2008

Consumer Debt Analysis		Wave 3: 2012				Wave 1: 2008			
Independent Variables		OLS		Median Quantile		OLS		Median Quantile	
Household Characteristics	Household Size	0.051***	(0.010)	0.049***	(0.009)	0.049***	(0.013)	0.057***	(0.012)
	House Ownership	0.125**	(0.055)	0.144**	(0.057)	0.120*	(0.068)	0.172**	(0.068)
	Brick Structure	0.356***	(0.064)	0.218***	(0.064)	0.305***	(0.082)	0.291***	(0.070)
Gender (Ref: Male)	Female	-0.194***	(0.049)	-0.199***	(0.055)	-0.222***	(0.062)	-0.255***	(0.056)
Race (Ref: White)	Black	-0.178	(0.129)	-0.247	(0.164)	-0.753***	(0.117)	-0.808***	(0.122)
	Coloured	-0.361***	(0.136)	-0.247	(0.166)	0.833***	(0.133)	-0.748***	(0.147)
	Indian	0.458*	(0.252)	0.419**	(0.178)	-0.528**	(0.236)	-0.735**	(0.334)
Age Categories (Ref: 30-34)	15-19	-0.609**	(0.302)	-0.632	(0.448)	-0.920***	(0.258)	-0.779	(0.509)
	20-24	0.034	(0.127)	0.061	(0.154)	-0.350	(0.217)	-0.632***	(0.232)
	25-29	-0.248**	(0.101)	-0.265**	(0.131)	-0.046	(0.137)	-0.199	(0.126)
	35-39	-0.020	(0.095)	0.120	(0.118)	-0.014	(0.125)	-0.180	(0.141)
	40-44	0.094	(0.098)	0.108	(0.119)	0.161	(0.123)	0.014	(0.127)
	45-49	0.166*	(0.097)	0.210*	(0.108)	-0.041	(0.133)	-0.042	(0.131)
	50-54	0.078	(0.103)	0.112	(0.118)	0.236*	(0.138)	0.132	(0.136)
	55-59	0.145	(0.111)	0.149	(0.120)	0.256*	(0.147)	0.218	(0.135)
	60-64	0.143	(0.112)	0.156	(0.126)	-0.088	(0.150)	-0.106	(0.195)
	65-69	0.107	(0.139)	0.101	(0.125)	0.211	(0.183)	0.230	(0.201)
	70-74	0.204	(0.172)	0.248	(0.183)	0.115	(0.201)	0.090	(0.248)
	75-79	-0.226	(0.204)	-0.094	(0.210)	0.558**	(0.223)	0.535***	(0.182)
	80-84	0.192	(0.290)	0.116	(0.306)	-0.351	(0.346)	-0.245	(0.227)
	85+	0.310	(0.435)	0.118	(0.175)	-1.082	(0.663)	-1.099	(1.108)
Educational Category (Ref: Secondary Schooling)	No Schooling	-0.304***	(0.088)	-0.206**	(0.091)	-0.414***	(0.105)	-0.367***	(0.096)
	Pre-Primary	-0.140	(0.139)	0.125	(0.091)	-0.301	(0.212)	-0.398	(0.308)
	Primary	-0.271***	(0.067)	-0.174**	(0.072)	-0.481***	(0.086)	-0.434***	(0.074)
	Post-Secondary	0.346***	(0.080)	0.459***	(0.093)	0.384***	(0.091)	0.582***	(0.102)
	Degree	0.928***	(0.124)	1.259***	(0.148)	1.132***	(0.115)	1.234***	(0.097)
	Higher Degree	1.301***	(0.345)	1.214	(0.801)	1.318***	(0.211)	1.429***	(0.247)
Employment Status (Ref: Not Economically Active)	Unemployed	-0.123	(0.051)	-0.130	(0.087)	0.011	(0.132)	-0.071	(0.109)
	Employed	0.163**	(0.072)	0.214***	(0.072)	0.172*	(0.100)	0.197**	(0.090)
Main Income Source (Ref: Salary Income)	Government Grant	-0.585***	(0.066)	-0.526***	(0.065)	-0.559***	(0.093)	-0.460***	(0.082)
	Other Government	-0.116	(0.292)	-0.147	(0.108)	0.125	(0.459)	-0.076	(0.506)
	Investment	0.044	(0.191)	0.035	(0.279)	-0.855***	(0.256)	-0.801***	(0.194)
	Remittance	-0.494***	(0.140)	-0.642***	(0.218)	-0.660***	(0.183)	-0.662***	(0.181)
Provinces (Ref: Gauteng)	Western Cape	0.087	(0.100)	0.010	(0.124)	0.030	(0.123)	-0.098	(0.135)
	Eastern Cape	-0.044	(0.101)	-0.027	(0.101)	0.139	(0.122)	0.107	(0.136)
	Northern Cape	0.228**	(0.111)	0.182	(0.146)	0.228*	(0.133)	0.071	(0.115)
	Free-State	0.097	(0.097)	0.171	(0.124)	0.321**	(0.127)	0.245*	(0.133)
	Kwa-Zulu Natal	0.007	(0.086)	-0.042	(0.106)	0.151	(0.104)	0.163	(0.102)
	North West	0.045	(0.110)	0.105	(0.141)	0.272**	(0.131)	0.191	(0.122)
	Mpumalanga	-0.001	(0.102)	0.089	(0.152)	0.314***	(0.118)	0.306***	(0.094)
	Limpopo	-0.124	(0.120)	0.044	(0.129)	0.218	(0.188)	0.375***	(0.142)
Settlement Type	Urban	0.131**	(0.059)	0.133**	(0.062)	0.213***	(0.074)	0.259***	(0.067)
Constant		6.132***	(0.189)	6.150***	(0.226)	6.400***	(0.225)	6.363***	(0.223)
N		2325		2325		1740		1740	
R-squared		0.2043		0.1231		0.3008		0.2053	

