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WORKING PAPERS

Consumer Indebtedness Among Urban South African Households: A Descriptive Overview

Reza Daniels

No 01/55
ISBN: 0-7992-2090-6

September 2001

Development Policy Research Unit
University of Cape Town

1. Introduction

This working paper evaluates the topic of consumer indebtedness among urban South African households. The theoretical basis of the topic lies within consumption theory, and the empirical exercises are conducted on Part Two of the October Household Survey – the Income and Expenditure Survey (Statistics South Africa, 1995) and an adjusted dataset compiled by Wefa Southern Africa (1999).

The primary objective of the paper is to provide a descriptive overview of urban household indebtedness; consequently, we are concerned only with the basic relationships of consumer theory, namely the composition of income and consumption. As will become evident, this initial methodological simplicity allows us to specify a range of measures that embrace many of the ideas contained in the rich theoretical debate in consumption theory, yet remain independent of their specific associations. Thus, the life-cycle hypothesis (Modigliani and Brumberg, 1955), permanent income hypothesis (Friedman, 1957) – and their critique and development (see Deaton and Muellbauer, 1980; Deaton 1992) – implicitly guide our interpretation of the data. In this regard, we are limited of course by the descriptive nature of the study, and hence the findings in this report are indeed preliminary. The paper thus makes a modest but important applied contribution to our understanding of the microeconomics of consumer behaviour as it pertains to the composition and extent of household indebtedness in South Africa.

The rationale for investigating consumer indebtedness in South Africa stems from the fact that the financial sector has undergone a process of deepening as a result of important regulatory changes to the sector since the early 1990s. In this regard, one of the more significant legislative changes that occurred was the Exemption to the Usury Act in 1992, which removed interest rate ceilings on small loans under R6000.00 with a repayment period of less than thirty-six months. Since then there has been phenomenal growth of the micro-finance industry, providing a good example of how a latent sector was able to develop given a favourable incentive system. The implications for the consumer were greater access to finance through a diverse range of new financial instruments that, in many cases, targeted the poor directly. Consequently, we are interested in assessing whether there were significant increases in indebtedness over this period, and which category of consumers gained or lost in the process.

The rest of this paper proceeds as follows. Firstly, the methodology is discussed, whereafter the limitations with the data are identified. We then proceed to analyse household indebtedness and cashflow levels by income group, race and gender, before turning our attention to household consumption and debt schedules. Lastly, we analyse changes to all of these components over the period 1995 to 1999.

2. Methodology

When analysing household indebtedness, it is important to situate the discussion within the context of the household's other income and expenditure priorities. In doing so we are informed by consumption theory, notably the life cycle-permanent income hypothesis. Non-strictly defined, permanent income is comprised of long-term earnings from employment (e.g. wages and salaries), retirement annuities (or other pension funds), and income derived from the possession of capital assets (interest, dividends). The theory states that the amount of a person's permanent income will determine their permanent consumption plans – e.g. the size and quality of the home they purchase, and thus their long-term expenditure on bond or mortgage repayments.

Transitory income on the other hand comprises short-term temporary overtime payments, bonuses and 'windfall' gains from winnings and inheritance, as well as short-term reductions in income arising from temporary unemployment and illness. Transitory consumption, such as additional holidays, clothing, and so on, will thus depend on any extra income received. However, long-term consumption may also be related to changes in a person's wealth, in particular the value of their house over time. Therefore, the economic significance of the permanent income hypothesis is that the level of consumption may be higher (or lower) in the short-term than that indicated by the level of current disposable income. It is consequently important to treat measures of household cashflow correctly,¹ as we would expect that they would be negative in a static context, but tend towards unity over the course of the life-cycle (assuming no bequest motives or altruism on the part of household members).

However, our analysis must also take into account the prevalence of poverty in South Africa, which when posed within consumption theory, must reflect the behaviour of households that do not possess long-term assets (e.g. housing). In this regard, we are informed by the literature on poverty (see Deaton, 1997), which has shown that poor households often rely on the informal sector, making the significance of transitory income great indeed. Also, poor households ordinarily incur debt to smooth consumption first before using it as a basis for asset accumulation. Add to this the known exclusion of poor individuals from the formal financial sector, which implies that they resort to micro lenders that are known to lend money at higher interest rates, and we could expect that poorer households may not in fact have low indebtedness levels. Therefore, a certain amount of theoretical ambiguity exists in the extent of indebtedness among poor households.

When defining the indicators that will be used in the analysis, it is important that we take cognisance of the differences between the life-cycle hypothesis and permanent income hypothesis in order to allow for the insights that the two provide. Indebtedness variables include:

1. Total outstanding debt as a percentage of total income (denoted Dt/Y);
2. Total outstanding debt as a percentage of total income minus tax (i.e. disposable income) (denoted Dt/YD);
3. Total outstanding debt as a percentage of regular income minus tax (i.e. regular disposable income) (denoted Dt/YRD);
4. Total outstanding debt as a percentage of expenditure (denoted Dt/C).

It should be noted that we use two measures of disposable income in this section: total income minus tax, and regular income minus tax, allowing for the different theoretical interpretations as per the life-cycle and permanent income hypotheses, respectively. Regular income is taken directly from the "Direct Income" variable in the Income and Expenditure Survey (see Statistics South Africa, 1995b). It is derived from the total income variable, which is separated into direct income and indirect income. Direct income is defined as salaries and wages (including bonuses, commissions for Directors fees, and part-time work), net profit from business or professional practices, net income from letting of fixed property, royalties, interest received, dividends received, regular receipts from pensions, disability funds, alimony, and regular allowances received from family living elsewhere. Indirect (or transitory) income is defined as net income from hobbies, income derived from the sale of vehicles or property, payments received from boarders and other members of the household, the value of goods and services received by virtue of your occupation (including housing subsidies, transport subsidies, and pension/provident fund contributions), gratuities, and all other sources of transitory income.

¹ Measures of household cashflow would include total income to total expenditure for example, or disposable income to total expenditure.

The variables for household cashflow reflect the extent to which households are able to match annual income with annual expenditure. We proxy cashflow using five additional variables:

1. Total income as a percentage of total consumption expenditure (denoted Y/C);
2. Total income minus tax (i.e. disposable income) as a percentage of total consumption expenditure (denoted YD/C);
3. Regular income as a percentage of total consumption expenditure (denoted $YDir/C$);
4. Regular (or direct) disposable income (i.e. regular income minus tax) as a percentage of total consumption expenditure (denoted YRD/C);
5. Indirect (or transitory) income as a percentage of total consumption expenditure (denoted YI/C).

