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Doing the homework on Domestic Worker Wages

A comparison of various data sources used to collect domestic worker wage data for the SA CPI

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1. Introduction

There were 1 118 000 domestic workers employed in South Africa as at December 2011, according to the Quarterly Labour Force Survey (QLFS). This represents a massive 6.3% of the total labour force in South Africa. The South African CPI basket has domestic worker wages (DWW) included in it and it carries a weight of 1.99% as determined by the Income and Expenditure Survey (IES) of 2005/2006.

The CPI has experienced some difficulties in measuring DWW for inclusion in the CPI in the past. Data from the bi-annual Labour Force Survey (LFS) was initially used to calculate DWW, this however proved problematic for use in the CPI, due to the fact that the sample size of domestic workers varied vastly from one period to the next, making matching of records difficult. It was decided to move from LFS data, to the use of Unemployment Insurance Fund (UIF) data to measure DWW. However the CPI is aware that UIF data is an administrative source and inherently has administrative data source problems.

2. Overview of various methods

This section will take a brief look at past, current and methods currently being tested for use in the CPI for the calculation of DWW in the South African CPI.

2.1 Historic measure of DWW (LFS)

In the past Statistics South Africa (Stats SA) used one of its own survey's, the LFS as the source for DWW data. The LFS was a bi-annual household-based sample survey. It collected data on labour market activities of individuals aged 15 years and older who live in South Africa. It also provides insight into a variety of issues related to the labour market, including the level and pattern of unemployment and the industrial and occupational structure of the economy.

A number of variables were used to filter out the relevant data for domestic workers from the LFS dataset. The main problem the CPI faced with LFS data however was the fact that the number of data units varied significantly from one period to the next. CPI set out to look for a more reliable source to calculate DWW. Since September 2005, CPI began exploring alternative data sources for the calculation of DWW. In April 2008, CPI switched from LFS data to UIF data for the calculation of DWW.

In August 2008 however the LFS was revamped and changed to the Quarterly Labour Force Survey (QLFS) but by that time the CPI was using Unemployment Insurance Fund (UIF) data to calculate DWW.

Analysis of QLFS data:

From Q3:2010 up to Q4:2011 the change in DWW as measured by the QLFS has shown an increase of **17.6%**. Table 1 below shows the price relatives calculated quarter over quarter, for the quarters between Q3:2010 and Q4:2011

Table 1

Description	Q3_2010	Q4_2010	Q1_2011	Q2_2011	Q3_2011	Q4_2011
QLFS DWW Data	4.40%	5.38%	4.99%	0.01%	4.48%	-3.36%

Advantages:

- * A large dataset from which to calculate price changes
- * 25% of the sample is rotated every quarter (leaving a 75% overlapping sample). This ensures that respondent burden is kept to a minimum as well as bringing new respondents into the sample which helps to ensure the sample is as representative as possible of the population

Disadvantages:

- * The results are only available on a quarterly basis
- * QLFS does not necessarily interview the domestic worker directly, since the interview usually takes place with the head of the household
- * In recent quarters the wage data has been formatted as character data and not numeric data. When the formatting of the columns are changed certain wage data is lost or rounded to a large number of decimals which is impossible since at best wages are earned up to 2 decimals. The integrity of the wage data collected by QLFS is therefore in question

2.2 Current method used by Stats SA to measure DWW

Stats SA revised its methodology for DWW, by using UIF data (replacing LFS), in April 2008. The following section will give an overview of the UIF data currently being used by Stats SA for the calculation of DWW.

The Unemployment Insurance Fund (UIF) purpose according to the South Africa Department of Labour (DOL) is defined as follows: *“The purpose of this Act is to establish an unemployment insurance fund to which employers and employees contribute and from which employees who become unemployed or their beneficiaries, as the case may be, are entitled to benefits and in so doing to alleviate the harmful economic and social effects of unemployment”*

From the 1 April 2003 all employers had to register their domestic workers for UIF. This legislation led to the creation of a large database of domestic workers that were registered by their employers.

The source data obtained from UIF is in the form of a declarations file and payments file. The declaration file consists of all activities in terms of period of payment including the declaration of changes of personal and wage status by employees registered with the UIF. The payments file is a file in which all information regarding payments, including rates and dates are recorded.

The payments file requires editing before it is suitable for tracking wages of domestic workers. The editing procedure is applied programmatically to the payment file, and consists out of two criteria namely:

- Employers with only one domestic worker employed are identified from the declarations database; and
- Employers who have made a monthly payment in the six preceding months are then selected to avoid distortions made by annual or periodic payments.