Note: *p-value<0.1, **p-value<0.05, ***p-value<0.01; standard errors in brackets to the right of point estimates; dependent variable is the log of households' consumer debt payment

There are also common trends between estimations from one period to the next for consumer debt. There is a dampening of the negative effect associated with being female; having no schooling or primary schooling; and having the main source of income be remittance income. There is a strengthening of the negative effect associated with the main source of income being government grant income; and the age group 25-29 though this result was only significant for 2012. There is a dampening of the positive effect associated with post-secondary and higher degree educational categories; and urban settlement type. One variable had a statistically significant negative point estimate in 2008 that became a statistically significant positive point estimate in 2012, which was the Indian dummy variable. Cautious interpretation of this result is necessary given the small number of Indians within the sub-sample.

iii.   Total Debt versus Consumer Debt

House ownership has a stronger positive impact under total debt analysis, this finding is expected as mortgage debt is the most substantial debt type in terms of loan size and in turn monthly payment obligation. Thus with the absence of mortgage debt under consumer debt analysis the variable indicating house ownership is not as strong a predictor of debt servicing, however it still remains statistically significant.

When it comes to race groups, Black and Coloured household heads all else being equal pay less in terms of debt servicing than their White counterparts, however the relative difference is less for consumer debt than total debt. A similar finding holds for female headed households vis-à-vis their male counterparts. This is expected as it is easier for Black, Coloured, and female headed households based on income and collateral considerations to acquire consumer debt and therefore fall more so under consumer debt analysis as opposed to total debt analysis which includes mortgage debt as a component. It follows that easier access to consumer debt leads to increased obligation and debt servicing payments.

The no schooling variable has a stronger negative effect and the higher degree variable has a stronger positive effect in terms of consumer debt; while primary schooling has a stronger negative effect and post-secondary has a stronger positive effect in terms of total debt. Being an employed household head shows a greater statistically significant positive effect in 2008 than in 2012 for total debt. The reverse is found in the case of consumer debt. This seems to support the shift from secured to unsecured credit extension observed in recent years and the respective shift in debt servicing obligations and repayments for employed household heads vis-à-vis heads that are not economically active. All main sources of income relative to its reference group, which is salary/wage income, show a stronger negative effect on household debt servicing for total debt. This is understandable as household income derived from the employment of the household head should be one of the main driving factors in determining whether mortgage debt is affordable given the size of the loan, term of the loan and loss of a substantial asset should regular debt obligations not be met.

Lastly, point estimates on the urban variable have a stronger positive impact for total debt servicing. Households in urban areas are typically higher in value than those in rural settings accounting for the size of the house and plot of land, that being said urban based households under the total debt analysis would naturally have larger monthly debt commitments hence larger monthly debt payments, all else being equal.

