

Overhauling the South African CPI

A peaceful transition of a different type

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Abstract

The story of South Africa's largely peaceful political transition is well known. The South African Consumer Price Index has been through a similar transition. The CPI is an important statistic in South Africa's inflation-targeting environment. Sparked by the need to revise the index because of a failure to update rental data, Statistics South Africa initiated a change in the method used to collect price data on retail products. Through a gradual roll-out process and a careful introduction of the new data into the index, very little impact on the aggregate CPI was seen. Fortunately this transition occurred at a time of low inflation. These changes laid the basis for further work on the basket and the services contained in it.

1. Introduction

Over the past 12 years South Africa has seen enormous changes to its political, social and economic fabric. Economic statistics do not exist in isolation from these changes. They must evolve and adapt to ensure that they are able to reflect the changes taking place in their environment. The South African Consumer Price Index has been subject to substantial changes over the past five years.

The miracle that is the South African transition is that radical change took place in a relatively peaceful manner. Moreover, the foundation of the market economy remained during the democratic transition with the ruling party adopting neo-liberal macro economic policies such as inflation targeting, privatisation and a free floating currency. At the same time, massive state resources have been dedicated to social spending aimed at improving the lives of the poor of the country, neglected and dispossessed under apartheid.

South Africa's transition has attempted to balance change with continuity, to transform the country by eliminating the very negative consequences of apartheid discrimination and simultaneously promote an economic image compatible with the dominant global paradigm

Similarly, the statistics office has been forced to transform itself dramatically while still producing data that is widely used. After years of isolation, methodologies were out of date and although some staff with technical skill remained, these were thin on the ground. New leadership appointed in the late 1990's drove a programme of international collaboration to bring the statistical infrastructure up to date.

In this context, the CPI has also transformed itself, to be more in line with international norms and more representative of the experiences of the majority of South Africans. All of this has happened in a monetary policy context of inflation targeting and the intense media attention this focuses on the monthly CPI numbers.

2. The way things were

Historically, data for the CPI had been collected similarly to any other business survey. Questionnaires were dispatched to the head offices of retailers and the managers of independent stores to collect prices on a range of goods and services.

There were several problems with this approach for the collection of price data for retail products:

1. Store management does not have a vital interest in the accuracy of data submitted to the statistics office. This is particularly so when items may change their characteristics or are discontinued.
2. There is no guarantee that the products for which prices are reported are those that are bought by typical consumers.
3. It was impossible for Stats SA to guarantee the accuracy of the index while having no control over the data collection. The retail sector in South Africa is highly concentrated opening the possibility of collusion between major players in reporting incorrect price information.
4. It was not in line with any internationally accepted method of collecting price data from retailers.
5. This closed system of data collection was an inheritance of the apartheid era, and focused on the needs of a minority. Continuation of this method was unsuitable for an open and democratic society.

3. A spark for change

In 2000 South Africa adopted inflation targeting as part of its macroeconomic growth and stability strategy. An index of the CPI which excluded interest rates on mortgage loans (CPIX) was adopted as the target measure. In the absence of any alternative, there was a general view in the country that CPI and CPIX were reliable measures of inflation. This confidence took a massive dent in 2003 when an analyst for a local investment bank pointed out that the housing rental index of the CPI had not been updated for 18 months and that inflation was running some 2 percentage points higher than it should have been.

Stats SA moved quickly to rectify the problem with the rentals but was forced to revise historical CPI figures. This incident severely damaged the credibility of the organisation.

The crisis related to the rental index sparked a process of reviewing the practices of the CPI to ensure that the agency would not again be surprised by a user pointing out deficiencies. The primary focus of investigation was the prices collected by postal questionnaire from retail stores. The continuation of the practice was seen by Stats SA as a major risk to the index. A decision was therefore made to move to a direct price collection method using field workers to physically observe and record prices. What was less clear was how this would be done and how it would impact on the published indices.

4. Initiating direct price collection

The weight of products bought in retail stores in the SA CPI is approximately 60%. A project team independent of the prices division was formed to roll out the new method. The purpose of having an independent team was to enable continued publication of the monthly CPI without being distracted by the development project. Technical assistance from the US Bureau of Labour Statistics was instrumental in methodological and questionnaire development, as well as in training local staff on these. After a stuttering start, the direct price collection method began as a pilot in the town of Nelspruit in the mainly rural Mpumalanga province in March 2004.

The initiation of the direct price collection coincided with the start of the International Comparison Project (ICP) in South Africa. The ICP uses a standard list of products described systematically by use of a form known as the Structured Product Description. This format was adopted for the purposes of the direct price collection. Given this decision, Stats SA decided to use the direct price collection pilot to provide the data required for the ICP.

Following the pilot, price collection was formally initiated in Mpumalanga in June 2004. This was followed by Johannesburg (the South African economic powerhouse) which was initiated between August and October of that year.

The remaining 13 large cities were initiated one by one until November 2005. Twenty one smaller towns were initiated together in February 2006. This experience showed that it usually took a team about three months to produce results that were stable and of acceptable quality.

A comprehensive quality management system was put in place as part of the processes of collecting and processing the directly collected price data. This system carefully scrutinises the forms submitted by the price collectors, records the errors made, and provides for immediate feedback and follow up. Later, an audit function was added in order to further ensure the accuracy of the pricing information.

5. Impact of the new method

The prices data collected by the postal survey were confronted with the directly collected prices for matched items. For prices collected in the first week of the month (which is when the postal prices were collected), it was found that in only 30% of the cases were the prices of matched items the same between the mail and field collection vehicles. In 38% of the cases the field collection shows higher prices than the mail survey, while for 32% of cases the field prices are lower than the mail prices.

