Administrative Prices in South Africa –

A Threat to Economic Growth[1]

Coetzee, Clive

Essaram, Lauren Leigh

Gounden, Preshantha,

Khoza Linda

Zulu Sthabiso

KwaZulu-Natal Provincial Government Treasury Department

Treasury House, 9th Floor

145 Commercial Street

Pietermaritzburg

3200

South Africa

Telephone (033) 897-4538

Fax (033) 897-4580

clive.coetzee@kzntreasury.gov.za

[1] The views expressed in this working paper are the views of the authors and might not necessarily reflect the views of the Provincial Treasury.

Introduction

The adverse effects of increasing or high inflation are well known and understood. Countries with comparatively high inflation tend to have weaker long-term economic growth and higher levels of unemployment than countries with comparatively low inflation. Countries that experienced rapid inflation are clear evidence that inflation cannot be taken lightly and can have devastating consequences.

There are numerous factors that cause inflation. These are conveniently classified as either demand pull or cost push factors. These demand pull or cost push factors represent the inflation basket which is measured every month based on the per annum change. Included in the inflation basket are goods and services which prices are directly or indirectly determined by the government or by some government entity and in the main can be classified as cost push factors.

The prices of these goods and services (administrative goods and services) are thus directly or indirectly under the control of the government or the relevant government entity and thus not subject to market forces. The increases of these monopolistic prices in general and based on theory tend to be higher than the increases of non-monopolistic prices. Thus it seems plausible to argue that the prices of administrative goods and services will experience faster or more rapid increases than the prices of goods and services that are subject to market forces.

It can further be argued that the price increases in these administrative goods and services will increase the overall cost or price of the inflation basket and vice versa. The size of the impact of the price increases will largely be dependent on the weights of these prices relative to the total inflation basket. The higher the weight of these administrative prices the larger the impact and vice versa.

The aim of this article is to attempt to quantify the impact of administrative prices on inflation and the economic objectives of South Africa given that the government has set a target of the creation of 5 000 000 jobs in the next 5 years. The hypothesis is that administrative prices are a significant constraint to the economic growth rate of South

Africa through its impact on inflation, interest rates and ultimately private consumption expenditure and savings.

Administered Prices – A Closer Definition

An administered price is defined as the price of a product (goods or service), which is set consciously by an individual producer or group of producers and/or any price, which can be determined or influenced by government, either directly, or through one or other government agencies/institutions without reference to market forces (Statistics South Africa, 2011). This definition essentially encompasses those prices regulated by government, whether the goods/service is provided by government – like refuse removal or water – or by other entities in which the government exercises price control to a greater or lesser extent – like petrol or university fees (Intervest, 2010).

The table below, table 1, indicates the various administered goods and services in South Africa as published by Statistics South Africa (Stats SA). The table also indicates the price setting authority of each of the respective goods or services and the weightings of each of the goods or services relative to the overall inflation basket. For example electricity prices are set by a national government entity, local government and regulated by a government entity and has a weight of 3.12 percent relative to the overall inflation basket. This suggests that electricity consumption accounts for a total of R3.12 of a total consumer goods and services basket of R100. The table also indicates that consumers spend a total of 17.23 percent of their total disposable income on administrative goods and services compared to 16.80 percent spent on food.

Table 1: Administered Goods and Services

Group	Product or Service	Set by	Weight
Housing	**Total**		**3.47**
	Assessment rates	A tax set by Local Government	1.32
	Sanitary fees	Set by local government	0.22
	Refuse removal	Set by Local Government	0.29

	Water	Set by Local Government and Department of Water Affairs and Forestry	1.49
	University boarding fees	Set by University-Government agency	0.15
Fuel and Power	**Total**		3.59
	Electricity	Set by Local Government and regulated by the National Electricity Regulator	3.12
	Paraffin	Regulated by Department of Minerals and Energy	0.47
Medical Care	**Total**		0.1
	Public Hospital	Set by Provincial Government and regulated by Department of Health	0.1
Communications	**Total**		2.65
	Telephone calls	Regulated by the Independent Communication Authority of SA (Icasa)	1.39
	Telephone rent and installation	Regulated by the Independent Communication Authority of SA (Icasa)	0.28
	Postage	Regulated by Government	0.02
	Cell connection fees	Regulated by the Independent Communication Authority of SA (Icasa)	0.21
	Cell calls	Regulated by the Independent Communication Authority of SA (Icasa)	0.75
Education	**Total**		2.59
	School fees	Set by Government Agencies (Public Schools)	1.51
	Universities/ Technicons/ Colleges	Set by Government Agencies (Universities and Technicons)	1.08
Transport	**Total**		4.6
	Petrol	Regulated by the Department of Minerals and Energy	4.29
	Public Transport-municipal buses	Set by Local Government	0.1

	Public Transport-Trains	Set by Government Agency	0.13
	Motor License and registration	Set by Provincial Government and regulated by Department of Health	0.08
Recreation and entertainment	**Total**		0.23
	Television license	Set by Government Agency	0.23
TOTAL			**17.23**

(Source: Statistics South Africa)

The table below, table 2 indicates the contribution of the different administrative goods and services to the annual percentage change in the administered prices over the 12 month period. The table indicates for example that unleaded petrol contributed the most to the annual percentage change in administrative prices and that administrative prices increased on an annualized basis by 11.6 percent in April 2010 and by 10.9 percent in March 2011.

