

A COMPARISON OF INFLATION EXPECTATIONS AND INFLATION CREDIBILITY IN SOUTH AFRICA: RESULTS FROM SURVEY DATA

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Abstract

This paper reports a comparison of South African household inflation expectations and inflation credibility surveys undertaken in 2006 and 2008. It tests for possible feed-through between inflation credibility and inflation expectations. It supplements earlier research that focused only on the 2006 survey results. The comparison shows that inflation expectations differed between different income groups in both 2006 and 2008. Inflation credibility differed between male and female respondents, but this difference did not feed through to inflation expectations.

More periodic survey data will be required for developing final conclusions on the possibility of feed-through effects. To this end the structure of credibility surveys should be reconsidered, as a large percentage of respondents indicated that they 'don't know' whether the historic rate of inflation is an accurate indication of price increases.

Key words: inflation, inflation credibility, inflation expectations, inflation surveys, multinomial analysis

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1 Introduction

An earlier paper (Rossouw et al., 2009) assessed South African inflation expectation and inflation credibility surveys undertaken among households in 2006 and tested a hypothesis that inflation expectations and inflation credibility do not vary between gender, population group, age and other characteristics. The main finding was that female respondents recorded a lower degree of acceptance of the credibility of historic inflation figures than male respondents, but that this difference did not feed into inflation expectations. This paper expands on earlier

research in that it includes the results of additional sample years and expands on the characteristics explaining inflation expectations and inflation credibility by means of a logit framework and a multinomial model. This paper tests a hypothesis that sub-categories of households in the surveys exhibit the same linkages between inflation expectations and inflation credibility in 2006 and in 2008. Although preliminary conclusions can be drawn, additional surveys have to be undertaken over time before any time series conclusions will emerge.

This paper summarises in Section 2 the literature on inflation expectations and inflation credibility among individual respondents in

inflation-targeting countries. Section 3 highlights South African surveys of inflation expectations and inflation credibility among individual respondents. The surveys are compared and analysed in Section 4. The conclusions are contained in Section 5.

2

Summary of literature on inflation expectations and inflation credibility¹

This paper draws a distinction between inflation expectations and inflation credibility. *Inflation expectations* are used to describe and/or report views on the expected future trend and movement in price levels and, therefore, inflation. In this paper *inflation credibility* is used to describe and/or report views on past price-level movements and historic inflation, rather than to describe the credibility of monetary policy actions of central banks, as it is often used in the literature (see Mishkin, 2004).

In addition, forward-looking inflation expectations in themselves are somewhat problematic, as these are sometimes also referred to as inflation forecasts. Any distinction between inflation expectations and inflation forecasts is not immediately obvious. The former generally is regarded as subjective surveys of future inflation, while the latter is regarded as calculations of future inflation based on economic or econometric models (see for instance *Collins English Dictionary*, 2000, which describes *expectation* as *anticipate* and *forecast* as *calculate*). This paper attaches the same meaning to inflation expectations and inflation forecasts, as any possible differences are unimportant for this analysis.

Inflation expectations receive considerable attention in the inflation reports of central banks in inflation-targeting countries (see for instance Banco Central de Chile, 2008; SA Reserve Bank, 2008; or Sveriges Riksbank, 2008) and other literature (see for instance Berk, 1999; Forsells & Kenny, 2002; Mankiw, et al., 2003; Powers, 2005; or Samuels 1967).

It is somewhat surprising to find that the available literature pays little attention to the approaches followed in inflation-targeting

countries to measure inflation expectations, given the considerable attention focused on the results of such expectations. While Fracasso et al. (2003) and the Bank of Iceland (2003) compared the monetary policy reports of twenty central banks in terms of clarity of assumptions, inflation forecasts, monetary policy decision-making process, quality of information and quantity of information, they did not assess the methodology used to obtain inflation forecasts or expectations. Likewise, Blinder et al. (2008) and Leeper (2003) assess various aspects of inflation targeting, but do not mention surveys or other techniques employed by central banks to obtain data on inflation expectations. Literature dealing with the communication strategies of central banks (see for instance Bank for International Settlements, 2008; Blinder & Wyplosz, 2005; or Ehrmann & Fratzscher, 2005) does not analyse inflation expectations of different groups in inflation-targeting countries.