By using both data files, the following requirements for the calculation of DWW are met:

- Consistent monthly payments are able to be identified over time
- A one-to-one employer-employee relationship is established to make like-on-like comparisons possible.

Once all editing has taken place and all requirements are met, percentage change¹ and index is calculated for DWW.

Analysis of UIF data:

From Q3:2010 up to Q4:2011 the change in DWW as measured by the UIF has shown an increase of **7.6%**. Table 2 below shows the price relatives calculated over the quarters between Q3:2010 and Q4:2011

Table 2

Description	Q3_2010	Q4_2010	Q1_2011	Q2_2011	Q3_2011	Q4_2011
CPI UIF Data	1.99%	1.19%	1.19%	1.66%	1.79%	1.25%

Advantages:

- * A large number of records in the payments and declarations file
- * By law all domestic workers have to be registered for UIF so the coverage of the UIF data should theoretically be very good.

Disadvantages:

- * The results are only available on a quarterly basis
- * A lot of work has to be done on the payments and declaration files before the data is fit for use in the compilation of the CPI
- * Dependence on an external department for data
- * Only a small number of domestic workers are actually registered for UIF

¹ Percentage changes are calculated with one quarter lag

2.3 Pilot Survey for DWW

In April 2010 a new pilot survey was introduced in order to test an alternative method of collecting price information for DWW. The pilot survey comprises of two parts:

- Collecting wage information directly from domestic workers – Domestic worker (DW) pilot
- Collecting prices charged by domestic services companies (Nannies, Au-pairs, Gardeners, Domestic Cleaning services etc) – Service provider (SP) pilot

The frame for the DW Pilot was created by using contact details for domestic workers in newspapers, websites as well as contact details for domestic workers from the QLFS' database.

The frame for the SP pilot was created by looking up companies that provide domestic services in all areas covered in the South African CPI.

After testing both surveys for a few months more respondents were added to both frames but more specifically the DW pilot survey in an effort to increase the number of price quotes obtained. The telephonic questionnaire was also adjusted to make provision for the supply of referral names and contact details in a further effort to increase the frame size for the DW pilot. It has unfortunately not yielded the results expected.

The SP survey had a high response rate from the start and prices are easily obtainable. This pilot survey has not experienced the same problems that are being experienced by the DW pilot.

Analysis of DW Pilot data:

From Q3:2010 up to Q3:2011 the change in DWW as measured by the DWW Pilot Survey data has shown an increase of 2.04%. Table 3 below shows the price relatives calculated over the quarters between Q3:2010 and Q3:2011

Table 3

Description	Q3_2010	Q4_2010	Q1_2011	Q2_2011	Q3_2011	Q4_2011
DW Pilot Survey	-0.56%	1.83%	-2.64%	5.50%	2.73%	-4.51%

Advantages:

- * Collecting wage data from domestic workers directly
- * The data is available in the same month it was collected in.

Disadvantages:

- * A very small frame of domestic workers
- * A lot of domestic workers refuse to participate
- * Language problems

- * Some of the domestic workers that are on the frame could not be reached for a few consecutive quarters. The overall collected and response rate for this survey is very low and seems to be getting worse with each quarter

Analysis of SP Pilot data:

From Q3:2010 up to Q4:2011 the change in DWW as measured by the SP Pilot Survey has shown an increase of 12.92%. Table 4 below shows the price relatives calculated over each quarter between Q3:2010 and Q3:2011

Table 4

Description	Q3_2010	Q4_2010	Q1_2011	Q2_2011	Q3_2011	Q4_2011
SP Pilot Survey	2.56%	1.62%	1.62%	1.86%	2.79%	1.82%

Advantages:

- * A large number of service providers for DWW exist. These include, cleaning services, au-pairs, nannies, gardeners and pool cleaners
- * High response rate due to companies cooperating or fees being charged is made available on service providers websites.