Table 2: Contribution of different groups to the annual percentage change in the administered prices

	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11
Water supply	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Refuse collection	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sewage collection				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Assessment rates	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.1
Electricity	3.8	3.8	3.8	3.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Paraffin	-0.1									0.1	0.1	0.1
Unleaded petrol	3.6	4.1	2.8	1.1	1.4	0.1	1.3	1.0	1.5	2.5	2.7	3.7
Motor vehicle registration fees				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Train fees	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Telephone	0.3	0.3	0.3	0.3	0.0							0.1
Cell phone fees	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Television License	0.1	0.1	0.1	0.1	0.0							

Primary and secondary school fees	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
University fees	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6
University boarding fees	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Residual		-0.1	-0.1	-0.1	-0.1		0.1				0.1	0.0
CPI for administered prices	**11.6**	**12.1**	**10.8**	**8.6**	**8.3**	**7.1**	**8.4**	**8.9**	**8.5**	**9.6**	**9.9**	**10.9**

(Source: Statistics South Africa, Own calculations)

Table 3 indicates the contribution of administrative prices to the total annual percentage change in total consumer prices for the 12 month period. Administrative prices contributed on average by 1.6 percent to the total inflation rate over the period. The contributions are calculated by multiplying the total weighting of administrative goods and services relative to the total inflation basket (17.23 percent) by the total annual administrative price increases (table 2).

Table 3: Contribution of administrative prices to the annual percentage change in the total prices and for the total country

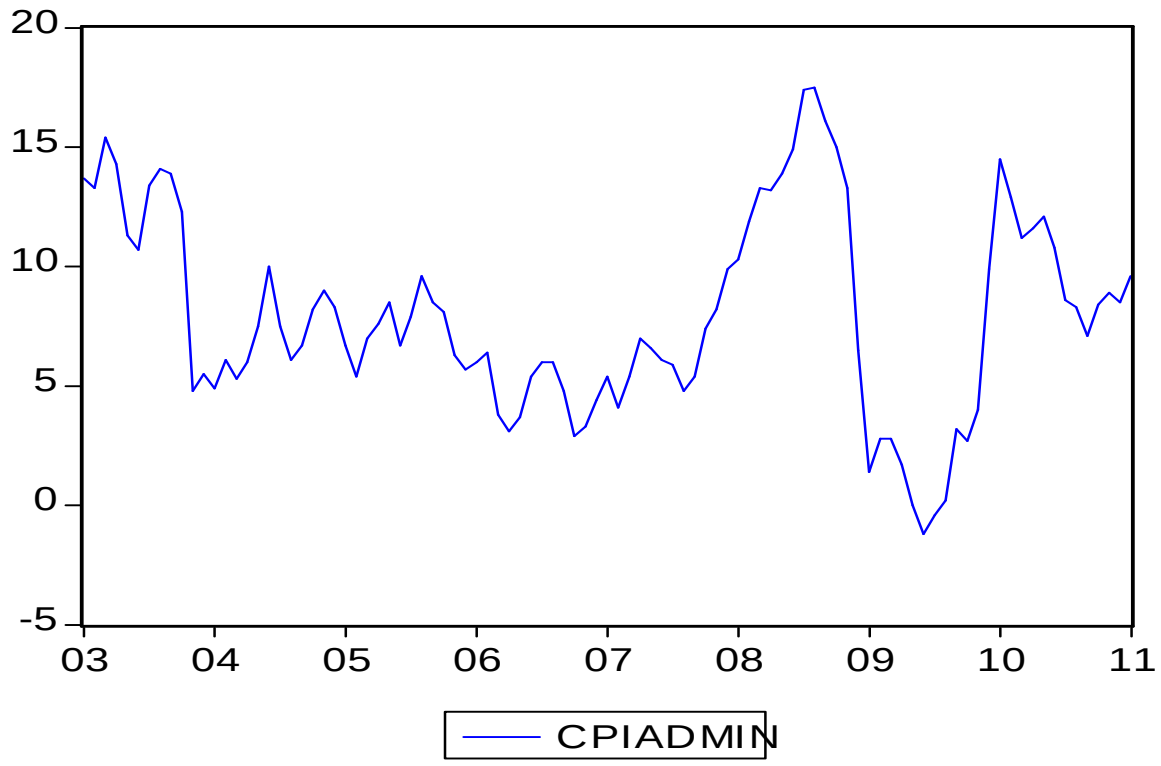
	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11
Contribution of Administrative prices to total CPI	**2.0**	**2.1**	**1.9**	**1.5**	**1.4**	**1.2**	**1.4**	**1.5**	**1.5**	**1.7**	**1.7**	**1.9**

Administered Prices – Behaviour over Time

Graph 1 indicates the behavior or movement of administrative prices or administrative inflation from January 2003 to January 2011. The graph suggests that administrative prices increased by between 5 and 10 percent from 2004 to 2007 but increased significantly during 2008. Administrative price increases then significantly decreased

during the latter part of 2008 and first couple of months during 2009. Increases in administrative prices averaged between 8 and 10 percent during 2010.