The credibility of inflation figures receives little attention in inflation-targeting countries and, therefore, in the academic literature. Only New Zealand and Sweden officially survey inflation credibility (Brachinger, 2005; Jonung, 1981; Palmqvist & Stromberg, 2004; and Reserve Bank of New Zealand, [S.a.]), while representative inflation credibility surveys were undertaken independently in South Africa twice before, in 2006 and 2008 (see Rossouw, 2008; or Rossouw et al., 2009 for discussions of the first of these surveys). The international experience of differences in the credibility of inflation figures between male and female respondents was confirmed by the South African surveys (see for instance Rossouw, 2008; or Rossouw et al., 2009). These surveys are discussed and compared to South African inflation expectations surveys in the next section of this paper.

3

South African surveys of inflation expectations and inflation credibility among individual respondents

The SA Reserve Bank (the Bank) uses the Bureau for Economic Research (BER) to conduct quarterly inflation expectation surveys

among households on its behalf (Kershoff, 2000). Household survey results are not published in the Bank's bi-annual *Monetary Policy Review* (see for instance SA Reserve Bank, 2008), but are published by the BER. The Bank publishes only inflation forecasts of financial market analysts, trade unionists and business enterprises, and inflation expectations calculated from interest rate differentials on different classes of traded assets. The BER uses AC Nielsen to survey individual responses through face-to-face interviews on its behalf as part of omnibus surveys.² This approach ensures a representative survey, which would not be possible by means of telephone or postal surveys (National Gambling Board, 2005). This paper reviews

only survey results for the fourth quarters of 2006 and 2008, thereby aligning it to the two domestic biennial surveys of inflation credibility undertaken during the same periods.

AC Nielsen interviews 2 500 individual respondents. These interviews cover black and white respondents in metropolitan areas, cities, towns and villages, and Asian and coloured respondents in metropolitan areas.³ In each instance average responses exclude the views of respondents who stated that they 'don't know' what the rate of inflation will be and expectations of an inflation rate exceeding 25 per cent. The survey results of the overall and sub-samples for the fourth quarters of 2006 and 2008 are highlighted in Table 1 and Table 2.

Table 1

Average of responses about inflation expectations according to age, gender, population group and the total, 4th quarter 2006 and 2008

	Average expected rate of inflation		% > 25% (% respondents)		% don't know (% respondents)	
	2006	2008	2006	2008	2006	2008
Age						
16-24	4,7	9,1	5,7	4,7	17,8	20,7
25-34	4,7	8,7	5,7	5,2	16,9	18,2
35-49	5,0	9,1	4,9	4,6	23,0	16,4
50+	5,6	9,4	4,7	4,2	22,8	21,8
Gender						
Female	5,0	9,2	5,1	4,6	21,8	18,9
Male	5,0	8,9	5,4	4,8	18,9	19,3
Population group						
Asians	5,4	9,4	6,9	4,6	18,4	13,2
Blacks	4,8	8,8	6,3	5,2	22,8	20,7
Coloured	4,8	8,9	4,9	1,8	20,4	13,6
Whites	5,5	9,8	1,8	4,6	12,9	17,3
Income						
R1-R899	4,7	9,0	8,3	4,6	24,8	25,7
R900-R3 999	4,9	9,2	7,1	5,5	20,6	19,2
R4 000-R7 999	5,2	9,1	3,9	4,1	18,4	15,5
R8 000+	5,1	9,4	2,2	3,3	14,1	12,5
Province						
Western Cape	5,8	9,0	3,4	1,9	18,7	18,8
Eastern Cape	4,7	9,0	2,3	0,5	15,1	5,4
KwaZulu-Natal	4,9	9,1	2,6	5,4	21,2	17,0
Free State	5,2	9,4	6,1	1,2	12,8	34,3
North West/Northern Cape	4,3	10,2	0,0	10,0	26,0	19,4
Mpumalanga/Limpopo	4,9	9,7	6,3	5,0	23,8	28,8
Gauteng	5,0	9,1	7,3	5,3	15,8	14,8
Total	5,0	9,1	5,2	4,7	20,3	19,1

Sources: Bureau for Economic Research, 2006 and 2008.