The combination of indebtedness and cashflow therefore allows us to create a more nuanced overview of each household's expenditure obligations and financial constraints. The covariates of income group, race of household head and gender of household head will then further disaggregate the analysis.

We then proceed to evaluate changes associated with indebtedness and cashflow between 1995 and 1999. Finally we analyse the proportion of household expenditure devoted to consumer goods on the one hand (which we term consumption schedules), and on the other, the proportion of total outstanding debt devoted to various sub-categories of that debt (which we term debt schedules). The debt schedules evaluate the proportion of total outstanding household debt owed on a bond, car, furniture, overdraft and credit cards, retail, and family loans. This analysis is also extended over the two time points.

Analytically, it is important to note that the 1995 to 1999 period coincides with the process of financial liberalisation initiated in the early 1990s, and thus reflects a critical period in South Africa's history. We would expect that owing to liberalisation, access to debt would have increased over this period, and much of the analysis below attempts to quantify the extent and magnitude of this. It should lastly be noted that because primary expenditure data was collected for 1999, we should pick up the altered behaviour of households with respect to debt owing to the Asian crisis and its positive effects on real interest rates in South Africa. We thus also devote some discussion to this.

3. Data

The data for this study is taken from part two of the October Household Survey (OHS): the Income and Expenditure Survey of households in South Africa (Statistics South Africa, 1995 – hereafter IES95). The IES represented the second part of the OHS, and is consistent with it in every way except in the weighting process. The IES95 surveyed 29,579 households that were randomly selected. For 1999 data, a similar survey is used, based on the IES95 but compiled by Wefa Southern Africa from 1999 income and expenditure data. Wefa used the identical sample of households in the IES95, but then revised the income and expenditure estimates by:

1. Re-weighting the population to reflect mid-1999 population totals;
2. Benchmarking total income earned by households on the 1999 estimate of total income in the national accounts;
3. Benchmarking expenditure on Bureau of Market Research estimates of expenditure by product type (from report no. 261, "Household Expenditure in South Africa by Province, Population Group and Product", 1999).

By comparing the two data sets, we present a comparative static analysis of changes in household indebtedness in South Africa between 1995 and 1999. All computational work is

based on these two surveys, and consequently acknowledgements of the source of 1995 and 1999 information implicitly recognises this.

3.1 Limitations with the Data

The first limitation with the data is that the sections on indebtedness have a considerably smaller sample size than the total IES95 sample. Table 1 presents these differences.

Table 1: Characteristics of the Data

Section	Sample Size (n households)
Total sample size of IES95	29579 (both urban and rural areas)
Defined sample size for indebtedness study	4436 (urban areas only)

The defined sample for this study is all households that are positively indebted in 1995, which intentionally truncates the sample to deal with indebted households only. These households are exclusively located in urban areas, but do not constitute the full urban sample as Statistics South Africa only included some urban households in the indebtedness question. As a consequence of this, we cannot account for survey design features such as stratification, weighting or clustering. Thus, we lose nationally representative results, and incorporate all of the sample selection bias implicit in Statistics South Africa's treatment of this question. This bias is then directly incorporated into the Wefa (1999) dataset, which, because it has revised estimates of several variables inferred upon Stats South Africa's sample, also implies that we cannot estimate nationally representative results. The proceeding empirical analysis therefore refers only to positively indebted selected urban households.

A further limitation with the indebtedness data is that it does not reflect existing assets unaccounted for in the figures for total outstanding debt (i.e. the sunk costs associated with a previous investment in fixed assets). Thus we are only able to evaluate total outstanding debt.

4. Indebtedness

In this section we analyse household indebtedness by income category, race of household head and gender of household head. We separate income into eleven different categories that bias the bottom end of the income distribution in order to give disproportionate emphasis to the poor. In this way, we're able to evaluate behavioural differences across a wider spectrum of households in South Africa.

We can see from Table 2 that the lower income categories have almost no variation across the four measures of indebtedness, while the higher income categories unambiguously display the opposite. This conforms well to intuition concerning income, where, because the lower income categories do not pay tax (or when they do, it is very little in absolute terms) or are often seasonally employed or unemployed, the differences between total income, regular income and disposable income are insignificant.

Table 2: Indebtedness by Income Category, Race and Gender: 1999

Co-Variate	Dt/Y	Dt/YD	Dt/YRD	Dt/C
0-5000	9.87	9.87	11.21	9.56
5001-10000	8.62	8.72	10.00	7.88
10001-15000	10.17	10.51	12.30	9.18
15001-20000	13.11	14.25	17.33	11.83
20001-25000	21.68	25.19	27.74	16.85
25001-30000	21.55	23.44	30.80	18.50
30001-40000	29.73	33.62	44.97	23.65
40001-50000	26.84	31.08	33.16	23.33
50001-75000	41.28	48.36	64.59	37.35
75001-150000	55.63	65.57	81.12	50.16
> 150000	59.39	69.93	101.37	57.82
African	18.03	20.55	28.32	17.54
Coloured	34.32	38.24	43.84	31.79
Indian	60.10	71.42	86.40	53.55
White	66.14	78.04	103.39	58.20
Male	43.90	51.32	67.34	39.87
Female	19.89	22.36	27.92	18.19

The upward trend in debt between the R40K-R50K and the R50K-R75K income groups is instructive of a changing debt profile. Here, housing becomes a significant contributor to debt. However, both owner-occupied and owner-rented housing are special cases as far as debt is concerned, because while it is reflected as debt in the above table (i.e. a liability to the household), it is in fact an ordinarily appreciating asset to the household.

What is also immediately visible from the table is the theory conforming relationship between income and indebtedness; that is, indebtedness increases as income increases. The result is furthermore robust across all four measures of indebtedness, further reinforcing the observation. However, the results are somewhat surprising given the existence of micro-financiers who lend money to lower income groups at exorbitant interest rates, which would imply that the lower end of the income distribution would have greater levels of debt than indicated by the table, contributing towards a degree of ambiguity in the relationship between debt and income. In this regard it should be noted that the data is aggregated and hides the outliers in each income category, so even if this were the case, we would not be able to identify it clearly with this information (we examine some of the outliers in the following section on provincial variation).

However, low levels of debt could perhaps be partly explained by a lack of access to financial instruments in the formal banking sector (including, most importantly, the disproportionately low numbers of group-based lending schemes that target the poor), corroborated by low levels of collateral amongst the poor. To this extent the results suggest that poorer consumers who ordinarily have lower levels of short- and long-term (asset) liquidity, act rationally to reduce their overall debt exposure given the uncertainty surrounding income in the household. This is a profoundly important observation because it suggests that consumers of debt are risk-averse despite asymmetric information on interest rates and different lending schemes.