Graph 1: Behaviour of Administrative Price

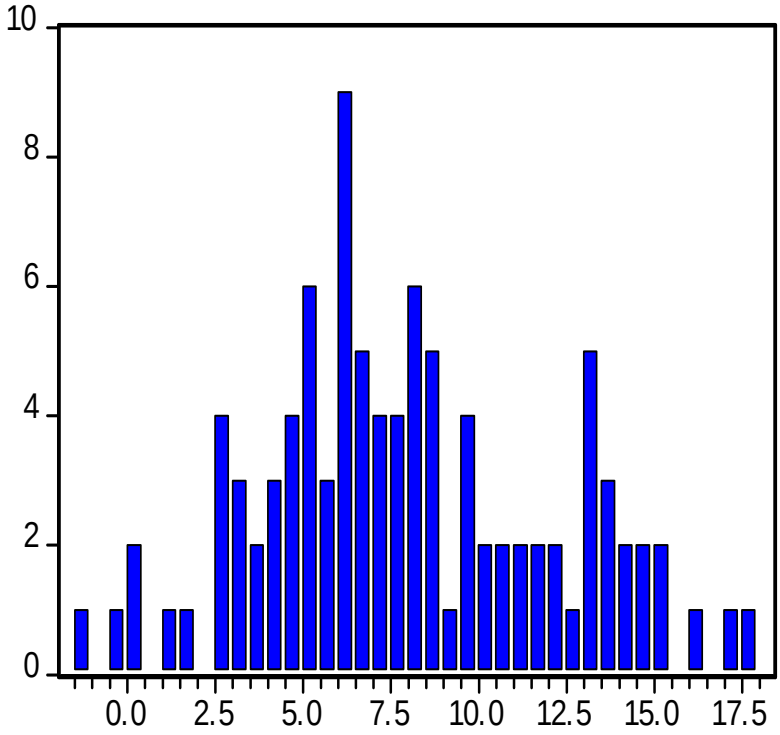


(Source: SA Reserve Bank, 2011)

Exhibit 1 displays some basic descriptive statistics about administrative price increases. The exhibit indicates that:

- Administrative prices increased on average by 7.95 percent per annum over the period
- The maximum increase in administrative prices where 17.5 percent were as the minimum were -1.2 percent
- Administrative price increases were fairly volatile as suggested by the standard deviation statistic of 4.17%
- Administrative price increases seem to follow a random distribution as suggested by the probability statistics of the Jarque-Bera goodness-of-fit measure

Exhibit 1: Basic Descriptive Statistics



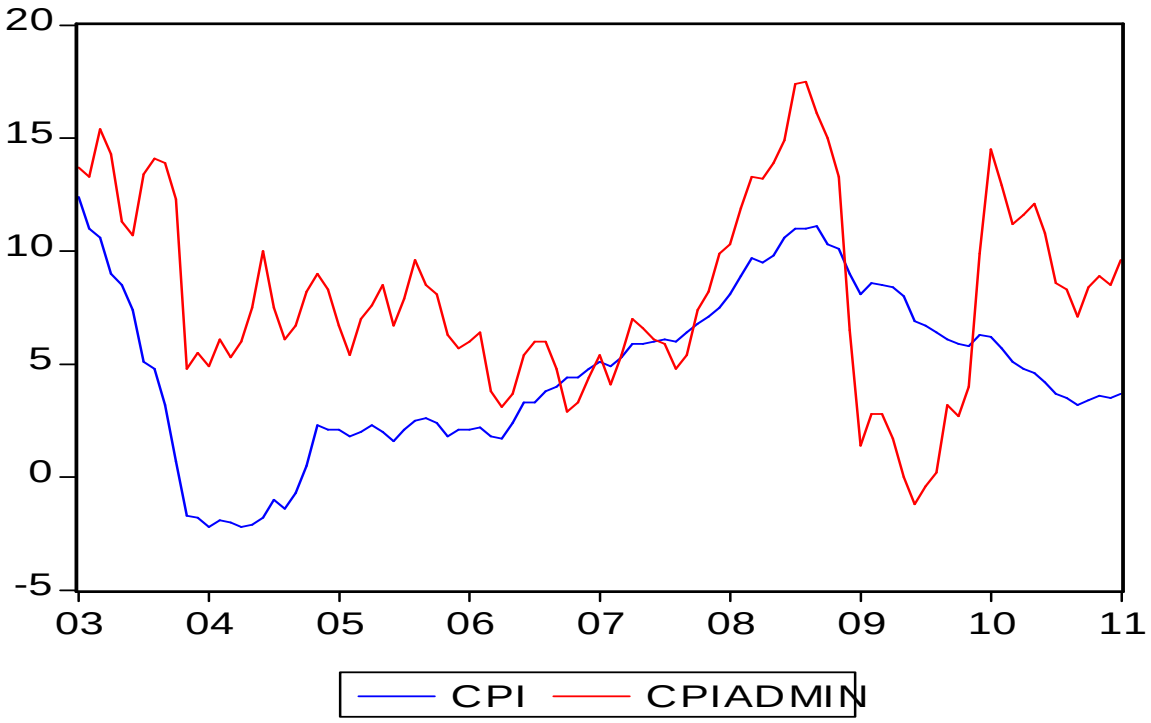
Series: CPIADMIN	
Sample 2003:01 2011:01	
Observations 97	
Mean	7.950515
Median	7.400000
Maximum	17.50000
Minimum	-1.200000
Std. Dev.	4.170185
Skewness	0.245317
Kurtosis	2.526278
Jarque-Bera	1.879918
Probability	0.390644