Explanatory note to Table 1: Although the survey used South African inflation data, Statistics South Africa calculate inflation rates, inter alia for the country's nine provinces. For 2005 the headline (or overall) inflation rate was 2,4 per cent for the Eastern Cape, 2,9 per cent for the Free State, 3,4 per cent for Gauteng, 2,5 per cent for KwaZulu-Natal, 2,1 per cent for Limpopo, 3,7 per cent for Mpumalanga, 3,5 per cent for the North West, 4,2 per cent for the Northern Cape and 3,2 per cent for the Western Cape. For the individual provinces the rates of inflation in 2007 were 6,6 per cent in the Eastern Cape, 6,7 per cent in the Free State, 6,5 per cent for Gauteng, 7,0 per cent in KwaZulu-Natal, 7,4 per cent for Limpopo, 7,7 per cent for Mpumalanga, 7,1 per cent in the North West province, 6,5 per cent in the Northern Cape, and 7,1 per cent in the Western Cape.

Table 2

Average of responses about inflation expectations according to gender, and black and whites, 4th quarter 2006 and 2008

	Male				Female				Black				White			
	2006		2008		2006		2008		2006		2008		2006		2008	
	Mean	Standard error	Mean	Standard error	Mean	Standard error	Mean	Standard error	Mean	Standard error	Mean	Standard error	Mean	Standard error	Mean	Standard error
Male																
Female																
Black	4,73	0,13	8,78	0,18	4,73	0,12	8,89	0,17								
Coloured	4,87	0,32	8,48	0,24	4,88	0,23	9,19	0,28								
Asian	5,51	0,43	9,06	0,38	5,31	0,40	9,73	0,32								
White	5,44	0,17	9,83	0,23	5,48	0,16	9,85	0,23								
Age 16-24	4,65	0,15	9,01	0,20	4,94	0,19	8,97	0,25	4,61	0,13	9,05	0,21	4,69	0,20	9,21	0,33
Age 25-34	4,93	0,22	8,72	0,28	4,53	0,18	9,03	0,27	4,47	0,17	8,53	0,23	5,54	0,33	9,59	0,51
Age 35-49	4,76	0,19	8,81	0,26	5,38	0,21	9,45	0,20	5,01	0,23	8,87	0,25	5,33	0,25	9,69	0,33
Age 50+	5,94	0,24	9,59	0,24	5,28	0,15	9,59	0,21	5,19	0,25	8,85	0,31	5,87	0,19	10,23	0,25
Income R8 000+	5,21	0,18	9,02	0,21	4,94	0,17	9,71	0,22	4,39	0,19	9,07	0,35	5,24	0,15	9,69	0,21
Income R4 000-R7 999	5,04	0,19	9,03	0,23	5,28	0,18	9,23	0,23	4,61	0,19	8,60	0,24	5,75	0,20	10,04	0,34
Income R800-R3 999	4,97	0,17	9,40	0,27	4,96	0,14	8,98	0,22	4,92	0,13	8,71	0,23	5,95	0,42	10,28	0,50
Income R1-799	4,32	0,34	8,85	0,27	5,07	0,44	9,10	0,23	4,51	0,27	9,04	0,21	6,80	1,93	9,53	0,46
Western Cape	5,77	0,28	8,72	0,27	4,76	0,19	9,19	0,28	5,69	0,36	7,76	0,59	7,04	0,30	9,25	0,39
Eastern Cape	4,68	0,28	8,89	0,27	4,94	0,21	9,04	0,25	4,57	0,17	9,01	0,26	5,21	0,47	9,36	0,38
KwaZulu-Natal	4,85	0,22	8,98	0,23	5,15	0,37	9,25	0,23	4,31	0,14	8,25	0,20	5,34	0,31	9,97	0,42
Free State	5,25	0,43	9,28	0,48	4,29	0,27	9,48	0,59	4,82	0,41	7,87	0,44	5,75	0,34	11,18	0,55
North West/ Northern Cape	4,23	0,20	10,42	0,58	4,85	0,34	10,07	0,57	4,13	0,22	10,32	0,53	4,53	0,23	10,36	0,66
Mpumalanga/ Limpopo	4,89	0,30	9,96	0,39	4,94	0,16	9,46	0,36	4,90	0,35	9,55	0,30	4,83	0,26	10,35	0,63
Gauteng	5,04	0,17	8,98	0,24	5,69	0,36	9,25	0,21	4,90	0,30	8,82	0,22	5,03	0,19	9,73	0,28

Sources: Bureau for Economic Research, 2006 and 2008; own calculations.