As far as indebtedness by race is concerned, it is evident from the table that there is indeed a particular racial distribution to indebtedness, with African people experiencing the lowest levels of indebtedness, followed by the Coloured population. The Indian population has the second

highest indebtedness levels, while White people are the most indebted. It is also apparent that there seems to be a very distinct increase between Coloured and Asian people, suggesting that there is an important difference between the group characteristics of Africans and Coloureds on the one hand, and Indians and Whites on the other. If we reflect on the observations of the income group and indebtedness data (above), this information conforms to the trend that lower income groups have on average lower levels of indebtedness. In this regard we know that African and Coloured people are overwhelmingly the most impoverished in South Africa (see Borat 2001), and this is confirmed in the data.

As far as indebtedness by gender is concerned, the table clearly shows that there is a distinct gender distribution to indebtedness, where male-headed households are at least twice as indebted as female-headed households across all four debt variables.

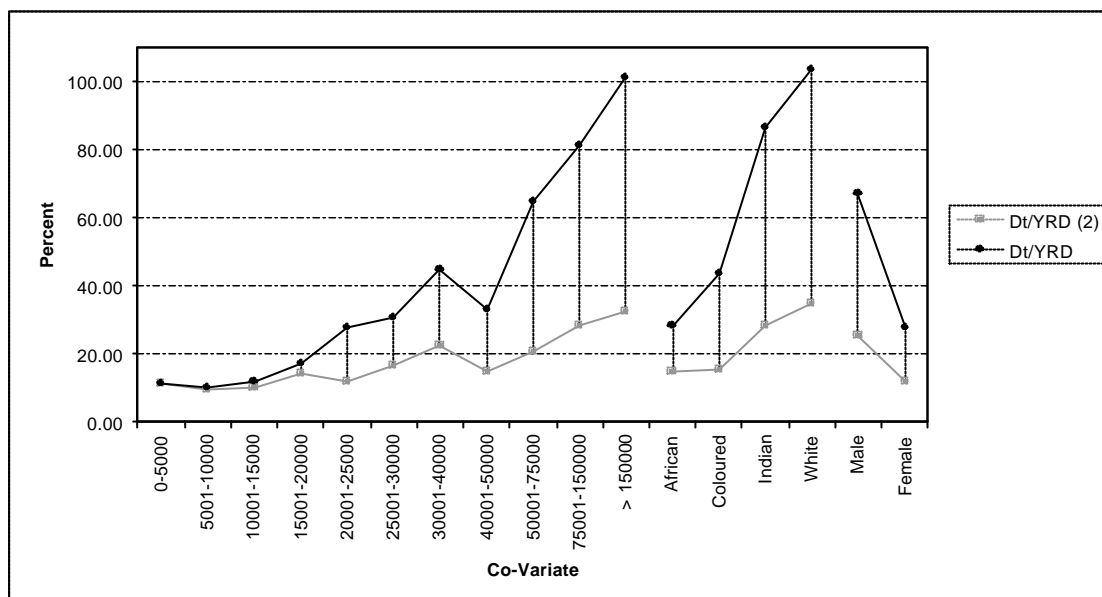
However, one of the difficulties when comparing the above indebtedness data across all co-variates is that housing clearly biases the debt profile at the top of the income distribution. In Table 3, we omit housing from the calculations in order to test how sensitive the observations are to housing debt.

Table 3: Indebtedness Levels Excluding Housing: 1999

Co-Variate	Dt/Y (Less Housing)		Dt/YD (Less Housing)		Dt/YRD (Less Housing)		Dt/Cx (Less Housing)	
	Less	Difference	Less	Difference	Less	Difference	Less	Difference
0-5000	9.87	0.00	9.87	0.00	11.21	0.00	9.56	0.00
5001-10000	8.05	0.57	8.15	0.57	9.37	0.63	7.50	0.37
10001-15000	8.00	2.17	8.31	2.20	10.07	2.23	7.41	1.77
15001-20000	10.86	2.25	11.70	2.55	14.61	2.72	9.92	1.91
20001-25000	9.31	12.36	10.39	14.80	12.18	15.56	7.91	8.94
25001-30000	12.02	9.53	13.13	10.32	16.68	14.12	11.17	7.33
30001-40000	12.47	17.27	13.67	19.95	22.68	22.29	10.30	13.35
40001-50000	11.78	15.07	13.32	17.76	14.94	18.22	11.10	12.23
50001-75000	14.58	26.70	16.78	31.58	20.94	43.65	13.29	24.07
75001-150000	18.77	36.86	21.98	43.60	28.54	52.57	17.05	33.11
> 150000	20.57	38.82	23.59	46.34	32.58	68.80	19.65	38.17
African	10.05	7.98	11.11	9.44	14.79	13.53	10.16	7.38
Coloured	11.80	22.51	13.10	25.14	15.62	28.22	10.75	21.04
Indian	18.23	41.88	20.92	50.49	28.45	57.94	15.75	37.80
White	22.80	43.35	26.41	51.64	34.66	68.73	19.63	38.57
Male	16.49	27.41	18.84	32.48	25.34	42.00	15.04	24.83
Female	9.65	10.23	10.54	11.82	11.92	16.01	9.12	9.07

The table shows recalculated figures for indebtedness minus housing debt for each variable on the one hand, and the difference between the original figures presented in Table 2 and non-housing figures presented here. It is evident from the table that the same trend direction holds across all of the co-variates when compared with the original figures, albeit with lesser magnitude. Predictably, the variation increases as income increases, which is carried through to the population group and gender figures. The following figure graphically displays this.

Figure 1: Difference between Non-Housing Debt for Dt/YRD Variable: 1999



The figure shows the difference between indebtedness figures including housing (Dt/YRD) and excluding housing (Dt/YRD (2)). As mentioned above, the same general trends are present even when housing debt is omitted from the calculations.

4.1 Provincial Variation

In this section we analyse an important indebtedness variable – the debt to regular disposable income variable – and its variation at the provincial level. We are interested in those provinces that show the greatest variation from the national mean, as well as the within and between group variation; thus, the results are presented for the minimum and maximum levels of indebtedness only.

As far as income groups are concerned, it is evident from the data that there is repeated representation of the Western Cape as the most indebted province at the lower end of the income distribution, with Gauteng becoming prominent towards the middle and upper end, and Mpumalanga and the Eastern Cape becoming prominent at the top end. Mpumalanga is often the least indebted province at the lower and middle end of the income distribution, with the North West, the Northern Province and the Northern Cape the least indebted provinces at the top end of the distribution. One of the reasons that may explain the Western Cape and Gauteng's dominance among the more highly indebted provinces is the fact that finance is probably more widely available in these areas.

