

# **South African Reserve Bank**

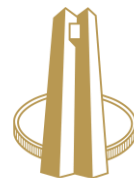
## **Occasional Bulletin of Economic Notes**

### **OBEN/18/01**

*South African Reserve Bank Economic Notes are typically short economic analyses initially written for internal discussion and to stimulate debate. They are written by staff members of the South African Reserve Bank or visiting fellows and are released publicly on an occasional basis.*

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**South African Reserve Bank**

# SARB Occasional Bulletin of Economic Notes

## February 2018

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# Onwards and downwards

## The changing role of administered prices in headline inflation

### October 2017

*Erik Visser, David Fowkes and Theo Janse van Rensburg*

#### Abstract

Administered prices are often blamed for pushing up South African inflation. Yet administered price inflation has slowed in recent years, and has been close to or below headline inflation since about the middle of 2014. This decline in administered price inflation is not simply an artefact of collapsing world oil prices. We construct a measure of administered prices that excludes the basic fuel price (termed AdminXO) and show this is now inflating in line with headline. We also show that administered price disinflation is quite broad-based, with contributions from a range of categories, and demonstrate that this disinflation has been driven both by slower inflation in some categories as well as lower weights for goods that have become markedly more expensive, such as water and electricity.

#### Introduction<sup>1</sup>

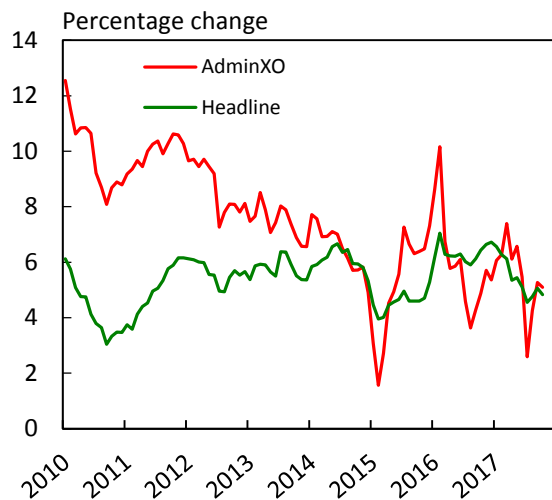
Administered prices are often blamed for pushing up South African inflation.<sup>2</sup> This is a reasonable view: since 2010 administered prices have risen by 7.5% annually, on average, compared to 5.4% for headline inflation. Yet administered prices are not currently the problem they once were. In fact, administered price inflation has been close to or below headline inflation since around mid-2014. This slowdown in administered prices is not simply an artefact of collapsing world oil prices. We construct a measure of administered prices that excludes the basic fuel price (termed AdminXO) and show this is now running in line with headline. We also show that administered price disinflation is quite broad-based, with contributions from a range of categories, and demonstrate that this disinflation has been driven both by slower inflation in some categories as well as lower weights for goods that have become markedly more expensive. Finally, we demonstrate that causation runs from administered prices to headline. This means that lower administered price inflation has helped lower headline; furthermore, future administered price determinations will shape broader inflation developments.

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<sup>1</sup> The authors are grateful for valuable comments from Theresa Alton and Osie van der Merwe.

<sup>2</sup> For instance, see “Marcus: Admin prices main inflation threat” *Business Report*, <https://www.iol.co.za/business-report/economy/marcus-admin-prices-main-inflation-threat-1103605>, 21 July 2011.

**Figure 1: Headline inflation and AdminXO**



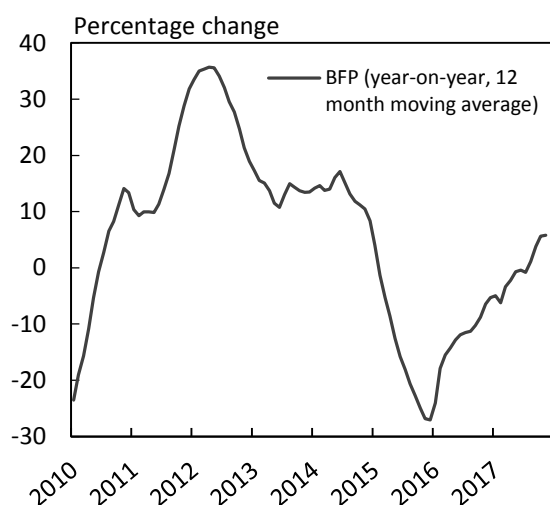
### Why is the basic fuel price an administered price?