Administered Prices – Relationship with Total Consumer Prices

Administrative prices have a weighting of 17.23 percent with total consumer prices thus it is a very significant element or contributor to the total inflation rate of the economy. Therefore initiatively administrative prices do have a significant relationship with total inflation. Administrative price increases thus will put pressure on the inflation rate to increase and vice versa.

Graph 2 displays the behavior or movement of administrative price increases and total consumer price increases over the period. The graph suggests that increases in administrative prices on average were higher than the increases in total consumer prices. This is supported by the data table (exhibit 2) which indicates that administrative prices recorded higher increases than total consumer prices in 8 of the 9 years. Administrative prices increased on average by 3.3 percentage points more than total consumer prices over the period (7.95 percent vs. 4.69 percent).

Graph 2: Behaviour of Administrative Price and Total Consumer Prices



(Source: SA Reserve Bank, 2011)

Exhibit 2: Behaviour of Administrative Price and Total Consumer Prices

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
							2003						2003
CPI	12.4	11.0	10.6	9.0	8.5	7.4	5.1	4.8	3.2	0.7	-1.7	-1.8	**5.8**
CPIADMIN	13.7	13.3	15.4	14.3	11.3	10.7	13.4	14.1	13.9	12.3	4.8	5.5	**11.9**
							2004						2004
CPI	-2.2	-1.9	-2.0	-2.2	-2.1	-1.8	-1.0	-1.4	-0.7	0.5	2.3	2.1	**-0.9**
CPIADMIN	4.9	6.1	5.3	6.0	7.5	10.0	7.5	6.1	6.7	8.2	9.0	8.3	**7.1**
							2005						2005
CPI	2.1	1.8	2.0	2.3	2.0	1.6	2.1	2.5	2.6	2.4	1.8	2.1	**2.1**
CPIADMIN	6.7	5.4	7.0	7.6	8.5	6.7	7.9	9.6	8.5	8.1	6.3	5.7	**7.3**
							2006						2006
CPI	2.1	2.2	1.8	1.7	2.4	3.3	3.3	3.8	4.0	4.4	4.4	4.8	**3.2**
CPIADMIN	6.0	6.4	3.8	3.1	3.7	5.4	6.0	6.0	4.8	2.9	3.3	4.4	**4.6**
							2007						2007
CPI	5.1	4.9	5.3	5.9	5.9	6.0	6.1	6.0	6.4	6.8	7.1	7.5	**6.1**

CPIADMIN	5.4	4.1	5.4	7.0	6.6	6.1	5.9	4.8	5.4	7.4	8.2	9.9	**6.4**
							2008						2008
CPI	8.1	8.9	9.7	9.5	9.8	10.6	11.0	11.0	11.1	10.3	10.1	9.0	**9.9**
CPIADMIN	10.3	11.9	13.3	13.2	13.9	14.9	17.4	17.5	16.1	15.0	13.3	6.5	**13.6**
							2009						2009
CPI	8.1	8.6	8.5	8.4	8.0	6.9	6.7	6.4	6.1	5.9	5.8	6.3	**7.1**
CPIADMIN	1.4	2.8	2.8	1.7	0.0	-1.2	-0.4	0.2	3.2	2.7	4.0	9.9	**2.3**
							2010						2010
CPI	6.2	5.7	5.1	4.8	4.6	4.2	3.7	3.5	3.2	3.4	3.6	3.5	**4.3**
CPIADMIN	14.5	12.9	11.2	11.6	12.1	10.8	8.6	8.3	7.1	8.4	8.9	8.5	**10.2**
							2011						2011
CPI	3.7	--	--	--	--	--	--	--	--	--	--	--	**3.7**
CPIADMIN	9.6	--	--	--	--	--	--	--	--	--	--	--	**9.6**

The results of the test for equality of the means between the two series are displayed in the following exhibit (exhibit 3). The results (p=0.0000) clearly indicate that the hypothesis of equality of the means are rejected suggesting that the average increase in administrative prices are statistically different to the average increase in total consumer prices. Thus suggests that administrative price increases leads total consumer price increases.

Exhibit 3: Test for Equality of the Means

Method	df	Value	Probability
t-test	192	5.801395	0.0000
Anova F-statistic	(1, 192)	33.65618	0.0000

The results of the equality of the means test are support by the below correlogram (exhibit 4). The cross-correlation test suggests that administrative price increases leads increases in total consumer prices and not the other way around.