As far as the range of values are concerned (i.e. the range between the provincial minimum, national mean and provincial maximum), the R5K-R10K, R10K-R15K, R25K-R30K and R40K-R50K income categories display high upward variation from the national mean (i.e. the provincial maximum values) by at least three times the value of the mean. Conversely, the income categories that show the greatest downward variation from the national mean (i.e. the provinces where the factor difference between the mean and the provincial minimum is greatest) are the R0-R5K, R25K-R30K and >R150K income groups.

Table 4: Provincial Variation in Debt to Regular Disposable Income: 1999

Co-variate	National Mean	Provincial Minimum (Province)	Provincial Maximum (Province)
0-5000	11.21	0.00 (MP & NP)	21.46 (WC)
5001-10000	10	6.83 (MP)	53.48 (WC)
10001-15000	12.3	3.45 (MP)	31.23 (WC)
15001-20000	17.33	9.50 (EC)	35.14 (WC)
20001-25000	27.74	8.75 (MP)	50.08 (GAU)
25001-30000	30.8	7.18 (MP)	104.91 (GAU)
30001-40000	44.97	8.99 (MP)	80.08 (GAU)
40001-50000	33.16	10.20 (NW)	92.28 (MP)
50001-75000	64.59	23.3 (NW)	95.63 (GAU)
75001-150000	81.12	43.29 (NP)	110.03 (MP)
> 150000	101.37	7.34 (NC)	174.61 (EC)
African	28.32	16.18 (NW)	61.75 (WC)
Coloured	43.84	3.53 (MP)	72.93 (NP)
Asian	86.4	0.00 (NC&FS)	174.25 (NP)
White	103.39	37.94 (NC)	156.78 (EC)
Male	67.34	39.93 (NW)	96.94 (WC)
Female	27.92	10.96 (NW)	74.86 (GAU)

We can therefore conclude that despite the consistently upward indebtedness trends presented in Table 2, there exists considerable unevenness in the levels of indebtedness across the provinces. Each income category also has a range of values that often deviate quite substantially from the national mean, implying further that there is significant variation in the levels of indebtedness within the same income category. Despite this variation, however, it is still clear that the upper end of the income distribution is more indebted than the lower.

As far as provincial variation across the races is concerned, it is evident that there are no immediately visible trends from the data. However, we do see considerable within group variation relative to the national mean. For African and Asian people, the provincial maximum figures are more than double that of the national mean, whereas Coloured and White people have smaller but still significant differences. There is also considerable downward variation from the mean in the provincial minimum tables for Coloured and White people. For Asian people, the zero figures in the provincial minimum row are partly related to the small sample size in the Free State particularly, and should thus be interpreted cautiously. What is perhaps a more surprising observation is the greater provincial maximum table for Asian people relative to Whites.

By tracking the provincial maxima across the races, we can assess the overall distribution of indebtedness across the races and compare this to the national trend. Here it is evident that even though the level of variation within and between the races is material, the racial distribution of indebtedness is generally the same as the national distribution, with the exception of the Indian and White figures of course. Thus it is still apparent that African and Coloured households are much less indebted relative to Indians and Whites. To a large extent this can be explained by the aforementioned fact that the former households are less wealthy.

As far as provincial variation by gender is concerned, we can see from the table that the North West has the lowest levels of indebtedness across the provinces, which is picked up as the provincial minimum figures for both men and women. The Western Cape and Gauteng once again feature as the most indebted provinces, corroborating earlier findings on these provinces and reinforcing the point conjectured that greater access to finance within these provinces positively contributes to indebtedness levels.

Both within group upward and within group downward (factor) variation is greatest for women, while between group differences reinforce national findings that men are indeed more indebted than women.

5. Cashflow

Unlike the last section, we analyse cashflow at the national level only, repeating the covariates of income group, race of household head and gender of household head. Cashflow is an important indicator of a households' net income status, which, when reviewed in conjunction with indebtedness levels, helps identify the degree of vulnerability of households.

Table 5 shows household data for five measures of cashflow: total income as a percentage of total expenditure (denoted Y/C), disposable income as a percentage of total expenditure (denoted YD/C), direct (or regular) income as a percentage of total expenditure (denoted YDir/C), direct disposable income (i.e. regular income minus tax) to total expenditure (denoted YRD/C) and indirect income as a percentage of total expenditure (denoted YI/C). In this table, 100 percent marks the point at which income exceeds expenditure, and is an indication that positive household cashflow exists. It is important to note that all five proxy variables are short-term measures of cashflow that ignore household assets. Several trends are noteworthy from the table.

Table 5: Cashflow by Income Category: 1999

Co-variate	Y/C	YDir/C	YI/C	YD/C	YRD/C
0-5000	99.92	80.85	19.07	99.92	80.85
5001-10000	98.44	87.87	10.57	98.09	87.52
10001-15000	104.62	91.83	12.79	102.78	89.99
15001-20000	98.95	89.30	9.65	93.08	83.43
20001-25000	95.12	82.79	12.33	88.87	76.54
25001-30000	102.15	90.42	11.74	95.04	83.31
30001-40000	97.75	87.07	10.68	89.54	78.86
40001-50000	101.34	90.79	10.55	91.37	80.82
50001-75000	101.63	89.83	11.81	90.81	79.00
75001-150000	100.25	88.64	11.62	87.09	75.48
> 150000	109.72	84.04	25.67	95.95	70.28
African	106.62	91.62	15.00	99.10	84.09
Coloured	101.13	91.09	10.04	93.31	83.27
Indian	96.83	85.43	11.40	85.64	74.24
White	95.35	80.70	14.65	82.46	67.80
Male	101.29	87.45	13.85	90.57	76.72
Female	103.30	88.99	14.31	97.47	83.16

Firstly, total income only exceeds total expenditure at the third income category (R10K-R15K), whereafter it fluctuates around one hundred percent before clearly rising above it in the >R40 income range. What is perhaps surprising is the fact that the difference between the total income and disposable income figures are smaller than expected, especially towards to top end of the income distribution. We would ordinarily expect that because taxation was 45 percent of total income in 1999 for this income category, disposable income figures would be lower than they are. A major reason that accounts for this is the fact that the disposable income figures are inflated due to the inclusion of indirect income in this measure. If we evaluate the regular disposable income variable, the data conforms more closely to expectations in this regard.