The retail fuel price consists of two parts, the basic fuel price (BFP) plus various margins and taxes. Although government administers this second portion, it does not choose the international oil price or the exchange rate of the rand. This means the BFP is not a true administered price. Treating it as administered creates distortions, both because the BFP is highly volatile and because fuel has a significant weight in administered prices (it is close to one third of that basket), so its fluctuations shape the entire administered price trend. For these reasons, the BFP component in the fuel price should be excluded from administered prices.<sup>3</sup>

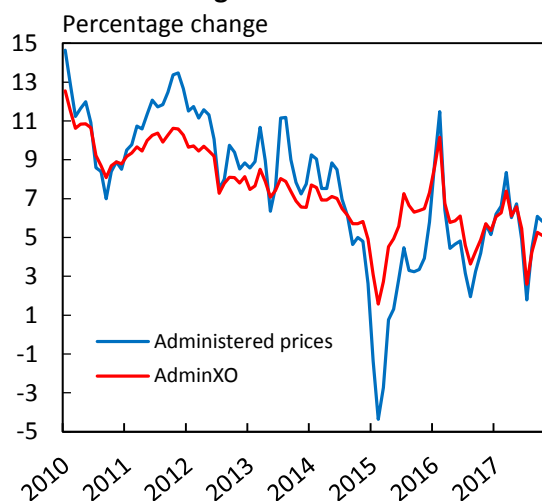
Removing the BFP from administered prices lowers administered price inflation for much of the 2011–2014 period, but raises it for late 2014 as well as 2015, when world oil prices collapsed. More recently, the two series have behaved similarly. For instance, 2016-date inflation for AdminXO is 5.8%, versus 5.5% for broad administered prices. We also note that AdminXO is less volatile than the regular administered price series, with a standard deviation of 2.2 percentage points (pp) for the former versus 3.7pp for the latter. This coheres with the intuition that administered prices should be relatively stable, affecting broader inflation in part by setting the tone for other price adjustments.

<sup>3</sup> Diesel was added to the CPI in January 2017. Our calculations reflect petrol alone up to this point, and petrol and diesel thereafter. The precise weight of fuel in administered prices is 31% with the 2012 weights and 28% with the 2016 weights.

**Figure 2: Basic fuel price of petrol**



**Figure 3: Administered prices including and excluding BFP**



### The administered price wedge has disappeared

In 2010, AdminXO inflation was running at roughly double the rate of headline inflation. The gap closed steadily over the following four years, until by about mid-2014 it had vanished entirely, and it has remained close to zero ever since.<sup>4</sup> The most important driver of this decline was electricity price inflation, which slowed from 26.8% in January 2010 to 7.0% in July 2014. Other categories, however, have also made meaningful contributions to lower AdminXO inflation. The table below divides the post-crisis era into two portions: the wedge period, in which AdminXO was consistently above headline inflation, and the period since, when the two have been roughly equal. It is clear electricity is both the single largest contributor to AdminXO and also the most important swing variable, with its contribution falling from 4.7pp to 1.8pp, on average, between the two phases. Other important contributors to the decline in AdminXO were fuel margins and taxes (down 2.0pp), education (primary school down 0.6pp; university fees down 0.7pp), water (down 0.9pp) and motor licenses and registrations (down 0.5pp). Together, these categories reduced AdminXO by 4.5pp, substantially more than the 2.9pp change brought about by electricity prices. The decline in AdminXO is therefore relatively broad-based. We also note that the declining gap between headline and AdminXO was not simply a consequence of headline rising. AdminXO has averaged 5.6% since August 2014, versus 8.8% in the 'wedge' period. By contrast, headline has averaged 5.5% since around mid-2014, versus 5.3% for the preceding four-and-a-half years.

<sup>4</sup> The only material exception occurred in 2015, when government took advantage of the sharp fall in international crude oil prices to increase the Road Accident Fund (RAF) levy from 104c/litre (as of March 2015) to 154c/litre.

<sup>5</sup> The contributions (in percentage points) to the year-on-year changes in AdminXO inflation are calculated as follows:

**Table 1: Contributions<sup>5</sup> to AdminXO (in percentage points)**

	Averages between:	
	Jan 2010 – Jul 2014	Aug 2014 – Oct 2017
Electricity	4.7	1.8
Fuel margins and taxes	3.5	1.5
Communication	-1.7	0.2
Housing: assessment rates	-0.8	0.7
Water supply	1.1	0.2
University fees	0.9	0.2
Primary school fees	0.8	0.2
Motor licenses and registration	0.3	-0.2
University boarding fees	-0.2	0.0
Driving licenses	0.0	0.2
Toll fees	0.0	0.2
Secondary school fees	0.4	0.5
Television licenses	-0.1	0.0
Paraffin	-0.1	0.0
Public transport – trains	0.1	0.1
	<b>8.8</b>	<b>5.6</b>

Note: Stats SA re-weighted the CPI in 2012 and 2016, which affects the calculations for contributions to AdminXO. For instance, a decline in the weight of an item will lower its contribution to AdminXO – possibly resulting in a negative contribution – even if its inflation rate is positive and/or does not change between the two periods.

Sources: Stats SA and own calculations

A surprise in Table 1 is that contributions to AdminXO have fallen even where inflation rates for specific components have not decelerated. For instance, the contribution of water to AdminXO inflation has declined by almost one percentage point, yet water inflation has barely slowed (from 11.0% in the wedge period to 10.5% afterwards). A closer look at the data shows the weights are also doing some of the work, with consumers responding to higher prices by reducing consumption – which is hardly an economic surprise. This has caused the weight of higher inflation items in the AdminXO basket to decline, contributing to slower AdminXO inflation (see Table 2).

$$C_t^{Elect} = \frac{(CPI_t^{Elect} * w_t^{Elect}) - (CPI_{t-1}^{Elect} * w_{t-1}^{Elect})}{(CPI_t^{AdminXO} - CPI_{t-1}^{AdminXO})} * \frac{(CPI_t^{AdminXO} - CPI_{t-1}^{AdminXO})}{CPI_{t-1}^{AdminXO}} * 100$$

Where: C is contribution and w is weight.