Exhibit 4: Cross-Correlation Test

Correlations are asymptotically consistent approximations

CPI,CPIADMIN(-i)	CPI,CPIADMIN(+i)	i	lag	lead
. |**** |	. |**** |	0	0.3680	0.3680
. |*** |	. |**** |	1	0.3111	0.3547
. |** |	. |*** |	2	0.2431	0.3211
. |** |	. |*** |	3	0.1779	0.2689
. |*. |	. |** |	4	0.1273	0.2256
. |*. |	. |** |	5	0.0766	0.1849
. | . |	. |*. |	6	0.0131	0.1429
.*| . |	. |*. |	7	-0.0443	0.0888
.*| . |	. | . |	8	-0.0932	0.0403
.*| . |	. | . |	9	-0.1246	-0.0048
**| . |	.*| . |	10	-0.1532	-0.0508
**| . |	.*| . |	11	-0.1737	-0.0557
**| . |	.*| . |	12	-0.1858	-0.0494

The Granger Causality test has also been performed and the results are displayed in exhibit 5. The results again support the argument that administrative price increases leads total consumer price increases.

Exhibit 5: Cross-Correlation Test

Pairwise Granger Causality Tests
Sample: 2003:01 2011:01
Lags: 6

Null Hypothesis:	Obs	F-Statistic	Probability
CPIADMIN does not Granger Cause CPI	91	3.59983	0.00334
CPI does not Granger Cause CPIADMIN		1.71054	0.12960

The results of the various calculations and tests indicate that administrative prices increased at statistically significant higher rates than total consumer prices and that administrative price increases leads total consumer price increases.

Administered Prices – Implications for Total Consumer Prices

The impact of increases in administrative prices on total consumer prices can be quantified by estimating a regression equation. A step-by-step methodology will be employed in order to ensure that the results are statistically significant and therefore relevant and accurate.

The first step in estimating a regression equation is to ensure that the data of the variables to be included are stationary and of the same order.

1) Test for stationarity of the variables in level format

The data of the two variables, i.e., administrative price increase (cpiadmin) and total consumer prices increase (cpi) were tested for stationarity using the autocorrelation test and the Augmented Dickey Fuller unit root test. The results of the autocorrelation test for both the variables are displayed in exhibit 6.

Exhibit 6: Autocorrelation Test, CPIADMIN & CPI

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.|****** |	.|****** |	1	0.886	0.886	78.593	0.000
.|***** |	**|. |	2	0.714	-0.334	130.15	0.000
.|**** |	.|. |	3	0.554	0.029	161.49	0.000

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.|*******	.|*******	1	0.958	0.958	91.790	0.000
.|*******	*|. |	2	0.905	-0.153	174.58	0.000
.|******|	*|. |	3	0.840	-0.165	246.62	0.000

The results of the unit root test for the variables are displayed in exhibit 7.

Exhibit 7: Unit Root Test, CPIADMIN & CPI

Lag Length: 1 (Automatic based on SIC, MAXLAG=11)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.582648	0.1064
Test critical values:	1% level	-2.589531	
	5% level	-1.944248	
	10% level	-1.614510	

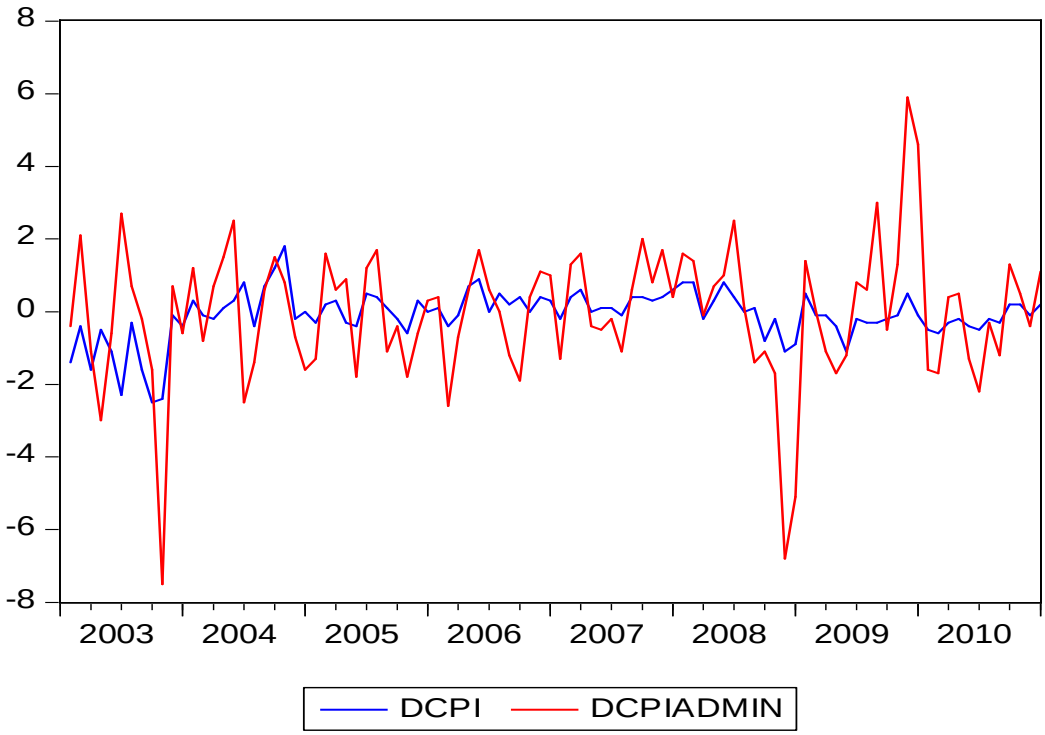
		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.563379	0.1104
Test critical values:	1% level	-2.589531	
	5% level	-1.944248	
	10% level	-1.614510	