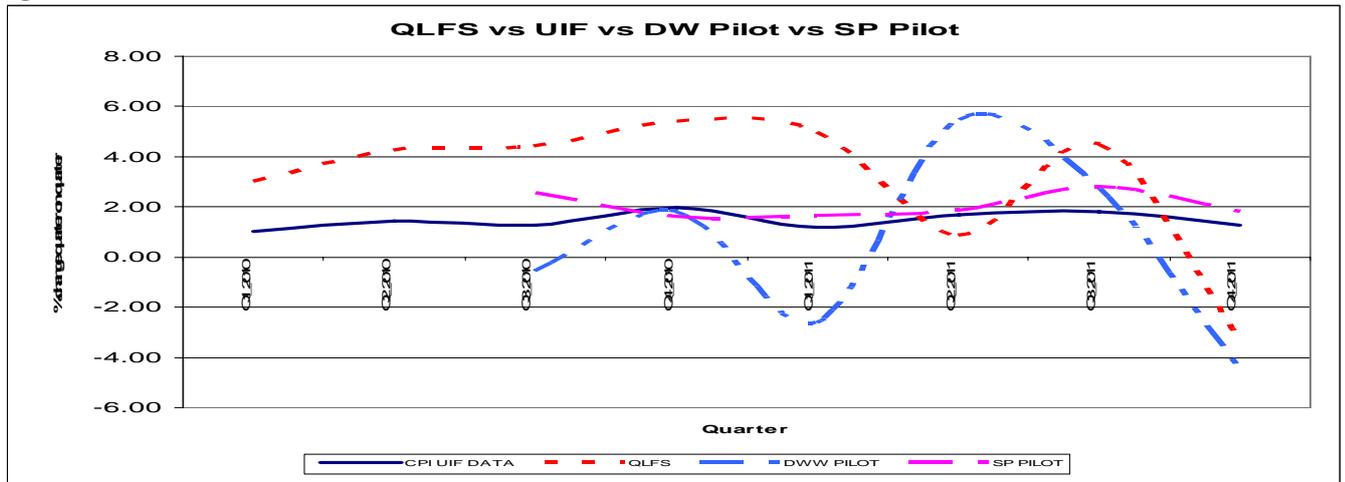
Disadvantages:

- * A number of service providers changes the fee structure regularly making it impossible to compare the previous quarters' collected information with the latest available information
- * Prices collected over the internet seems to change rather infrequently which means staff members have to phone services providers to confirm prices.
- * Service providers operate primarily in three provinces - Gauteng, Western Cape and KwaZulu-Natal out of a total of nine.

3. Comparisons

The following section will take a look at the results obtained from the various sources and the impact each of these would have had on CPI, if it were to be used in CPI. Figure 1 below shows the quarter on quarter % changes of the various methods used to calculate DWW

Figure 1: QLFS vs. UIF vs. DW Pilot vs. SP Pilot



As can be seen from Figure 1 above, the quarter on quarter movements of the various methods that all aim to measure the same thing is vastly different. Although over the period Q3:2010 to Q4:2011 all the methods showed an increase in the level of DWW, the actual levels measured differs from about 2% to close to 18% movements in DWW since Q3:2010 to Q4:2011

Table 5 below shows the average monthly wage earned by domestic workers per province (according to the QLFS data (on the left hand side and the Pilot Survey on the right hand side)). What is interesting to note is the fact that Northern Cape domestic workers earn more than both Eastern Cape and KwaZulu-Natal (KZN) domestic workers. The Northern Cape's contribution to South Africa's Gross Domestic Product (GDP) is by far the smallest in South Africa, it is therefore interesting to note that their domestic workers are some of the highest paid in the country (See table 6 for provincial contributions to South Africa's GDP).

Table 5: Average monthly wage for 2011 (QLFS and DW Pilot Survey Data)

QLFS		DW Pilot Survey	
Province	Average Monthly Wage	Average Monthly Wage	Province
Gauteng	R 1,751.79	R 1,872.69	Western Cape
Western Cape	R 1,694.58	R 1,850.00	Northern Cape*
Northern Cape	R 1,391.83	R 1,794.00	KwaZulu-Natal
Mpumalanga	R 1,277.09	R 1,775.42	Gauteng
KwaZulu-Natal	R 1,148.92	R 1,604.08	Mpumalanga
North West	R 1,026.74	R 1,483.21	North West
Eastern Cape	R 995.57	R 1,426.67	Eastern Cape
Free State	R 975.24	R 1,270.94	Limpopo
Limpopo	R 913.68	R 1,205.42	Free State

* A very small number of respondents were used to calculate the average monthly wage for the Northern Cape. This could be a possible reason for the relatively high monthly salary earned by Northern Cape domestic workers

Table 6: % contribution of each province to South Africa's GDP (3rd Quarter 2011)

Province	GDP @ Market Price (R-million)	% contribution to GDP
Gauteng	897 553	33.72%
KwaZulu-Natal	420 647	15.81%
Western Cape	376 284	14.14%
Eastern Cape	203 993	7.66%
Limpopo	191 934	7.21%
Mpumalanga	187 367	7.04%
North West	177 075	6.65%
Free State	145 405	5.46%
Northern Cape	61 175	2.30%

Another interesting observation from Table 5 is the fact that the Eastern Cape domestic workers earns some of the lowest salaries, yet the Eastern Cape is the 4th biggest province in terms of economic activity in South Africa (See Table 6 above).