Chapter Six: Summary and Recommendations

6.1 Summary

There are many strands of theory and empirical results which inform household borrowing behaviour. The aggregate demand and business cycle theory suggests that the households' leveraged position increases (decreases) in times of optimism (pessimism) in light of relaxed (tighter) attitudes toward credit, which leads to an increase (decrease)

in household debt to income ratio, this in turn impacts aggregate demand. Optimistic expectations have been shown to influence both the level and growth of debt. Then there is the notion that the use of credit has over time become more acceptable due to changing perceptions and social norms; this along with institutional changes, such as financial deregulation leads to increased levels of indebtedness. A review of literature on the risk of default suggest inflows into unemployment, past payment problems and a high loan to value ratio increase the probability of default for secured debt. Also, income and proxies for income lower the probability of default for secure and unsecured debt, while the probability of default for unsecured debt increases as the number of people within the household who contribute to household income increases. This is found in some economies which are characterised as having high levels of income inequality, such that a large proportion of households have small household income levels that barely covers household needs. These are a few ways in which consumption theory has been extended in an attempt to explain borrowing behaviour.

In the context of South Africa, a major consequence following financial market deregulation in the 1980s was the rapid accumulation of debt by the household sector. During the 2000s the growth in spending was driven by consumer credit, from 2005 to 2008 the ratio of household debt to disposable income grew by 60 percent, while non-performing loans in terms of credit cards grew by 80 percent and that for mortgages grew by 100 percent. Economic events such as the 2007/2008 global financial crisis dampened households' appetite for credit and resulted in a decline in household debt ratio from record levels. At the same time legislative improvements such as the promulgation and implementation of the NCA affected credit extension by setting forth several consumer protection measures aiming to bring about a balance of powers between consumers and credit providers. This research paper evaluates household debt measures using the first and latest released waves of NIDS data relating to the years 2008 and 2012, respectively. This allows one to comment on the developments regarding debt servicing as a share of income and to analyse the determinants of debt servicing at the household level.

The descriptive statistics relating to total debt data for 2012 show that low income and urban households as well as Black and male headed households have a higher share of

household income servicing debt. The share associated with age declines as age increases and while an upward trend in the share is seen from the lowest to mid-educational category, where it peaks at the secondary schooling category thereafter a downward trend is observed. When a recalculation of the debt measures is performed to determine the difference in income share to debt servicing attributable to housing debt the following is noted: the difference increases from the mid to top income decile; an upward trend in the difference is observed for educational categories; the difference is most prominent for middle age groups; and the difference attributable to whites is three-fold that of Blacks and Coloureds.

Statistics drawn from the consumption schedule accord with expectations, however there was a reduction in the share of expenditure relating to housing, health and transport costs for most income deciles over the period. In terms of the debt schedule, housing debt, store card credit, vehicle finance, credit card debt and personal loans from banks are the top five debt types for higher income households. Whereas store card credit, debt relating to hire purchase agreements, personal loans from banks, loans from loan sharks and loans from family and friends dominates the debt schedule for lower income households. There was a noticeable increase in personal loans from banks and debt relating to hire purchase agreements for all income deciles, this was offset by the decline in housing debt, credit card debt and loans from micro-lenders. For the top five income deciles decreases in vehicle and credit card debt servicing and increases in store card debt servicing brought about a substantial change in the composition of the debt schedule between the periods.

As expected the regression output for the log of households' total debt payment accords with a-priori expectations. Household size, house ownership, formal house made of brick structure, educational categories above secondary schooling, being employed, and living in urban areas are positively correlated with the outcome variable. While being female, being Black or Coloured, educational categories below secondary schooling is negatively correlated with the outcome variable. Both the OLS and Median Quantile regression output for 2012 and 2008 data show a dampening of the negative effect associated with being female, being Black or Coloured, having no schooling or primary schooling; and a strengthening of the positive impact associated with having a formal house structure made

of brick. There is also a dampening of the positive effect associated with house ownership, post-secondary education, being employed and urban settlement variables and a strengthening of the negative effect associated with government grant income. Most of the independent variables under the consumer debt analysis have the same relationship to its outcome variable as found under the total debt analysis. Similarly, under consumer debt analysis from 2008 to 2012, as per estimation results a narrowing of the gender gap associated with debt servicing has been observed; lower levels of education are less of a barrier and higher levels of education have a smaller positive impact on debt servicing; and the positive association of being located in an urban setting has also diminished. All these results suggest that consumer debt is more readily available to and taken-up by a wider range of individuals and households.