The results indicate that the variables are non-stationary in level format. Non-stationarity can often be removed by differencing the data.

2) Differencing the data

Differencing the data is to calculate the changes in the data i.e., differenced value = actual value – actual value (-1). The 1st difference data of the two variables is displayed in the graph below. The graph suggests that the variables have been transformed so that it displays stationarity

Graph 2: Data in 1st Difference Format



3) Test for stationarity of the differenced variables

The variables in the 1st difference format seem to be stationary as indicated in exhibit 8 and 9.

Exhibit 8: Autocorrelation Test, D(CPIADMIN) & D(CPI)

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.|** |	.|** |	1	0.296	0.296	8.6987	0.003
*|. |	*|. |	2	-0.096	-0.202	9.6264	0.008
*|. |	.|. |	3	-0.085	0.010	10.365	0.016

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.|**** |	.|**** |	1	0.521	0.521	26.904	0.000
.|*** |	.|* |	2	0.401	0.177	42.968	0.000
.|** |	.|* |	3	0.352	0.125	55.521	0.000

Exhibit 9: Unit Root Test, D(CPIADMIN) & D(CPI)

Lag Length: 1 (Automatic based on SIC, MAXLAG=11)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.019114	0.0000
Test critical values:	1% level	-4.058619	
	5% level	-3.458326	
	10% level	-3.155161	

Lag Length: 0 (Automatic based on SIC, MAXLAG=11)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.555298	0.0001
Test critical values:	1% level	-4.057528	
	5% level	-3.457808	
	10% level	-3.154859	

Once satisfied that the variables are indeed stationary it is possible to specify and estimate the regression equation.

4) Specify and estimate a regression equation

The regression equation is specified and estimated as indicated in exhibit 10.

Exhibit 10: Regression Equation

Estimation Equation:
==========
D(CPI) = C(1) + C(2)*D(CPIADMIN) + C(3)*D(CPIADMIN(-26))

Substituted Coefficients:

==========
D(CPI) = 0.0181272325111 + 0.157997935285*D(CPIADMIN) - 0.0507477312088*D(CPIADMIN(-26))

The variables included are:

Total Consumer Price increase (dependent variable)

Administrative Price increase

Administrative Price increase lagged 26 periods

All the variables are included in their 1st differenced format.

5) Test the regression equation for statistical significance

The results and associated tests for the regression equation are indicated in exhibit 11

Exhibit 11: Results and Associated test of the Regression Equation

Dependent Variable: D(CPI)
Method: Least Squares
Date: 05/17/11 Time: 22:44
Sample (adjusted): 2005M04 2011M01

Variable	Coefficient	t-Statistic	Prob.
C	0.018127	0.452378	0.6525
D(CPIADMIN)	0.157998	7.124234	0
D(CPIADMIN(-26))	-0.05075	-2.01238	0.0482
Adjusted R-squared	0.421872		
Durbin-Watson stat	1.265137		
F-statistic	26.17538		
Prob(F-statistic)	0		

The test indicates that current administrative price increases and the 26 period lagged administrative price increase are statistically significant and they are jointly also statistically significant. The adjusted r-square is fairly low but can be attributed to the fact that the regression equation makes use of differenced data.

The results of the stationarity tests of the residual or error term are displayed in exhibit 12 and 13. The autocorrelation suggests some serial correlation within the residuals but the unit root test confirms that the residuals are in fact stationary.

Exhibit 12: Autocorrelation Test of Error Term

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |*** |	. |*** |	1	0.365	0.365	9.7407	0.002
. |*** |	. |** |	2	0.420	0.330	22.784	0.000
. |*** |	. |** |	3	0.461	0.308	38.782	0.000

Exhibit 13: Unit Root Test of Error Term

Lag Length: 0 (Automatic based on SIC, MAXLAG=10)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.269865	0.0000
Test critical values:	1% level	-4.096614	
	5% level	-3.476275	
	10% level	-3.165610	

It therefore seems that the regression equation is in fact statistically significant and thus can be used in quantifying the relationship between total consumer price increases and administrative price increases.