At the lower end of the income distribution, we also see the predictable trend of total income to total expenditure and disposable income to total expenditure being very close to equal, before the trends gradually depart as taxation starts becoming more significant. Naturally, this observation is consistent in the direct income to expenditure and direct disposable income to expenditure figures. However, the important contribution of indirect income to the lowest income category is instructive, and it remains significant throughout the lower end of the distribution and also towards the top end. An important reason that could help explain this trend is the vacillation of individuals from lower income groups between the formal and informal sectors of the economy, while at the top end of the distribution we would see returns from investments and other windfall gains becoming prominent. We can infer from this that the informal sector makes an important contribution to buffering income (and thus smoothing consumption).

The fact that the regular disposable income to total expenditure figures trend towards a fairly consistent decline across the entire income distribution is indeed theoretically consistent, for we would expect that there is an inverse relationship between income and cashflow. That is, the highest income categories would show levels of cashflow clearly below that of the lower income groups, due to the expectation that future income would, at a minimum, not decrease², and that long-term assets would induce less discretionary spending habits.

As far as cashflow by race of household head is concerned, we can see that African households consistently show greater cashflow levels compared to all other population groups. To a large extent, this is understandable given their lower levels of indebtedness, which, as was mentioned in the earlier discussion, is partly attributable to the effects of poverty in the community at the aggregate level. Furthermore, the observations made in the cashflow by income category section above are carried through in this graph, where it was observed that wealthier income groups had lower cashflow levels than poorer groups.

As far as cashflow by gender is concerned, it is evident from the table that female-headed households are marginally more liquid than male-headed households. To a large extent, this is predictable, as Table 2 for gender and indebtedness clearly displays that female-headed households are much less indebted than male-headed households. This, in turn, would imply greater cashflow levels provided that female-headed households were earning similar income levels to male-headed households. However, it is clear from the minor differences between the genders in the above table that female-headed households cannot possibly earn similar income levels to male-headed households, for if they did, the differences in cashflow would be far greater than those present in the table, given that male-headed households have indebtedness levels at least double that of female-headed households. Thus, while men may have levels of indebtedness greater than women, the relative effect of the cost of that debt on household cashflow is only slightly more significant (leading to marginally lower cashflow levels) than the same for women.

5.1 The Demographics of Indebtedness and Cashflow

We have seen in this section that indebtedness rises as income rises, implying that poorer households have restricted access to debt, which lowers their relative exposure to debt *even though their demand for debt may be high*. However, there was a significant degree of variation across the provinces with respect to these trends, with the Western Cape and Gauteng proving to have particularly high ranges of indebtedness relative to national norms. We have also seen that there is a distinct racial and gender pattern to indebtedness, though the racial observations are far

² NB: This observation is valid if we make the not unreasonable assumption that households at the top end of the income distribution represent skilled employees whose services are in short supply.

more robust than those for gender, owing to the nearly equal cashflow levels between men and women.

When analysing cashflow it is important to qualify its relationship to indebtedness. It should be noted, for example, that because wealthier income groups were spending the greatest proportion of debt on the accumulation of assets, lower relative levels of cashflow for the disposable income variables were not problematic at all, and in fact suggest that a greater proportion of expenditure is going towards investment income. However, the fact that lower income groups had negative cashflow figures at all is a profoundly important observation, for it suggests that households will permanently be indebted to cover the income – expenditure deficit.

This implies further that we can qualify households' decisions to incur debt as either voluntary or involuntary. Voluntary debt can be found at the higher end of the income distribution, and reflects the satisfaction of household wants and the accumulation of household assets. Involuntary debt, which is prevalent at the lower end of the income distribution, is something that households incur to smooth their consumption, and reflects the satisfaction of household needs.

Therefore, for poor African and Coloured households, the *negative but relatively high* cashflow levels, combined with their low levels of indebtedness, corroborate the fact that they are the most poverty stricken households. That is, they do not qualify to receive loans of a greater value, which prevents their ability to accumulate assets, and they rarely have sufficient income to cover expenditure needs, and thus must permanently incur debt, albeit it at lower levels. Partly related to lower income and cashflow levels is the corollary implication that these income groups consequently have a lower *ability to repay* debt, making these groups more vulnerable to interest-rate hikes.

6. Consumption and debt schedules

In this section we analyse the proportion of expenditure that is allocated to consumption, finance and debt, and in so doing create consumption, finance and debt *schedules*, which simply disaggregate the proportion of households' expenditure according to appropriately defined line items for each of these variables. The three schedules are firstly displayed together in tabular form before being treated separately – a necessary task owing to the fact that they have been constructed to display specific expenditure patterns. The consumption schedules measure only the proportion of households' expenditure on basic needs, including (1) food (this item aggregates total expenditure on food, beverages and tobacco), (2) housing³, (3) clothing, (4) furniture, (5) health care, (6) transport, (7) education, and (8) other, to total consumption. The category "Other" is defined as the sum of all other items of expenditure, including cash paid to domestic workers; personal care; other household consumer goods; household services; household fuel; computer and telecommunication equipment; household communication; reading matter; recreation, entertainment and sport (including equipment; other goods; licenses and rental); miscellaneous expenditure (including goods; membership fees, donations, gifts; income tax; finance and insurance; other expenditure; net loss from business activities; own production and consumption (including harvest and livestock)).

The debt schedule is not based on expenditure data at all, but rather on the variable "total outstanding debt". Here, we measure the proportion of total debt outstanding on a bond, car,

³ NB: No separation is made between housing owned or housing rented in this section, as our aim is simply to evaluate the proportion of household's expenditure on housing, regardless of whether it is owned or rented.

furniture, overdraft and credit card, retail stores and family loans, to total outstanding debt (i.e. the sum of the bond, car, furniture, overdraft, retail stores and family loans figures).

6.1 Analysing the Schedules

When analysing the schedules it is important to note that each one provides us with specific insight into the expenditure patterns of households, and therefore adds an extra dimension to the analysis of both indebtedness and cashflow because they provide insight into the constraints that households face and their consequent demand for debt. Consumption schedules, for example, tell us the contribution of the respective line items to total consumption expenditure. Following the logic of *Engel's Law*, we expect vast differences in consumption patterns as income increases. Similarly, we expect that poorer people would procure loans from different sources to more wealthy households, though the precise differences are not *a-priori* intuitive in a period of financial liberalisation.

Table 6 presents the consumption and debt schedules, which display the percentage of each line item to total consumption and debt, respectively. All figures are for annual (mean) percentages.