Figure 2: % change in Headline CPI using each method to calculate Headline CPI

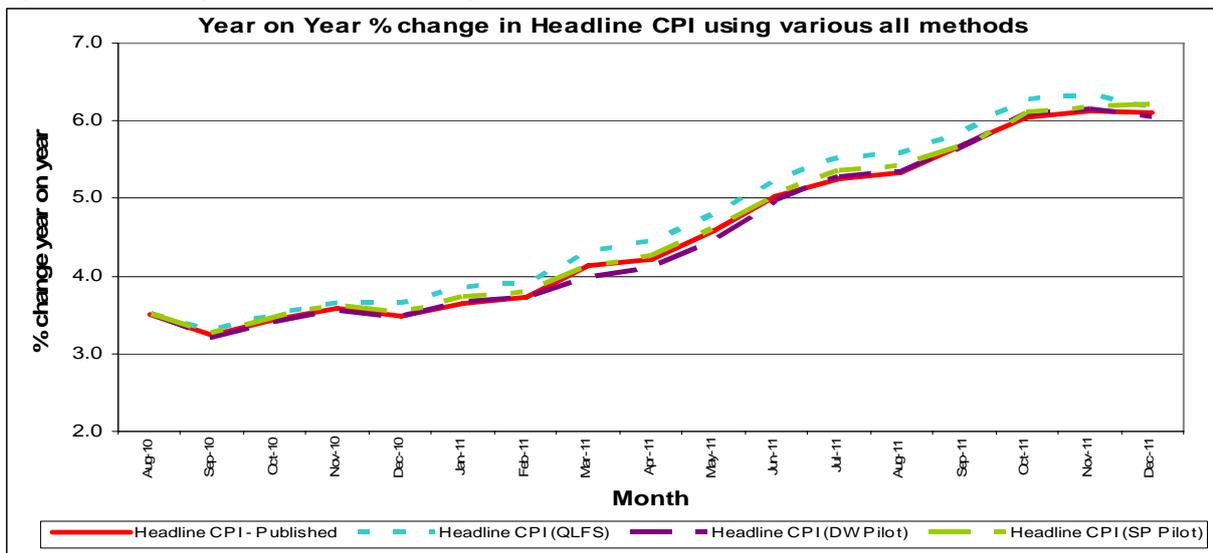


Figure 2 above shows that if Headline CPI was calculated using QLFS data, that the year on year percentage changes for the published CPI would be higher than the current published figures.

Table 7: Average % difference from published CPI using each of the following methods

Description	Average difference from published CPI (September 2010 to December 2011)
QLFS	0.2%
DW PILOT	0.0%
SP PILOT	0.0%

Table 6 above shows the average difference from the actual published Headline CPI using UIF data, if any of the other methods were used to calculate published Headline CPI. If QLFS data was used instead of UIF data Headline CPI would be higher on average by about 0.2%. The other two methods' results were very exactly the same as the results of the UIF data.

4. Conclusion

Ideally the CPI would like to use QLFS data to compute DWW in CPI, since its not an administrative source but data based on a household survey. The current UIF data used is an administrative source and the source data is not collected for the purpose of measuring domestic worker wages but rather tracking and ensuring domestic workers in South Africa are registered for unemployment insurance.

The fact that the QLFS data shows DWW increasing by far larger amounts than the actual inflation rate is concerning, furthermore the fact that wage data is captured as text on QLFS's databases and then converted to numeric makes the use of QLFS data for DWW problematic.

Even though the data from the DW Pilot survey looks promising the real issue with this survey is the low response rate and small frame from which the survey is being run. The response rate seems to get worse every single month as more and more domestic workers cant be reached on the numbers they were contacted on in the past.

The SP pilot survey has a relatively large sample of price quotes and the response rate is a lot higher than that of the DW pilot. The price changes however are higher than that shown by the UIF data and DW pilot data. One can argue that profit motive is playing a part in price changes being higher for companies charging for a service than those prices charged by individuals. But the SP pilot survey has its drawbacks too, biggest of which is the fact that most of the service providers are located in only three of the nine provinces in South Africa (Gauteng, Western Cape and KwaZulu-Natal). Lack of prices quotes in the other provinces would lead to a larger number of imputations since price movements will have to be imputed.

All of the above mentioned methods collect wage data (for different purposes) and they all deliver different results, largely due to the fact that different collection methods were used and that it was collected from different sources and the fact that sample sizes were vastly different.

The above mentioned methods show that there are a large number of datasets and ways of collecting data for use in statistical offices, but it also highlights the fact that statistical offices need to ensure that the data they select for use is the one that meets the objectives of what the statistical office is trying to measure while at the same time enhancing the credibility and accuracy of the published data.