The economic outlook following the poor economic performance of 2015 is not encouraging. There is increased probability of further interest rate hikes to subdue higher inflation levels, which has been driven mainly by a weaker currency. This in turn increases the living costs in the form of higher mortgage payments, increased food expenditure and increased cost relating to other necessary household expenditure. Basically an already tight household budget is further restricted. After the global financial crisis credit use initially declined, however in recent years the statistics have shown increases in the number of credit active consumers and also an increased reliance on credit to fund consumption goods rather than loans conducive to productive or investment initiatives. This suggests a deterioration in the credit health of households which will persist for some time. South Africa has one of the lowest savings rates among developing economies[27] and with the increased reliance on credit by more consumers and the obligations which arise therefrom households' financial wellbeing remains a critical focus point.

---

[27] Gray-Parker (2015) refers to 2015 FSB savings statistics within the budget and savings feature, such that South Africa's savings rate is 15.4% of GDP, while that of China, India, Brazil and Australia is approximately 50%, 30%, 25% and 22.5%, respectively.

6.2 Recommendations

NIDS Wave 4 data has been collected during the course of 2015 and is due for release mid-2016, with it added insight and a more current view may be gained regarding credit use and debt servicing within South Africa.

A better grasp of household financial wellbeing may be gained if the NIDS Adult and Household questionnaires could be extended to include additional debt related questions to be asked at every wave on aspects including: whether debt payment was in arrears and the extent thereof; what the financial debt commitment was in the last 30 days[28]; what credit is used for when it is unclear in terms of the label attributed to the debt type; respondents attitude toward debt use; and questions to gauge their level of financial literacy. The additional data could inform consumer spending behaviour and assist in the assessment of over-indebtedness across the income distribution. As NIDS is a panel dataset, one could also track whether households' debt position is temporary or persistent.

---

[28] As mentioned debt payment made may not equate to monthly financial obligation attached to various debt types.

References

Alfaro, R. and Gallardo, N., 2012. "The determinants of household debt default". *Revista de Análisis Económico*, Vol. 27, No. 1, pp. 55-70.

Ardé, A., 2015. "Proposal to cut cost of credit is not good enough, critics say". *Weekend Argus Personal Finance*, 4-6 July, p.10.

Ardé, A., 2015. "Simpler way to calculate interest on credit would help financially illiterate". *Weekend Argus Personal Finance*, 22-23 August, p. 3.

Ardington, C. Lam, D. Liebbrandt, M. and Levinsohn, J., 2004. "Savings, insurance and debt over the post-apartheid period: A review of recent research, CSSR working paper No.65 pp. 1-37.

Aregbeshola, R.A., 2014. "Financial regulation, credit consumption and economic growth - An analysis of the national credit act in South Africa", *The Journal of Applied Business Research*, Vol. 30, No. 2, pp. 367-378.

Aron, J. and Muellbauer, J., 2000. "Financial liberalisation, consumption and debt in South Africa", Centre for the Study of African Economies, Department of Economics, University of Oxford, pp. 1-47.

Bond, P., 2015. "Contradictors in consumer credit: Innovations in South African super-exploitation", *Critical Arts*, Vol. 29, No. 2, pp. 218- 237.

Brown, S. & Taylor, K., 2008. "Household debt and financial assets: Evidence from Germany, Great Britain and the USA", *Journal of the Royal Statistical Society*, Vol. 171, No. 3, pp. 615-643.

Brown, S. Garino, G. Taylor, K. and Price, S., 2005. "Debt and financial expectation: an individual- and household- level analysis", *Economic Inquiry,* Vol. 43, No. 1, pp. 100-120.

Burns, J., 2009. "Wellbeing & social cohesion: Analysis of the NIDS wave 1 Dataset – discussion paper no. 7", Department of Economics, University of Cape Town, pp. 1-21.

Chipeta, C. & Mbululu, D., 2012. "The effects of the national credit act and the global financial crisis on domestic credit extension: Empirical evidence from South Africa", *Journal of Economic and Financial Sciences*, Vol. 5, No 1, pp. 215-228.

Collins, D., 2008. "Debt and household finance: Evidence from the financial diaries", *Development Southern Africa*, Vol. 25, No 4, pp. 469-479.

Cronje, A. and Roux, I., 2010. "Savings culture for the black middle class in South Africa", *USL Leader's Lab*, Vol. 4, No 2, pp. 22-27.