Inflation credibility among representative samples of individual South African respondents was independently surveyed twice before, in the fourth quarters of 2006 and 2008. Similar challenges as those facing the BER had to be overcome to ensure representative surveys of individual respondents. These difficulties were overcome by using Ipsos-Markinor (known as Markinor at the time of the research undertaken in 2006) for the surveys. Ipsos-Markinor conducts biannual omnibus surveys of individual respondents by means of personal interviews. At a cost, additional questions can be added to

these surveys. These surveys cover 3 500⁴ respondents and results can be disaggregated in terms of gender, income, employment status, etc.

The first survey was planned between August and October 2006 and undertaken in October and November 2006. The second survey was planned in the spring of 2008 and conducted in October and November 2008. It is important to keep the planning time frame in mind, as the latest available historic inflation data at the time of planning the research was used for sampling purposes. Salient features of the sampling results are summarised in Table

3, Table 4 and Table 5. In both instances the large percentage of 'don't know' responses are quite disconcerting, particularly when compared to the considerably lower percentage

of similar responses in the inflation expectation surveys. It is also not possible to ascertain whether respondents answering 'no' perceived higher or lower historic inflation.

Table 3

Responses about inflation credibility according to age, gender, population group and the total, 4th quarter 2006

	Number and % accepting inflation as accurate		Number and % not accepting inflation as accurate		Number and % don't know	
	N	%	N	%	N	%
Age						
16-24	151	18,3	211	25,5	465	56,2
25-34	158	20,7	215	28,2	390	51,1
35-49	196	19,0	306	29,7	527	51,2
50+	140	16,0	267	30,5	467	53,4
Gender						
Female	254	14,6	457	26,2	1 034	59,3
Male	391	22,4	542	31,0	815	46,6
Population group						
Asians	31	19,6	65	41,1	62	32,9
Blacks	364	14,8	559	22,7	1 540	62,5
Coloured	70	24,6	93	32,6	122	42,8
Whites	180	30,7	282	48,0	125	21,3
Income						
R1-R799	81	13,0	141	22,7	400	64,3
R800-R3 999	186	15,9	301	25,9	676	58,1
R4 000-R7 999	84	20,2	149	35,9	182	43,9
R8 000+	171	27,3	222	35,5	233	37,2
Province						
Western Cape	103	24,6	174	41,6	141	33,4
Northern Cape	8	16,0	16	32,0	26	52,0
Free State	34	17,1	48	24,3	116	58,6
Eastern Cape	54	10,8	125	25,0	321	64,2
KwaZulu-Natal	113	16,2	191	27,3	394	56,5
Mpumalanga	26	15,9	66	40,2	72	43,9
Limpopo	30	10,8	35	12,5	214	76,7
Gauteng	254	25,4	285	28,4	463	46,2
North West	23	12,5	59	32,0	102	55,5
Education						
No schooling	6	2,9	31	15,2	167	81,9
Some schooling	298	14,9	479	24,0	1 218	61,1
Matric	202	23,9	307	36,3	336	39,8
Artisan/Technikon/ technical	87	34,0	77	30,1	92	35,9
University degree/ professional	51	27,0	103	54,5	35	18,5
Total	645	18,5	999	28,6	1 849	52,9

Source: Ipsos-Markinor, 2006.