The distribution observed for field prices collected in the second and third weeks of the month was broadly similar to that for the first week.

The analysis by collection month showed a similar pattern, giving Stats SA grounds for confidence that the differences did not stem from any errors in the direct collection, thanks to the exhaustive quality control processes put in place for direct prices collection.

The analysis led to the conclusion that about 70% of the prices collected via the postal survey were incorrect, and 8 -10% of the products for which prices were reported in the postal survey could not be found in the field.

A primary concern of CPI users, including the monetary and fiscal authorities, was that the move to direct prices collection would disrupt the stability of the

index. Given the extent of the differences in actual prices measured, there was a real possibility that the rates of price change from the field collection would also vary significantly from those resulting from the mail survey. This was in fact the case at a micro level where significant differences were observed for certain sub-indices in specific places. However, at the aggregate level this proved not to be true.

Table 1. Comparison of key price indices, based on postal survey and directly collected prices				
Index type	month	postal only	postal+field¹	Province for which field prices used
Headline	Dec 05	3.4	3.4MP ²	
	Jan 06	3.0	3.0MP	
	Feb	2.6	2.6MP	
	Mar	3.0	3.1MP	
	Apr	3.4	3.5MP, GP ³	
	May	3.3	3.4MP, GP	
	Jun	2.8	2.9MP, GP	
	Jul	3.4	3.3MP, GP, WC ⁴	
	Aug	3.9	3.9MP, GP, WC, EC ⁵	
Food	Dec 05	0.9	1.5MP	
	Jan 06	1.3	1.3MP	
	Feb	1.4	1.4MP	
	Mar	1.5	1.5MP	
	Apr	1.6	1.7MP, GP	
	May	1.4	1.6MP, GP	
	Jun	1.3	1.5MP, GP	
	Jul	2.8	2.5MP, GP, WC	
	Aug	2.6	2.5MP, GP, WC, EC	

¹ Combination of postal collection for some provinces and field collection for the remainder, with the field-collected prices progressively replacing the postal-collected prices over time.

² Mpumalanga province

³ Gauteng province

⁴ Western Cape province

⁵ Eastern Cape province.

Table 1 illustrates that despite the significant difference in actual prices between the field and the postal surveys, there was very little difference between the headline (official) CPI and CPIX (inflation target) aggregate

numbers using the two data sets. This is partly explained by the high proportion of services in the high level CPI weights. Services were not impacted at all by the change in collection method. The more important factor is that during this period South Africa was experiencing historically low inflation. This was fortuitous as it resulted in the scale of differences being minimised.

6. Managing the changes

Given the high profile of the CPI in South Africa, and the view of many users that changing the collection method was unnecessary, it was imperative to carefully manage the change over and the means of communicating it.

Following the province-by-province approach to implementing direct price collection in the field, the agency faced the challenge of how to introduce this data into the published index. It faced a choice between a phased approach progressively introducing field-based prices province-by-province, or alternatively introducing it in one go when all provinces had been initiated.

After five provinces had been initiated, a detailed consideration of the two alternatives was put before the Statistics Council (a statutory advisory body) in August 2005. The main benefits of the phased approach were that that its impact on the indices would be gradual and the agency could not be accused of having 'sat on' data for any length of time. A risk of this approach was that problems might be experienced in the remaining provinces, making it difficult to stick to the timetable. Given the critical mass of five out of nine provinces already initiated into the field collection, it was not considered that a hybrid of mail survey for four provinces and field price observations for the other five would result in measures of price change at national level very different to what a full implementation of the field collection would show.

The one-step approach to introduction of field-based prices had the advantage of only impacting the index at one time, and being able to target communications in a more focused manner. The risk of using that approach was the possibility of a step change in the index.

Ultimately the agency decided on a two stage introduction. The first stage would be the introduction of the data for the larger urban areas in all provinces simultaneously (this happened in June 2006) and the second the introduction of data for the smaller urban areas (in January 2007). The first stage introduction was preceded by a briefing to the South African Reserve Bank and Minister of Finance on the methodology and the historical variations between the methods. A short information note was placed in the relevant CPI publication and on the Stats SA website at the publication time.

Due to a combination of the negligible impact on the overall numbers, the low inflationary environment and the fact that the method is the international standard, no public (or private) criticism of the switch over was experienced.

8. Other changes aimed at opening up and modernising the CPI

The introduction of the directly collected price data represented the beginning of a range of changes to the CPI. In 2009 a reweighted and rebased CPI will be released. The new CPI will contain the following improvements:

- Adoption of COICOP as the classification as this is the international standard;
- Changes to methodology for housing¹ and various other services;
- A radical overhaul of the basket of goods and services aimed at including items that are more representative of 'average' household consumption; and
- New publication areas based on updated demarcations and local economic realities.

In order to manage user expectations and avoid major surprises, a user committee was established, comprising representatives of state organs, banks, unions, academia and the media. Regular meetings are held with the

¹ Currently only interest rates on mortgage bonds are used to monitor the cost of imputed rent of owner occupiers. The rental equivalence approach has been proposed to replace it due to the limitations of the current measure and the lack of adequate data to implement other possible approaches.

SA Reserve Bank to discuss methodological issues, and methodological documents are made available on the Stats SA website.

9. Conclusion

The experience of introducing the directly collected data into the CPI has prepared us for the next phase. However, the new changes are different, will be introduced in a very different inflationary environment, and will bring their own challenges. The task for the statistics office will be to find the right balance between introducing improvements and ensuring consistency in the numbers.