The formula above follows the methodologies of A Bauer, N Haltom and W Peterman, ‘Examining contributions to core consumer inflation measures’, Federal Reserve Bank of Atlanta Working Paper Series No. 2004-7, April 2004, p. 4 and Statistics South Africa (confirmed in direct correspondence).

**Table 2: Inflation rates and weights for AdminXO subcategories**

Weights	Electricity	Margins and taxes (petrol)	Communication	Assesment rates	Water supply	Universities	Secondary school fees	Primary school fees	Public transport (trains)	Motor licences and registration	University boarding fees	Paraffin	TV licences	AdminXO
2008	1.68	1.79	2.75	2.22	1.10	0.90	0.64	0.64	0.04	0.19	0.28	0.16	0.13	<b>12.52</b>
2012	4.13	2.76	2.30	1.30	1.55	1.23	0.74	0.98	0.08	0.32	0.06	0.05	0.06	<b>15.56</b>
2016	3.75	2.54	2.31	1.30	1.08	0.99	0.78	0.76	0.13	0.13	0.06	0.04	0.04	<b>14.13</b>
%*	26.5	18.0	16.3	9.2	7.6	7.0	5.5	5.4	0.9	0.9	0.4	0.3	0.3	<b>100.0</b>
Percentage changes over 12 months														
2010	23.2	12.0	0.6	8.7	10.6	8.0	9.6	11.4	25.5	8.2	9.5	-1.2	6.5	<b>10.0</b>
2011	18.5	10.0	0.0	7.9	11.5	8.4	8.2	9.7	8.5	15.5	8.9	15.6	0.0	<b>10.0</b>
2012	13.6	12.6	-0.2	7.5	11.8	9.5	8.5	8.5	17.3	9.9	9.5	15.0	0.0	<b>8.7</b>
2013	8.7	10.2	2.6	6.8	10.8	8.9	8.9	9.1	10.4	7.3	9.6	18.0	2.0	<b>7.4</b>
2014	7.2	6.2	-0.1	6.8	9.5	9.3	7.9	8.7	9.2	6.7	9.7	7.1	4.0	<b>6.5</b>
2015	9.3	12.1	-0.6	7.5	10.5	9.8	8.5	9.1	7.8	4.4	11.0	-7.6	0.0	<b>5.2</b>
2016	9.4	9.0	0.2	6.5	10.9	1.6	7.9	8.4	4.5	6.6	1.9	4.5	0.0	<b>6.0</b>
2017	5.3	8.9	-0.5	5.7	10.7	5.0	7.5	7.9	2.7	4.5	6.8	7.8	0.0	<b>5.5</b>

\* These shares in AdminXO are based on 2016 weights. We used the 2008 and 2012 weights for our calculations, but only present 2016 shares for the sake of simplicity.

Notes: Driving licences (weight: 0.13) and toll fees (weight: 0.09) were added in January 2017 to administered prices, but are excluded from the table as year-on-year percentage changes could not be calculated with the limited data available.

Red shaded cells indicate inflation rates above AdminXO for that year.

Sources: Stats SA, SARB and own calculations

### Administered prices shape overall inflation outcomes

Administered prices are important because of their weight in the inflation basket, but also because their prominence and official status means they may act as signals to price and wage setters. To assess this claim, we econometrically test whether AdminXO shapes the rest of headline (henceforth HeadlineXAO). Results (Table 3) from Granger causality tests indicate that at a 10% confidence level, we can reject the Null hypothesis that AdminXO does not Granger cause HeadlineXAO inflation. This indicates causality runs from AdminXO to HeadlineXAO. The implication, intuitively enough, is that administered price setters have an important role to play in moderating inflation and helping anchor inflation expectations closer to the midpoint of the target.

**Table 3: Granger causality test**

Pairwise Granger Causality Tests

Date: 08/01/18 Time: 13:22

Sample: 2010M01 2017M12

Lags: 3

Null Hypothesis:	Obs	F-Statistic	Prob.
@PCY(IHEADLINEXAO) does not Granger Cause @PCY(IADMINXO)	94	1.57627	0.2009
@PCY(IADMINXO) does not Granger Cause @PCY(IHEADLINEXAO)		2.21152	0.0925

## Conclusion

Although administered price inflation has exceeded headline inflation in the post-2010 period, the wedge has disappeared in recent years. In fact, administered price inflation has been, on average, below headline for the past two years. Instead of obstructing disinflation, administered prices have therefore become a benign influence, and sometimes even a benevolent one. NERSA's recent ruling denying Eskom a double-digit electricity price increase is just one more data point in a persistently favourable trend.

## Annexure A