Table 4

Responses about inflation credibility according to age, gender, population group and the total, 4th quarter 2008

	Number and % accepting inflation as accurate		Number and % not accepting inflation as accurate		Number and % don't know	
	N	%	N	%	N	%
Age						
16-24	155	18,1	203	23,7	499	58,2
25-34	101	12,6	207	25,8	493	61,6
35-49	155	15,6	292	29,6	541	54,8
50+	119	14,3	196	23,5	520	62,2
Gender						
Female	238	13,7	438	25,1	1 068	61,2
Male	292	16,8	460	26,5	56,7	985
Population group						
Asians	17	14,5	54	46,2	46	39,3
Blacks	370	14,2	530	20,3	1 711	65,5
Coloured	64	17,0	149	39,5	164	43,5
Whites	79	21,0	165	43,9	132	35,1
Income						
R1-R799	15	6,2	39	15,9	190	77,9
R800-R3 999	191	13,0	309	21,0	974	66,0
R4 000- R7 999	78	19,8	116	29,4	201	50,8
R8 000+	128	21,9	240	41,1	216	37,0
Province						
Western Cape	82	20,2	160	39,3	165	40,5
Northern Cape	5	8,3	7	11,7	48	80,0
Free State	29	15,5	23	12,3	135	72,2
Eastern Cape	42	8,9	77	16,2	355	74,9
KwaZulu-Natal	94	13,9	195	28,8	389	57,4
Mpumalanga	9	5,4	41	24,4	118	70,2
Limpopo	24	9,9	72	29,8	146	60,3
Gauteng	221	20,0	278	25,2	605	54,8
North West	24	14,9	45	28,0	92	57,1
Education						
No schooling	8	4,3	17	9,1	161	86,6
Some schooling	264	13,0	452	22,4	1 304	64,6
Matric	168	18,6	276	30,6	458	50,8
Artisan/Technikon/technical	47	22,4	76	36,2	87	41,4
University degree/professional	40	26,5	72	47,7	39	25,8
Total	530	15,2	898	25,8	2 053	59,0

Source: Ipsos-Markinor, 2008.

Table 5

Responses about inflation credibility according to gender and black and white population groups,
4th quarter 2006 and 2008

