

**Consumer Price Inflation  
across the  
Income Distribution in South Africa**

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## Introduction

It is common cause that South Africa's level of income inequality is amongst the highest in the world, while millions continue to live in abject poverty more than a decade after the country's democratic transition. Against this background:

- It is **worth investigating consumer inflation for different income levels** to see to what extent they may differ.
- It is also **worth asking the question what the inflation rate is for the average consumer.**

The key reason for the analysis is the fact that:

- **The prices that households face are critical in translating income into welfare.**
- **The higher the rate of increase in prices the poor face for a basket of the goods and services they buy, the less the welfare that will accrue to them.**

The same is true of the rich. Given the huge income gap between rich and poor in South Africa, the question arises whether the poor have, over time, been suffering more from inflation than the rich, or vice versa.

The key issue about inflation in the context of income inequality is that:

- **The poor and the rich have different baskets of consumption.** These baskets differ from the "average" basket for the country as a whole. As we shall see, the consumer price index (CPI) as calculated by Statistics South Africa does not really reflect the "average" household, as is commonly believed.

Because of the weight structure applied by Stats SA – **known as a plutocratic weight structure** – the weightings of the different items in the CPI basket are skewed in favour of the rich. A more representative weighting structure – **known as democratic weight** – can be calculated to get a sense of the "true" level of inflation for the average South African. This rate is different from the one based on economy-wide consumer spending, as the rich account for much more consumer spending than the poor. The

two different weighting structures will be discussed in more depth further in this policy brief.

It will become clear that the purpose for which a price index or inflation rate is used should determine **the type of weighting structure employed**.

- In the case of monitoring economy-wide consumer price inflation **the price index should reflect the structure of economy-wide consumer spending**.
- But in cases where the price index is used for adjusting state welfare benefits, or merely for monitoring the rate of inflation experienced by the poor, **the price index should arguably reflect price changes that are relevant to poorer households**.

## What do CPI Weights Mean?

**The CPI is an index of the overall price level in the economy based on total consumer spending on a basket of items.** Each item carries a specific weight – for instance, in Stats SA's basket for the consumer price index excluding mortgage rates (CPIX), spending on food carries a weight of 25,66 percent. This means that 25,66 percent of all consumer spending by consumers in metropolitan and urban areas of South Africa goes to food. When food prices increase, the contribution that they make to the overall increase in the price of the CPI basket is limited by their weighting.

The way in which Stats SA calculates the weights – which will be discussed in more detail below – does not reflect inflation faced by the average consumer. For example, for key expenditure categories – such as food, alcoholic beverages and transport – the CPI weights consistently fall between those of the two highest income groups (quintiles), referred to by Stats SA as the “high” and “very high” income groups.

## What are Plutocratic Weights?

The short answer is that they are not democratic weights – **they do not accord each consumer the same influence in the determination of the weighting of each item in the CPI basket.** The plutocratic weighting system is applied internationally, and **it entails the adding up of expenditure on a specific item by all households and then calculating the share of this figure within total consumer expenditure.** For example, take paraffin. First, total consumer expenditure is calculated. Then the sum of all households' expenditure on paraffin is calculated, and its weight is the share of all household spending on paraffin in total consumer spending.

What this amounts to is that **the influence of each household is proportional to its total expenditure.** From this it is clear that those households that spend more will have a bigger weighting. That is why the consumer price index as published by Stats SA – and other statistical agencies around the world – is biased in favour of wealthier consumers. The highest expenditure group in South Africa accounts for more than 70 percent of the weight of the CPI in 2000 weights. This plutocratic weighting structure is used by most countries.

**The plutocratic weighting structures attach more importance to luxury items and less importance to necessities than the democratic method.** Returning to the paraffin example, this may be a big spending item for the poor, but in the bigger scheme of things it is tiny.

## What are Democratic Weights?

In this approach, **the expenditure weights for each individual household are derived and these are then averaged to obtain the democratic weights.** The democratic weight for white sugar is derived by obtaining what proportion of total spending each household spends on sugar. The mean of these shares or weights is then calculated to obtain the weight of sugar in the CPI basket. The bias towards the upper end of the income distribution is eliminated since the poorest 20 percent of households and the richest 20 percent of households each account for 20 percent of the democratic index's weight.

## Different Approaches Yield Different CPI Weights

The two different approaches yield vastly different weights for some items in the consumer basket. The biggest spending item in both is food, which has a plutocratic weight of 23,7 percent but a democratic expenditure weight of 36,6 percent. This is more than 50 percent higher than the plutocratic weight. From this one can deduce that during periods of high food prices, the average South African is hit harder than those at the upper end of income distribution. Interestingly, housing represents 18,6 percent of the CPI basket in plutocratic expenditure weights – that is, skewed towards high income earners – but 10,9 percent in democratic expenditure weights.

**A number of expenditure categories decline in importance relative to total expenditure as income/expenditure increases.** These are food, fuel and power, personal care and tobacco products. For instance, household fuel and power accounts for 8,7 percent of expenditure in the poorest decile and only 3,1 percent in the top decile.

**Lower income households tend to have their expenditures concentrated in relatively few categories.** Thus, two thirds (67,6 percent) of expenditure in households in the lowest decile is located in just three categories – food, personal care and fuel and power.

**The plutocratic weight structure most closely resembles the expenditure patterns of households of the 95<sup>th</sup> percentile of the expenditure distribution.** This clearly confirms that the official inflation rate as calculated by Stats SA cannot reflect the experience of “a typical consumer or household.”