Crook, J., 2001. "The demand for household debt in the USA: Evidence from the 1995 Survey of Consumer Finance", *Applied Financial Economics*, Vol. 3, No 11, pp. 83-91.

Cynamon, B.Z. and Fazzari, S.M., 2008. "Household debt in the consumer age: Source of growth-risk of collapse", *Capitalism and Society*, Vol. 3, No 2, pp. 1-32.

Daniels, R.C., 2001. Consumer indebtedness among urban South African households: A descriptive overview, Development Policy Research Unit, University of Cape Town, working paper No. 01/55, pp. 1-21.

Daniels, R.C., 2004. "Financial intermediation, regulation and the formal microcredit sector in South Africa", *Development Southern Africa*, Vol. 21, No 5, pp. 831-849.

De Villiers, L., Brown, M., Woolard, I., Daniels, R.C., and Leibbrandt, M., 2013. "National Income Dynamics Study Wave 3 User Manual", Cape Town: *Southern Africa Labour and Development Research Unit*, Viewed 17 April 2014, <http://www.nids.uct.ac.za/documantation/overview-documantation/wave-3>

Dirk, N., 2015a. "Ten million people battling to repay loans", *Cape Times*, viewed 15 September 2015, <https://www.iol.co.za/capetimes/ten-million-people-battling-to-repay-loans-1.1912249.>

Dirk, N., 2015b. "NCR pounces on Capes illegal money lenders", *Cape Times*, viewed 22 September 2015, <https://www.highbeam.com/doc/1G1-428588006.html.>

Girouard, N., Kennedy, M., and André, C., 2006. "Has the rise in debt made households more vulnerable" OECD Economics Department working papers, No. 535, OECD, pp. 1-40.

Goodwin-Groen, R.P., 2006. The National Credit Act and its regulations in the context of access to finance in South Africa", *FinMark Trust*, pp. 1-100.

Gray-Parker, J., 2015. "Budgeting and savings", *Cape Times,* 29 October*,* pp. 17.

Hartley, A., 2015. "Judge strikes a blow for indebted", *Cape Times*, Viewed 16 July 2015, < http://www.iol.co.za/news/crime-courts/judge-strikes-a-blow-for-indebted-1.1882638>

Hull, N., 2003. "Financial deregulation and household indebtedness", Reserve Bank of New Zealand, discussion paper series 2003/01, pp. 1-28.

Hurwitz, I. & Luiz, J., 2007. "Urban working class credit usage and over-Indebtedness in South Africa", *Journal of Southern African Studies*, Vol. 33, No 1, pp. 107-131.

Jappelli, T. Pagano, M. and Di Maggio, M., 2008. "Households' indebtedness and financial fragility", *Journal of Financial Management, Markets and Institutions*, Vol. 1, No 1, pp. 23-46.

Kearney, L., 2015. "Relief for consumers as max interest rate on loans slashed". *Weekend Argus, Personal Finance*, 14-16 November, pp. 1.

Livingstone, S.M. and Lunt, P.K., 1992. "Predicting personal debt and debt repayment: psychological, social and economic determinants". *Journal of Economic Psychology*, Vol. 13, No 1, pp. 111-134.

May, O. and Tudela, M., 2005. "When is mortgage indebtedness a financial burden to British household: A dynamic probit approach, Bank of England, working paper no. 277, pp. 1-43.

Moroke, N.D. Mukuddem-Peterson, J. and Peterson, 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*, Vol. 5, No 7, pp. 107-118.

Okurut, F.N., 2006. "Access to credit by the poor in South Africa: Evidence from household survey data 1995 and 2000", Stellenbosch Economic working papers 13/06, pp. 1-34.

Palley, T.I., 1994. "Debt, aggregate demand, and the business cycle: An analysis in the spirit of Kaldor and Minsky", *Journal of Post Keynesian Economics,* Vol. 16, No 3, pp. 371-390.

Prinsloo, J.W., 2000. "The saving behaviour of the South African economy", Occasional Paper, No 14, South African Reserve Bank, pp. 1-37.

Renke, S. Roestoff, T. and Haupt, P., 2007. "The National Credit Act: New parameters for the granting of credit in South Africa", *Obiter,* Vol. 1, No 2, pp. 229-270.

Renke, S., 2011. "Measures in the South African consumer credit legislation aimed at the prevention of reckless lending and over-indebtedness: An overview against the background of the recent developments in the European Union", *Journal of Contemporary Roman-Dutch Law*, Vol. 2, No 4, pp. 208-229.