Male			Female			Black			White														
2006			2008			2006			2008			2006			2008								
Yes	No	Don't know	Yes	No	Don't know	Yes	No	Don't know	Yes	No	Don't know	Yes	No	Don't know	Yes	No	Don't know	Yes	No	Don't know			
Black																							
17,70	24,84	57,46	15,63	20,79	63,58	11,91	20,60	67,50	12,68	19,80	67,52												
Coloured																							
29,29	36,43	34,29	20,00	40,56	39,44	20,00	28,97	51,03	14,21	38,58	47,21												
Asian																							
24,05	46,84	29,11	11,48	52,46	36,07	15,19	35,44	49,37	17,86	39,29	42,86												
White																							
37,22	48,87	13,92	24,16	45,51	30,34	23,38	47,12	29,50	18,18	42,42	39,39												
Age 16-24																							
21,97	27,13	50,90	19,74	24,12	56,14	13,91	23,62	62,47	16,21	23,19	60,60	15,42	22,75	61,83	17,70	21,49	60,81	35,37	41,46	23,17	26,19	30,95	42,86
Age 25-34																							
23,22	29,55	47,23	12,66	25,84	61,50	18,23	26,82	54,95	12,56	25,85	61,59	17,97	25,82	56,21	12,67	22,06	65,28	36,00	41,33	22,67	18,37	46,94	34,69
Age 35-49																							
23,47	32,94	43,59	17,49	29,84	52,67	14,75	26,63	58,62	13,94	29,28	56,77	13,91	22,90	63,19	15,13	22,77	62,10	34,72	46,11	19,17	18,85	46,72	34,43
Age 50+																							
20,67	34,13	45,19	16,67	25,74	57,60	11,79	27,29	60,92	11,94	21,31	66,74	11,26	18,58	70,16	10,11	13,30	76,59	24,05	54,01	21,94	22,09	44,17	33,74
Income R8 000+																							
32,50	38,13	29,38	24,10	40,39	35,50	21,90	32,68	45,42	19,49	41,88	38,63	16,89	21,78	61,33	24,00	27,56	48,44	31,34	47,89	20,77	25,12	45,02	29,86
Income R4 000-R7 999																							
26,60	38,42	34,98	21,80	27,96	50,24	14,15	33,49	52,36	17,39	30,98	51,63	16,73	30,55	52,73	20,14	25,00	54,86	35,59	52,54	11,86	12,50	54,17	33,33
Income R800-R3 999																							
17,69	27,72	54,59	14,54	22,58	62,88	14,26	24,00	61,74	11,44	19,41	69,15	14,62	23,07	62,31	12,39	19,15	68,47	30,00	52,50	17,50	23,08	38,46	38,46
Income R1-799																							
18,56	25,09	56,36	5,10	13,27	81,63	8,16	20,54	71,30	6,85	17,81	75,34	12,76	19,70	67,54	6,19	15,04	78,76	22,45	53,06	24,49	0,00	0,00	0,00
Western Cape																							
29,05	44,76	26,19	23,38	38,81	37,81	20,19	38,46	41,35	16,99	39,81	43,20	9,57	46,81	43,62	20,37	16,67	62,96	32,65	51,02	16,33	20,00	44,00	36,00
Northern Cape																							
24,00	32,00	44,00	6,67	10,00	83,33	8,00	32,00	60,00	10,00	13,33	76,67	20,69	31,03	48,28	16,00	12,00	72,00	40,00	60,00	0,00	0,00	0,00	0,00
Free State																							
20,20	25,25	54,55	17,20	12,90	69,89	14,14	23,23	62,63	13,83	11,70	74,47	13,82	17,76	68,42	14,72	8,59	76,69	30,23	46,51	23,26	21,74	39,13	39,13
Eastern Cape																							
12,80	28,40	58,80	9,28	16,46	74,26	8,80	21,60	69,60	8,44	16,03	75,53	6,77	17,79	75,44	6,92	11,03	82,05	27,66	55,32	17,02	21,21	51,52	27,27
KwaZulu-Natal																							
22,64	30,37	46,99	15,93	30,68	53,39	9,74	24,36	65,90	11,80	26,84	61,36	13,48	23,44	63,09	14,08	23,22	62,71	29,63	48,15	22,22	6,67	70,00	23,33
Mpumalanga																							
17,07	40,24	42,68	8,33	25,00	66,67	14,63	40,24	45,12	2,38	23,81	73,81	15,15	31,82	53,03	2,82	15,49	81,69	20,00	80,00	0,00	23,81	76,19	0,00
Limpopo																							
10,71	15,00	74,29	10,74	28,10	61,16	10,79	10,07	79,14	9,09	31,40	59,50	10,83	12,64	76,53	10,00	29,58	60,42	0,00	0,00	100,00	0,00	50,00	50,00
Gauteng																							
30,54	30,74	38,72	20,83	26,45	52,72	20,16	26,15	53,69	19,20	23,91	56,88	23,58	22,59	53,84	19,65	22,21	58,14	31,15	43,03	25,82	23,44	39,06	37,50
North West																							
11,96	32,61	55,43	20,00	28,75	51,25	13,04	31,52	55,43	9,88	27,16	62,96	9,76	31,71	58,54	13,97	30,15	55,88	35,00	35,00	30,00	20,00	16,00	64,00
No schooling																							
2,33	13,95	83,72	6,52	7,61	85,87	3,39	16,10	80,51	2,13	10,64	87,23	3,03	15,66	81,31	3,89	6,67	89,44	0,00	0,00	0,00	0,00	100,00	0,00
Some schooling																							
18,00	26,38	55,62	13,89	24,04	62,07	12,00	21,73	66,27	12,28	20,79	66,92	13,22	21,37	65,41	12,18	19,21	68,61	27,78	44,44	27,78	17,33	40,00	42,67
Matric																							
29,43	37,24	33,33	20,77	31,60	47,63	18,05	35,37	46,59	16,56	29,63	53,81	19,15	28,02	52,82	18,78	24,38	56,84	30,74	50,00	19,26	20,00	41,88	38,13
Artisan/Technikon/technical																							
35,62	34,25	30,14	22,58	30,65	46,77	31,82	24,55	43,64	22,09	44,19	33,72	30,58	23,97	45,45	26,13	25,23	48,65	39,45	35,78	24,77	20,34	45,76	33,90
University degree/professional																							
32,32	58,59	9,09	32,56	40,70	26,74	21,11	50,00	28,89	18,46	56,92	24,62	28,00	38,00	34,00	28,57	42,86	28,57	25,00	60,19	14,81	28,95	47,37	23,68

Sources: Ipsos-Markinor, 2006 and 2008; own calculations.