## The Problem is not Unique to South Africa

Though the problem posed by using plutocratic weights for calculating official consumer price index statistics is not unique to South Africa, the extreme levels of inequality in the South African society accentuate it. It is important to note that a true democratic price index requires information on individual households spending and prices, which is very difficult to obtain.

## The Plutocratic Gap

A “plutocratic” gap exists when there is a difference between the inflation rate as calculated using plutocratic weights and the one calculated using democratic weights. The gap will exist if three conditions hold: Firstly, there must be inequality in household expenditures. Secondly, households must display different consumption patterns related to their income level. And thirdly, there must be price differences across those goods consumed differently by households at different points in the distribution. Given these conditions, it is clear that a plutocratic gap will exist for South Africa.

The existence of a positive gap means:

- that plutocratic inflation is more than democratic inflation
- the prices of goods consumed disproportionately more by wealthier households are rising more rapidly compared with prices of other goods.

Conversely, a negative plutocratic gap occurs:

- when democratic inflation exceeds plutocratic inflation. In this case, the prices of items consumed disproportionately more by poorer households are rising more rapidly than the prices of other goods.

The question is whether there is a pattern to be discerned. Do the poor generally have a worse inflation experience than the rich? The answer is that this is not the case in general, although there are periods when this happens – and vice versa.

An analysis of the plutocratic gap for South Africa for the period 1998 to 2006 shows that the plutocratic gap fluctuates from positive to negative and back again repeatedly over the period. From 1998 to September 2001, the gap spent 27 out of 45 months – more than half the period – in positive territory. For the last 13 months of that period, the gap turned quite strongly positive, peaking at a value of 1,391 percentage points in March 2001 and averaging 0,812 percentage points. Over this period, then, the rich had a higher rate of inflation than the poor.



However, **after this period there was a clear change in inflation dynamics, with the gap falling rapidly into negative territory and remaining there for 20 months.** By September 2002, the gap had fallen as far as -1,805 percentage points and averaged -0,92 percentage points for the period. Then yet another change in inflation dynamics occurred in mid-2003, when the gap again turned positive. While this positive plutocratic gap lasted somewhat longer than any of the preceding cycles since 1998, it was not characterised by particularly high values.

Interestingly, **negative plutocratic gaps – that is, when the inflation rate for poorer households exceeds that of the rich – seem to be related to higher levels of inflation.** As consumer inflation rises, so it appears that the gap turns negative, while falls in the rate of inflation are related to a positive plutocratic gap.

## The Changing Drivers of Inflation

**Food is clearly the dominant contributor to overall inflation in the lower expenditure groups.** Between 1997 and 2006, it accounted for 33,4 percent of inflation for the average urban household and as much as 47,3 percent in decile two, but generally falling as total expenditure rises. It is only in decile eight that the contribution to overall inflation made by food is surpassed by any other expenditure category, in this case housing. At its peak, food inflation accounted for three-quarters (11,7 percentage points) of the 15,6 percent inflation rate for decile one.

**Housing, on the other hand, plays a particularly important role in driving inflation amongst higher expenditure groups.**

## Identifying Key Products Responsible for the Difference in Inflation for Poor Households Compared with Other Groups

The preceding paragraphs briefly touched on the sources of inflation for poor households, but did not explain the differences between inflation rates for the poor on the one hand and non-poor or wealthy on the other. This type of analysis highlights the role over-exposure plays for certain goods. If a household is over-exposed to a high-inflation item, its overall inflation rate will be higher, and vice versa.

**Paraffin is a key driver of inflation for poor households** and this analysis confirms that it widens the gap between the aggregate price indices for decile one relative to the average urban household and relative to decile ten households. However, the same is not true for mealie meal. The latter is identified as an important inflation driver, but actually contributes to a reduction in the relative discrepancy because, over the period, mealie meal prices increase by less than the overall rate of inflation.

This analysis points to the potential threats to poor households based on their relative over-exposure to certain items. **Since inflation dynamics may change over time, low inflation items may become high inflation items in the future.** A key example of this, demonstrable for 2001-2003, is mealie meal. Over that period, mealie meal contributed to a widening in the gap between inflation for the rich and poor. But, over a longer period – the decade to 2006 – mealie meal contributed to narrowing the gap.



## Conclusion

From the above, it is clear that households face different inflation rates depending on their position in income distribution. **Inflation rates calculated on the basis of plutocratic weights don't reflect average inflation rates.**

The study concurs with the majority of literature surveyed that neither rich nor poor households are found to have experienced rates of inflation consistently higher or lower than average. **The inflation rate calculated using conventional plutocratic weights does not differ substantially over longer periods of time from the democratically weighted inflation rate.** However, over shorter time periods, the difference between the two inflation rates can be significant, indicating a marked divergence in the rates of inflation experienced by households at different points of the income distribution. It is also important to note the finding that in periods of rising inflation, the poor have experienced higher rates of inflation than the rich.

However, the paper is not meant as a critique of the official methodology of weight calculation. Official price indices play an important role in macroeconomic policymaking, and provide an accurate reflection of economy-wide inflation.

What is clear is that the purpose for which a price index or inflation rate is used should determine the type of weighting structure employed.

- **When using a price index for adjusting state welfare benefits, or when monitoring inflation rates experienced by poorer households, the price index used should arguably reflect price changes that are relevant to poorer households.**
- **In the case of monitoring economy-wide consumer inflation, the price index should reflect the structure of economy-wide consumer spending.**