Roestoff, M. and Renke, S., 2005. "A fresh start for individual debtors: The role of the South African insolvency and consumer protection legislation", *International Insolvency Review*, Vol. 14, No 2, pp. 93-109.

South African Reserve Bank: *Annual Economic 2006 – 2013 Report (Annual reports document)* 2006, Annual publication document, viewed 20 February 2015, <https://www.resbank.co.za/Publications/Reports/Pages/AnnualEconomicReports.aspx.>

South African Reserve Bank: *Financial stability review 2013 – 2015 Report (Bi-annual reports document)* 2013, Bi-annual publication document, viewed 16 September 2015, <https://www.resbank.co.za/Publications/Reviews/Pages/FinancialStabilityReview.aspx.>

Southern Africa Labour and Development Research Unit. National Income Dynamics Study 2012, Wave 3 [dataset]. Version 1.3. Cape Town: Southern Africa Labour and Development Research Unit [producer], 2015. Cape Town: DataFirst [distributor], 2015

Southern Africa Labour and Development Research Unit. National Income Dynamics Study 2008, Wave 1 [dataset]. Version 5.3. Cape Town: Southern Africa Labour and Development Research Unit [producer], 2015. Cape Town: DataFirst [distributor], 2015

Van den Heerver, J., 2007. "Household debt, interest rates and insolvencies in South Africa", South African Reserve Bank IFC Bulletin, No 26, pp 52-61. Pretoria: South African Reserve Bank.

Walters, S., 2011. "Note on recent developments in the household balance sheet", South African Reserve Bank Quarterly Bulletin, No 12, pp 69-72. Pretoria: South African Reserve Bank.

Appendix

Table A: Differences between Debtors and Non-Debtors for Consumer Debt Payment

	Mean (standard deviation)			
	Wave 3 - 2012		Wave 1 – 2008	
Co-Variates	Non-Debtors	Debtors	Non-Debtors	Debtors
Monthly Income	1889.67	5435.64*	1523.55	5640.38*
Age	36.73	40.33*	37.02	41.15*
Education	8.49	11.58*	7.72	11.52*
Married	0.28	0.46*	0.33	0.55*
English	0.03	0.04*	0.04	0.10*
Life Satisfaction	4.85	5.60*	5.33	6.06*

* indicates significant difference between non-debtors and debtors at the 5% level

Table B: Differences between Debtors and Non-Debtors, by Race for Consumer Debt Payment

Co-Variates	Black Non-Debtors	Debtors	Coloured Non-Debtors	Debtors	Indian Non-Debtors	Debtors	White Non-Debtors	Debtors
Wave 3 - 2012								
Monthly Income	1653.91	4315.19*	1957.65	4030.39*	4343.59	13134.35*	8119.25	23061.28*
Age	35.80	39.41*	37.64	41.81*	41.31	37.02	47.95	48.42
Education	8.24	11.42*	8.55	10.46*	10.81	14.19*	13.63	16.57*
Married	0.26	0.41*	0.39	0.56*	0.51	0.70*	0.63	0.68
English	0.00	0.00	0.06	0.06	0.99	0.98	0.31	0.24
Life Satisfaction	4.57	5.10*	6.18	6.91*	6.91	7.91*	6.94	7.25
Wave 1 - 2008								
Monthly Income	1111.12	3580.36*	1367.74	3789.75*	4681.69	8095.80	8019.42	15437.09
Age	36.26	39.66*	38.11	41.61*	39.91	37.48	47.30	47.07
Education	7.40	10.67*	7.75	10.24*	10.09	14.80*	13.09	15.82*
Married	0.30	0.48*	0.44	0.63*	0.54	0.68	0.61	0.75*
English	0.00	0.01*	0.09	0.12	0.98	0.96	0.34	0.29
Life Satisfaction	5.00	5.58*	6.64	6.68	6.73	6.71	6.99	7.16

* indicates significant difference between non-debtors and debtors at the 5% level

Table C: Differences between Non-Debtors and Debtors for Consumer Debt Payment, by Income Source