Table 6: Consumption and Debt Schedules: 1999

	Income Category										
	0-5000	5001-10000	10001-15000	15001-20000	20001-25000	25001-30000	30001-40000	40001-50000	50001-75000	75001-150000	>150000
Co-Variate	Consumption Schedule										
House	8.73	12.71	15.39	17.85	20.04	17.62	19.52	20.32	22.30	25.96	21.76
Food & Bev	59.21	53.40	47.62	39.35	36.61	34.05	30.68	27.98	23.72	17.70	12.06
Clothing	4.12	5.64	6.00	5.18	5.48	5.43	4.71	4.89	4.46	3.20	2.25
Furniture	1.16	2.06	3.43	4.45	4.87	5.62	5.51	4.76	3.78	2.81	2.15
Health	0.66	1.28	1.19	1.16	1.59	2.28	2.60	4.05	4.45	5.00	4.05
Transport	3.32	4.89	5.24	5.37	5.58	6.61	7.16	7.68	8.23	9.32	11.32
Education	1.10	1.06	0.92	1.91	1.41	1.67	1.73	2.04	1.70	2.02	2.18
Other	21.70	18.96	20.21	24.73	24.42	26.73	28.09	28.28	31.35	34.00	44.23
	Debt Schedule										
Bond	0.00	0.30	1.73	1.99	9.26	6.45	13.75	12.77	22.45	33.67	46.22
Car	0.00	0.27	0.75	1.19	0.42	2.87	6.64	6.82	15.48	25.14	25.14
Furniture	12.27	13.77	20.77	41.25	39.97	50.07	36.78	36.69	27.03	13.00	4.92
O/D & CC	1.17	0.05	0.84	0.70	1.65	1.16	4.10	5.63	5.78	9.27	14.20
Retail	48.12	59.05	55.26	39.26	34.70	29.08	28.92	30.60	23.11	14.37	6.98
Family loans	38.44	26.58	20.65	15.62	14.01	10.37	9.81	7.48	6.15	4.55	2.55

As far as the consumption schedule is concerned, it is immediately evident that the items of greatest importance to poorer households are food and beverages and then housing costs. If we move across the income distribution, we find that total expenditure on food decreases as income rises, while expenditure on housing is far more stable across the income groups. Both of these trends conform well to intuition concerning income and expenditure, namely that the lower the levels of income, the greater the proportion of income spent on food. On the other hand,

housing remains fairly constant due to the fact that, at the higher end of the income distribution, people spend greater absolute amounts of money on housing (by taking out a bond for example). This rise in absolute expenditure on housing implies a more constant relative proportion of income spent on housing despite the differences in wealth.

Furthermore, the lowest income category spends close to 80 percent of its total consumption expenditure on all of the line items except "Other", as opposed to the highest income category, where the corresponding figure is just over 55 percent. It is also interesting to note the low levels of relative expenditure on education, which decreases consistently from the upper end of the distribution to the lower end, falling below one percent of total expenditure in the bottom three income categories.

Another interesting observation is the point at which expenditure on health care disproportionately increases, namely in the R40K-R50K income category, where health expenditure increases by over 1.45 percent to 4.05 percent of total consumption expenditure. Here we can infer that people begin to depend less on the public health system *per-se*, and start making the transition to private health care. The subsequent downturn in health expenditure between the top two income categories simply denotes the fact that the costs of health care (i.e. subscription to medical aid schemes) has a lower impact on total expenditure, which we ordinarily expect as there is a substantial increase in income between these two income categories.

As far as identifying financially constrained households are concerned, a simple approximation is to sum the percentage contribution of housing, food and beverages, and clothing. Here, if they sum to greater than 60 percent of total consumption expenditure, we can fairly confidently conclude that the households show evidence to support this. In the consumption schedule above, the first five income categories (i.e. R0-R25K) conform to this classification of vulnerability, but if we drop this classification to 50 percent of total consumption expenditure, all but the two most wealthy income groups conform. This means that consumption expenditure for the most basic household goods (i.e. housing, food and beverages, and clothing) is an extremely significant constraint on households across a wide range of the income distribution in South Africa. Furthermore, this implies that the demand for debt at the lower end of the income distribution is highly inelastic, and will consequently remain pervasive in the medium-term.

As far as the debt schedule is concerned, it is evident from the table that there is a vastly different debt profile as we proceed across the income distribution. At the lower end, debt is primarily sourced from furniture stores, retail institutions and family, while at the top end of the distribution, debt is procured for housing and vehicles primarily, with a growing contribution by overdraft and credit card facilities. Debt on durable commodities (such as furniture) becomes more prominent in the fourth income category (R15K-R20K), and in every category thereafter up until the second last income category (R75K-R150K), where housing becomes the largest debt contributor.

An interesting point is the fact that family loans do not disappear entirely in the debt profile as we move towards the upper end of the distribution, although it does consistently decrease as income increases. The significance of these observations is profound. At the lower end of the income distribution, we see that debt is procured from furniture and retail institutions presumably through hire purchase contracts, which translates into greater costs of debt or higher interest rates. It therefore implies that households are more financially constrained when they are forced to borrow from these sources.

By way of summary then, it is evident that by analysing consumption and debt schedules, we have been able to strengthen our analysis of the constraints that households face as we now have a more precise idea of their spending habits. In this regard, we firstly demonstrated that the consumption of basic needs follows a predictable pattern across the income distribution, where clear evidence was presented concerning the constraints that households face with respect to basic needs expenditure. Furthermore, these constraints were fairly widespread, and the fact that they were so pervasive implies that the demand for debt is fairly inelastic in South Africa.

The debt schedule further explained why poorer income classes are so vulnerable. Instead of owing money on assets such as a house, poorer individuals primarily owe money to retail institutions, furniture stores and to family members. This further implies that they are incurring substantial amounts of debt on consumables, rather than on assets.

7. Changing levels of indebtedness: 1995-1999

In this section we analyse the changes in the level of indebtedness and cashflow for all households between 1995 and 1999. This is an important period owing to the fact that it coincided with a process of liberalisation in financial markets that was initiated in the early 1990s. We are consequently concerned with whether financial sector deepening has widened access to finance for the poor, and the implications associated with this. Below, we first evaluate aggregate changes to cashflow, indebtedness, consumption and debt schedules before disaggregating each of these.

The following table aggregates changes between 1995-1999.