6) Interpret the regression equation and forecast

The regression equation suggests the following:

- A 1 percent increase in administrative prices will lead to a 0.16 percent increase in total consumer prices

The relationship can be further analyzed by forecasting the total consumer price increase for February 2011 based on the inclusion of an administrative prices increase for February 2011. For example if administrative prices are expected to increase by 10 percent year-on-year during February 2011, total consumer prices will increase by about 4.13 percent during February 2011 year-on-year. If administrative prices are

expected to increase by 6 percent year-on-year during February 2011, total consumer prices will increase by about 3.49 percent during February 2011 year-on-year. Thus the additional 4 percent increase in administrative prices will lead to an additional 0.64 percent increase in total consumer prices.

Therefore administrative price increases lead and cause total consumer prices to increase as well. This has obvious implications for interest rates in South Africa given that the South African Reserve Bank has a 3-6 percent inflation target and uses interest rates as its primary tool to position total consumer prices with the target range.

Administered Prices – Implications for Interest Rates

The implications or impact of high (increases of above the 6 percent year-on-year upper target of the SARB inflation target) administrative price increases on interest rates are somewhat ambiguous in that the SARB does not target administrative prices but total consumer prices. However given the results thus far that suggest that administrative prices have on average increased at a faster rate than total consumer prices, that administrative price increases lead total consumer price increase and that a 1 percent increase in administrative prices will lead to a 0.16 percent increase in total consumer prices, then it is possible to argue that administrative price increases will have an increasing impact on interest rates.

The Taylor rule will be used in an attempt to quantify the relationship between inflation and interest rates and therefore the implications or impact of administrative price increases for interest rates.

The Taylor Rule

The Taylor rule is a monetary-policy rule that stipulates how much the central bank should change the nominal interest rate in response to changes in inflation, output, or other economic conditions. In particular, the rule stipulates that for each 1 percent increase in inflation, the central bank should raise the nominal interest rate by more than one percentage point. The Taylor rule can therefore be used to quantify the impact

of increases in consumer prices on nominal interest rates by assuming the other variables in the equation stays constant. The Taylor rule equation is as follows:

I= r* + pi + 0.5 (pi-pi*) + 0.5 (y-y*)

where:

I = nominal interest rate;

r*= assumed equilibrium real interest;

pi= current inflation rate;

pi*= targeted inflation rate;

y = current economic growth rate;

y*= potential economic growth rate;

0.5= deviation of inflation and output.

Substituting the below values into the equation indicates that the present nominal interest rate should be about 6.9 percent.

r*= 6% (assumed equilibrium real interest rate);

pi= 3.4% (March 2011 actual inflation rate);

pi*= 4.5% (midpoint of the SARB inflation target);

y = 1.09% (quarter 1 2011 seasonal adjusted quarterly economic growth rate);

y*= 5% (assumed full employment economic growth rate).

Assuming the current inflation rate increases by 1 percent to 4.4 percent ceteris paribus, then present interest rates should be about 8.4 percent. Thus the 1 percent increase in inflation according to the Taylor rule will increase interest rates by 1.6 percent.

The following scenario can be used to conceptualize the impact of administrative price increases on interest rates. The scenario incorporates the administrative price increase total consumer price increase relationship as quantified in this article and the total consumer price increase interest rate relationship as suggested by the Taylor rule.

Let's assume administrative prices increase by 6 percent year-on-year which is equal to the upper target level of the SARB inflation target. This will contribute about 0.6 percent to the total consumer price increase. However if administrative prices were to increase by 10 percent year-on-year then administrative price increases will contribute about 1.7 percent to the total consumer price increase. The additional 4 percent increase in administrative prices will add an additional 1.1 percent to total consumer price increase.

The additional 1.1 percent increase in total consumer prices will according to the Taylor rule account for an estimated 1 percent higher nominal interest rate. Thus if administrative prices increased by the 6 percent rather than the 10 percent interest rates could have been 1 percent lower.

Administered Prices – Implications for Household Consumption Expenditure

Total household expenditure on administrative goods and services, total household income, total household expenditure and total household savings in KwaZulu-Natal (KZN) are displayed in the table below (table 4) and are derived from the 2005/2006 Income and Expenditure survey as published by Stats SA.

The table suggests that households in KZN spent almost R13 billion on administrative goods and services during the 2005/2006 survey period which accounts for about 10 percent of total household income and 12.6 percent of total household expenditure during the same period.

Table 4: KZN Income and Expenditure

	Total 2005/2006	As a %
Total KZN household expenditure on administered prices	R 12,923,931,902	
Total KZN Income	R 129,655,627,155	9.97
Total KZN household expenditure (including administered prices)	R 102,595,598,055	12.60
Total KZN Savings	R 27,060,029,100	47.76

(Source: Statistics South Africa, Own Calculations)

The following scenario can be used to demonstrate the implications or impact of high (increases of above the 6 percent year-on-year upper target of the SARB inflation target) administrative price increases on total household consumption expenditure in KZN and based on a couple of assumptions.