	Black		Coloured		Indian		White	
Wave 3 – 2012								
Sources of Income	Non-Debtors	Debtors	Non-Debtors	Debtors	Non-Debtors	Debtors	Non-Debtors	Debtors
Labour Market	2388.16	4999.14*	2506.64	4268.88*	7613.27	10797.00	10075.62	13724.60*
Government Grant	810.12	859.73*	825.83	932.29*	1093.47	1183.33	1485.08	1271.43
Other Government	1268.38	1894.63	1033.57	3466.67	n/a	n/a	n/a	n/a
Investment	1896.20	2882.01*	1631.69	2472.24	3302.00	45350.00*	6908.91	10611.06
Remittance	1091.67	1650.93*	1061.81	833.22	2390.00	8550.00	915.65	3763.46*
Other	8766.27	4218.06	5713.06	2074.94	n/a	n/a	9974.00	1.6e+05
Wave 1 - 2008								
Sources of Income	Non-Debtors	Debtors	Non-Debtors	Debtors	Non-Debtors	Debtors	Non-Debtors	Debtors
Labour Market	1386.22	4043.76*	1555.64	4356.76*	5878.14	7703.58	6038.00	10709.96*
Government Grant	603.78	632.26	582.00	754.06*	623.82	650.00	570.59	1641.35*
Other Government	1151.33	1175.40	894.11	1357.00	n/a	n/a	915.00	3000.00
Investment	937.89	1650.66*	1410.52	2533.57	3739.04	3773.66	4148.43	5934.78*
Remittance	843.71	1197.72*	567.66	973.42*	1867.45	1366.67	2719.15	11933.61
Other	4984.41	1577.75	13390.07	365.00	63533.33	1635.00	72742.78	85649.95

* indicates significant difference between non-debtors and debtors at the 5% level; n/a implies that there are no observations to determine average value

Table D: Consumer Debt Measures for 2012 and 2008

Consumer Debt		WAVE 3 - 2012		WAVE 1 - 2008	
Columns:		1	2	3	4
Co-Variates		(D/YRD)	(D/C)	(D/YRD)	(D/C)
INCOME DECILES	1: 0 - 10	95,75	44,55	145,96	33,72
	2: 10 - 20	26,75	32,98	34,89	36,08
	3: 20 - 30	22,99	27,56	23,51	31,99
	4: 30 - 40	24,10	37,00	28,28	29,81
	5: 40 - 50	27,75	50,35	57,84	67,54
	6: 50 - 60	20,03	35,04	30,61	32,97
	7: 60 - 70	19,89	35,90	26,51	39,55
	8: 70 - 80	24,34	54,26	57,75	66,64
	9: 80 - 90	23,18	39,40	28,62	57,85
	10: 90 - 100	14,73	28,66	23,37	37,87
RACE	Black	33,90	43,57	43,84	51,34
	Coloured	18,69	25,49	44,54	29,81
	Indian	15,96	16,61	24,80	19,62
	White	15,76	17,79	43,39	28,80
SEX	Male	32,08	42,67	36,16	39,06
	Female	28,48	35,60	56,28	50,91
AGE CATEGORIES	15 - 24	65,55	32,91	30,76	29,40
	25 - 34	33,63	45,82	45,82	48,84
	35 - 44	31,70	38,63	31,77	41,77
	45 - 54	23,16	34,31	54,98	51,63
	55 - 64	28,57	42,96	43,96	43,12
	65 - 74	20,18	38,39	77,89	38,67
	75 & Older	16,56	29,94	17,81	38,67
EDUCATIONAL CATEGORIES	No Schooling	21,63	38,69	28,89	35,23
	Pre-Primary	24,23	37,82	55,81	86,04
	Primary	27,40	46,42	45,46	67,89
	Secondary	34,47	37,84	51,26	37,33
	Post High School	24,83	33,42	29,62	35,18
	Degree	23,97	29,80	32,24	29,28
	Higher Degree	21,61	32,64	57,84	50,84
URBAN/ RURAL	Urban	32,90	36,86	43,83	42,30
	Traditional	25,34	46,08	38,70	42,43
	Farm	22,09	30,08	71,45	52,94
PROVINCES	Western Cape	31,53	25,70	32,40	29,35
	Eastern Cape	35,39	39,52	44,89	32,87
	Northern Cape	27,54	42,15	39,64	59,17
	Free State	37,42	55,12	60,60	61,98
	KwaZulu-Natal	27,32	49,81	58,22	36,74
	North West	30,53	38,37	28,16	46,55
	Gauteng	34,23	35,09	26,83	30,80
	Mpumalanga	20,65	29,09	62,17	66,08
	Limpopo	19,46	32,11	93,87	66,71

Source: Own Calculations from NIDS Wave 1 and Wave 3 Data