Table 7: Percent Change in Aggregated Indicators: 1995-1999

Cashflow (Aggregated)					Indebtedness (Aggregated)			
Y/C	YDir/C	YI/C	YD/C	YRD/C	Dt/Y	Dt/YD	Dt/YRD	Dt/C
-1.71	-2.46	3.25	-0.87	-1.57	3.04	1.51	5.62	-2.97
Consumption Schedule (Aggregated)								
House	Food	Clothes	Furniture	Health	Transport	Education	Other	
10.85	8.65	-20.88	-25.29	12.01	-2.16	2.94	-6.59	
Debt Schedule (Aggregated)								
House	Car	Furniture	Overdraft & CC	Retail	Family Loans			
0.34	0.34	0.34	0.34	0.26	0.37			

The picture painted by the table is an interesting one, where we see that between 1995-1999:

- All cashflow variables marginally decreased with the exception of indirect income, implying that the importance of indirect (transitory) income to households has increased over the period.
- All indebtedness variables marginally increased with the exception of debt to expenditure, implying that income has declined relative to expenditure over the period.
- Expenditure on housing, food and beverages, health and education all increased, while expenditure on clothing, furniture, transport and other goods decreased.
- The importance of different sources of debt remained relatively constant over the period.

Thus, we can summarise by saying that indebtedness generally increased while cashflow generally decreased (as is to be expected given the negative correlation between the two). Also, important substitution shifts have taken place in the consumption schedule, with a greater proportion of income being spend on housing and food. From an *Engels Curve* perspective, this would imply that households generally became poorer over the period.

7.1 Disaggregated Cashflow and Indebtedness

The table below disaggregates changes in the levels of cashflow and indebtedness over the period 1995 to 1999.

Table 8: Changes in Cashflow and Indebtedness: 1995-1999

Co-Variate	Cashflow (Mean %)			Indebtedness (Mean %)			
	Y / C	YRD / C	YI / C	Dt / Y	Dt / YD	Dt / YRD	Dt / C
0-5000	-0.21	-8.92	68.10	23.59	23.58	24.97	26.65
5001-10000	-4.47	-1.64	-19.36	-4.02	-5.10	-6.62	-8.68
10001-15000	2.35	6.12	4.36	-17.91	-21.60	-24.45	-17.74
15001-20000	-0.91	3.43	-19.87	-34.25	-38.61	-33.70	-30.47
20001-25000	-5.95	-6.35	4.46	-15.23	-10.11	-33.74	-26.42
25001-30000	2.54	5.62	5.62	-22.38	-27.72	-20.23	-24.11
30001-40000	-5.51	-4.09	1.67	11.01	0.92	478.37 ⁴	-4.81
40001-50000	-3.59	-2.21	-0.61	-27.55	-27.82	-24.35	-34.74
50001-75000	-1.49	1.27	-1.94	-14.13	-14.26	-11.18	-18.25
75001-150000	-4.40	-0.03	-13.30	-6.93	-9.25	-10.04	-14.36
> 150000	0.45	0.59	0.36	10.94	10.18	-10.39	3.06
African	1.70	2.00	17.14	2.87	1.23	36.73	0.68
Coloured	-5.24	-4.58	-12.60	3.35	2.42	2.14	-3.94
Indian	-3.33	-2.79	-16.23	2.96	1.32	1.12	-1.71
White	-5.43	-6.25	15.13	3.13	1.52	-2.77	-4.59
Male	-2.34	-2.46	4.66	3.17	1.59	5.49	-3.14
Female	0.01	0.73	-0.33	2.38	1.13	6.57	-1.86

Dealing with cashflow first, the table displays three important cashflow variables: total income, regular disposable income and indirect income as percentages of total expenditure. Across the income categories, we see that there is a great deal of inconsistency as far as cashflow is concerned. Clear decreases in cashflow are present at the lower end of the income distribution (i.e. the first two income categories). However, the lowest income category has also seen a 68.10 percent increase in indirect income to total expenditure, which implies that the importance of this source of income (and hence the reliance on the informal sector) has grown. At the top end of the distribution, it is interesting to note that the highest income category is the only category that has witnessed an increase in cashflow levels. The middle of the distribution does not display significant trends either way in this regard.

Turning to indebtedness by income category, we see that debt has increased by approximately 24 percent for all indebtedness categories for the R0-R5K income group. This initially suggests that households within this income category were able to better access credit over the period. However, a degree of caution should be exercised here for there was no evidence of the same in the next few income categories. Indeed, the R15K-R20K income group actually has the biggest

⁴ This number is exceeding large due to the effects of outliers in the regular disposable income variable in this income category.

decrease in indebtedness figures at over 30 percent for all indebtedness variables. Unfortunately, we do not have sufficient information to evaluate why this took place, though one explanation could be that the rise in interest rates over the period 1995 to 1999 actually deterred households in this income category from taking out further loans, while those households in the R0-R5K income category received access to new forms of credit for the first time.

As far as changes in cashflow by race of household head is concerned, it is evident that there has been a consistent decrease across all population groups with the exception of African people. This is partly accounted for by the consistent increase in indebtedness figures in all but the debt to expenditure variable, although it should be noted that the exception to the rule (i.e. African people) suggests that total expenditure has decreased among the poorest population group while indebtedness has increased. This is a foreboding characteristic which implies that the poor have become poorer over the period.

Indebtedness also increased consistently for three out of the four indebtedness measures for both genders. The exception to the rule is debt to total expenditure, where a consistent decrease has taken place, implying that expenditure has increased in relative terms since 1995. Despite this however, cashflow has not behaved as expected at the gender level, where as many increases as decreases are witnessed.

7.2 Disaggregated Consumption and Debt Schedules

The table below summarises the changes in consumption and debt as a proportion of their respective totals over the period 1995-1999.