The assumptions are as follows:

- Administrative price increases by 6 percent and 10 percent respectively
- Total household income increases by 8 percent
- Total household expenditure to total household income ratio stays constant than in 2005/2006
- Household savings is the difference of total household income and total household expenditure
- Savings are not substituted for the increase in expenditure of administrative goods and services

A 6 and 10 percent increase in administrative prices increase total household expenditure on administrative goods and services to R13.7 billion and R14.2 billion respectively. Total household expenditure on non-administrative goods and services therefore decrease from R97 billion to R96.6 billion or by R517 million as indicated in table 5.

Table 5: KZN Income and Expenditure

	Base Values	Increase of 6%	Increase of 10%
Total KZN expenditure per household on administered prices	R 12,923,931,902	R 13,699,367,816	R 14,216,325,092
Total KZN Income per household	R 140,028,077,327	R 140,028,077,327	R 140,028,077,327
Total KZN expenditure per household (including administered prices)	R 110,803,245,899	R 110,803,245,899	R 110,803,245,899
Total KZN expenditure per household (excluding administered prices)	R 97,879,313,998	R 97,103,878,084	R 96,586,920,808
Total KZN Savings per household	R 29,224,831,428	R 29,224,831,428	R 29,224,831,428
Decrease in economic expenditure	R 516,957,276		

(Source: SA Reserve Bank, Own calculations)

The 10 percent increase in administrative prices compared to a 6 percent increase thus drains the KZN economy by about R517 million in household consumption expenditure. This does not take into account the effect of higher interest rates. However it is possible that households could compensate for the higher prices of administrative goods and services by saving less. Under such a scenario total household consumption expenditure will not decrease but household savings will, which also have significant negative consequences. However let's assume that such a scenario is highly unlikely, therefore the additional increase in administrative prices will decrease total household consumption expenditure on non-administrative goods and services.

Administered Prices – Implications for the KZN Macro Economy

The loss of R517 million worth of household consumption expenditure on non-administrative goods and services has a number of adverse or negative implications for

the KZN macro economy. This can be demonstrated with the use of the KZN Social Accounting Matrix (SAM) based on 2005 values as developed by the author.

Table 6 indicates the total KZN household expenditure per economic sector as derived from the KZN SAM. The table also indicates the percentage contribution of each sector to total household consumption expenditure excluding household consumption expenditure on government services. This is because the loss of total household consumption expenditure is for non-administrative goods and services. The R517 million losses is then allocated to the different economic sectors based on the contributions as calculated. For example total household expenditure in the agriculture sector will be R24 million less, etc.

Table 6: KZN Household Consumption Expenditure by Economic Sector at 2005 values

Social Accounting Matrix: 2005 (R million)	Economic Sector	Total Use of Income Households and NPISH	As a % of Total	Loss of Expenditure
Goods and Services Aggregate Demand	Agriculture	7,309	4.72	24
	Mining and Quarrying	2,684	1.73	9
	Manufacturing	39,856	25.75	133
	Transport, Storage, and Communications	21,711	14.03	73
	Electricity, Gas and Water	4,122	2.66	14
	Construction	4,149	2.68	14
	Wholesale, Retail Trade, Hotel	22,406	14.48	75
	Finance, Real Estate and Business Services	31,526	20.37	105
	Personal Services	10,426	6.74	35
	General Government Services	20,593	0.00	0
	Trade and transport margins	0	0.00	0
	Direct purchases abroad by residents	10,588	6.84	35
Total		154,777	517	517

The losses are incorporated in the SAM and the results are displayed in table 7. The SAM indicates the following:

- Total demand in the KZN economy will be 0.12 percent lower
- Total production in the KZN economy will be 0.12 percent lower
- Total KZN imports will be 0.11 percent lower
- Total value add in the KZN economy will be 0.13 percent lower
- Total employment in the KZN economy will be 0.86 percent lower

Table 7: Macro Economic Impact of a Loss of Household Consumption Expenditure

Social Accounting Matrix: 2005 (R million)	R/m	As a %
Total KZN Demand	-831	0.12%
Total KZN Production	-643	0.12%
Total KZN Import	-188	0.11%
Total KZN Value Added	-285	0.13%
Total KZN Employment	-19,385	0.86%

The above results are based on an unconstrained model of the KZN economy. It is also important to note that the implication of the higher interest rate on total household consumption and business investment have not been incorporated and therefore the implications of high increases in administrative prices in all probability will be greater than what is presented in this article.

Summary and Conclusion

The article suggests that high increases in administrative prices have a number of adverse consequences. High increases are increases above the 6 percent upper target of the SARB inflation target. The article amongst others suggests the following:

- Administrative inflation has been statistically significantly higher than total consumer inflation
- Administrative inflation leads total consumer inflation
- A 1 percent increase in administrative inflation leads to a 0.16 percent increase in total consumer inflation
- Administrative inflation supports higher nominal interest rates
- Administrative inflation deprives the economy from total household consumption expenditure
- Administrative inflation deprives the economy from demand, production, value added and employment

It therefore seems evident that high administrative inflation is a significant constrained in the South African and KwaZulu-Natal economy.

It therefore should be recommended that in light of the national imperative of job creation and economic growth these prices should increase in line with the inflation targeting framework as set by Government themselves.

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