Table 9: Changes in Consumption and Debt Schedules: 1995-1999

Co-Variate	Income Category										
	0-5000	5001-10000	10001-15000	15001-20000	20001-25000	25001-30000	30001-40000	40001-50000	50001-75000	75001-150000	>150000
Consumption Schedule											
House	-4.6	20.98	22.26	23.09	38.21	11.79	21.11	2.27	7.35	6.11	-21.25
Food & Bev	5.1	6.05	19.2	15.55	20.24	25.52	20.48	32.4	28.01	34.94	51.68
Clothing	-39.55	-26.91	-16.29	-26.76	-16.78	-10.51	-21.29	-14.88	-6.48	-5.75	0.22
Furniture	-42.57	-49.35	-42.28	-35.12	-36.1	-30.04	-14.91	-8.1	-10.81	-8.1	-5.07
Health	-27.47	9.66	13.4	-34.36	-16.63	-11.49	-28.05	9.19	-1.77	14.53	41.78
Transport	-14.49	-3.66	5.93	-5.79	-24.03	-0.18	-5.09	-9.74	-9.22	-8.97	-11.04
Education	20.97	3.09	-44.21	28.45	-13.82	-12.39	-2.41	24.67	-16.43	-3.16	31.51
Other	8.66	-5.56	-24.31	-13.41	-18.49	-16.26	-14.95	-17.36	-13.04	-13.45	3.65
Debt Schedule											
Bond	0	-44.78	-31.89	-74.74	-11.26	-52.94	5.82	-41.83	-14.22	-19.17	4.31
Car	0	-47.05	-36.24	90.03	-91.52	-56.15	-6.97	-51.19	-28.19	-0.36	-4.81
Furniture	13.77	-16.29	-41.83	1.56	-14.68	44.98	3.04	30.19	43.11	36	31.27
O/D & CC	219.56	-92.87	67.34	-49.64	-6.12	-72.5	-28.34	7.87	-27.19	-11.52	-9
Retail	-18.45	4.8	24.56	14.43	34.59	-8.8	-2.38	26.3	21.03	44.77	2.11
Family loans	28.81	4.44	36.47	7.63	43.07	13.91	14.46	16.29	7.15	61.11	-11.75

Dealing with consumption first, we can see from the table that expenditure on housing has increased significantly throughout the entire income distribution with the exception of the lowest and the highest income category. This implies that the cost of both renting and purchasing

housing has increased significantly over the period, and further restricted spending on all other goods except food and beverages, which has generally increased across the income distribution. We can describe this as a substitution effect, induced by changes in one category but affecting all others. In the highest income category, expenditure on food and beverages, health care and education account for the largest increases between 1995 and 1999.

Changes in the composition of debt over 1995 to 1999 are very interesting indeed. In the lowest income category, it is immediately apparent that overdraft and credit facilities have become far easier to access, contributing to incredible growth over the period of 219.56 percent (though it is important to state that the absolute amounts in this income category are very low). Less significant, though still material are the rising percentages of family loans and furniture – trends that are somewhat predictable given the importance of these sources of debt to the poor. However, there has also been a significant decrease in loans from retail institutions, which is perhaps best explained by the rise in overdraft and credit facilities. Here we can conjecture that either there was some incentive for consumers to make substitution shifts in the debt profile (e.g. lower interest rates), or the demand for debt simply increased forcing consumers to procure debt from any available source, or a combination of the two. Clearly though, it is very difficult to generalise across the income distribution as vastly different behavioural traits are present.

Lastly, a very important trend picked up at the bottom of the table is the consistent increase in family loans for all but the highest income category. This is entirely expected given the rise in interest rates associated with the Asian crisis of 1998, and the negative effect that this had on all consumers of debt.

7.3 The Implications of Changing Levels of Indebtedness

The analysis of indebtedness between 1995 and 1999 showed that indebtedness generally increased while cashflow generally decreased. This was accompanied by substitution shifts in the consumption schedule, with a greater proportion of income being spend on housing and food. This took place partly because of the effects of the Asian crisis on interest rates and partly because of greater access to finance via financial sector deepening.

Financial sector deepening has therefore unambiguously widened access to finance for the poor, and thus allowed these households to finance short-term consumption needs. It is possible to conclude that there is consequently a positive relationship between financial sector deepening and the levels of indebtedness in South Africa. However, the long-term micro implications of liberalisation are not necessarily all positive. Here, because so much of the country's population is poor, we can expect indebtedness to continue to increase in the near future, partly because financial sector deepening has taken place and is continuing to do so. This is one unfortunate residual associated with financial liberalisation, and must be tracked diligently over time to ensure that over-indebtedness does not become endemic to poorer households.

The process of liberalising the financial sector also has important macroeconomic implications. For example, because many micro-financiers are now moving out of the informal sector and into the formal sector, greater amounts of cash from the informal sector are entering the formal money markets. On the one hand, this is a necessary process, but on the other, it places upward pressure on inflation and ultimately on interest rates, both of which filter back into the informal sector and negatively affect households who form part of this sector⁵. These uncertainties are,

⁵ I am grateful to Albert Berry (University of Toronto) and Rashad Cassim (Trade and Industrial Policy Secretariat) for pointing this out to me.

unfortunately, endemic to any process of structural change, and will therefore remain with us in the medium-term.

8. Conclusion

The analysis of household indebtedness in South Africa has been set within the context of profound changes in the financial sector and the macroeconomic policy environment more generally. This, in turn, has had important microeconomic implications, witnessed by the marginal rise of aggregate indebtedness accompanied by the marginal decreases in household cashflow levels between 1995 and 1999.

On the one hand, rising indebtedness is positive because it means that poor people can now access finance more easily than ever before. However, a more worrying implication is the greater likelihood of poor people reinforcing already binding expenditure constraints in this process. In this regard we have seen ominous signs in the above analysis, including:

1. Consumption expenditure devoted to housing, food and beverages, and clothing represents a majority proportion of expenditure in all but the two most wealthy income groups, implying that low cashflow levels are sticky, and thus the demand for debt is highly inelastic at the bottom and middle end of the income distribution.
2. The ability to repay debt is low and declining for many income groups at the bottom end of the income distribution between 1995 and 1999 owing to the combined effects of low and decreasing cashflow levels and rising housing costs, which have resulted in substitution shifts away from durable goods and towards consumer goods in the consumption schedule.
3. Dependence on indirect income at the bottom end of the income distribution is material but unpredictable, owing to erratic changes in indirect income between 1995 and 1999, which further implies that the informal sector cannot sustainably be used to buffer income levels in the medium-term.

Future research efforts should focus on providing a framework with which to assess whether households have become more vulnerable to over-indebtedness since financial liberalisation. This will provide the necessary analytical steps needed in order to provide a more robust theoretical and empirical framework with which to investigate indebtedness in South Africa.

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Appendix

Aggregation of Indebtedness Data

Selected Indicators of Aggregated Cashflow and Indebtedness (1999)								
Cashflow (Aggregated)					Indebtedness (Aggregated)			
Y/C	YDir/C	YI/C	YD/C	YRD/C	Dt/Y	Dt/YD	Dt/YRD	Dt/C
101.83	87.86	13.97	92.42	78.44	37.48	43.57	56.86	34.07
Consumption Schedule (Aggregated)								
House	Food	Clothes	Furniture	Health	Transport	Education	Other	
20.78	27.42	4.15	3.46	3.4	8.01	1.77	31.01	
Debt Schedule (Aggregated)								
House	Car	Furniture	Overdraft & CC	Retail	Family Loans			
21.99	13.66	22.18	6.41	26.16	9.6			