4

Comparison and analysis of inflation expectation and inflation credibility surveys

4.1 Comparison of survey descriptions

The inflation expectation and inflation credibility surveys can be compared in terms of a number of salient features. The most obvious difference pertains to the statement and question raised with respondents. For the first period under review (the last quarter of 2006), respondents in the inflation expectations survey were asked to respond to 'over the past five years prices increased by on average 5,1 per cent per year. During 2005 prices increased by 3,5 per cent. By how much do you expect prices in general to increase in 2006?' (Bureau for Economic Research, 2006: 19). For the second review period (last quarter of 2008) respondents were asked to respond to 'over the past five years prices increased by on average 4,5 per cent per year. During 2007 prices increased by 7,0 per cent. By how much do you expect prices in general to increase in 2008?' (Bureau for Economic Research, 2008: 19).

In 2006 the statement and question put to respondents in the inflation credibility survey was 'South Africa's official rate of inflation (CPI) was 5,4 per cent in August 2006. Do you think this is a true reflection of average price increases?' (Markinor, 2006). In 2008 respondents had to respond to a statement and question that 'South Africa's official rate of inflation (CPI) was 13,7 per cent in August 2008. Do you think this is a true reflection of average price increases?' (Ipsos-Markinor, 2008).

The most interesting finding in 2006 was in respect of gender. While a larger number and percentage of male respondents than female respondents accepted the credibility of historic inflation figures, a similar difference was not recorded with inflation expectations. Male and female respondents recorded the same inflation expectations in 2006. The inflation credibility survey conducted in 2008 again shows that female respondents attach lower credibility to historic inflation figures than male respondents. In this instance the lower

credibility feeds into higher inflation expectations as is evidenced by the survey results. Females expected inflation at a level of 9,2 per cent, while male respondents expected inflation at a level of 8,9 per cent.

In both 2006 and 2008, higher monthly income earners had higher inflation expectations. In 2006 respondents in the Western Cape, the Free State and Gauteng had the highest inflation expectations, while in 2008, respondents in the North West/Northern Cape, Mpumalanga/Limpopo and the Free State had the highest inflation expectations.

In terms of inflation credibility and income group in both 2006 and 2008, most of those in the R8 000+ income group accepted inflation as accurate. The largest share of those in the two lowest income groups responded that they 'don't know' in 2006 and 2008. Based on the demographical breakdown the largest share of those respondents who accepted inflation as accurate in 2006, were those in Gauteng and the Western Cape. When considering respondents' education levels, of those with no schooling and some schooling, between 60 and 80 per cent of respondents reported that they 'don't know', while of those who had higher educational attainment, around 40 per cent reported that they 'don't know' in 2006, and 50 per cent in 2008. Overall, more respondents with a higher education level reported that they accept historic inflation as accurate. It should be noted that domestic inflation was higher in 2008 than in 2006. In terms of a comparison of the responses from these two surveys, it transpires that the acceptance of historic inflation figures as accurate is lower in a low-inflation environment, than in a high-inflation environment.

4.2 Determinants of inflation expectations and inflation credibility

Logistic regression results are reported in Table 6 and Table 7 for inflation expectations and inflation credibility, respectively. The model for inflation expectations includes population group, gender, geography (provinces), income groups and age. The dependent variable was coded 1 for inflation expectations between 26 per cent and 100 per cent, and 0 for inflation expectations lower

than or equal to 25 per cent. The categorical variables are black males between the ages of 25 and 34 living in the Western Cape, and who earned an income higher than R8 000 per month. Based on the z-statistics, the results can be interpreted as follows:

- Compared to black respondents, Asians were more likely to expect an inflation rate of between 25 per cent and 100 per cent in 2006, while white respondents were less likely. In 2008, however, Asians were less likely, compared to black respondents, to expect an inflation rate of between 25 per cent and 100 per cent.
- In 2006, compared to the Western Cape, respondents in Gauteng were more likely to expect a rate of inflation between 25 per cent and 100 per cent. In 2008, respondents in Eastern Cape were less likely to expect a rate of inflation between 25 per cent and 100 per cent, while respondents in KwaZulu-Natal and the North West/ Northern Cape were more likely to expect inflation between 25 and 100 per cent, compared to the Western Cape.
- Those respondents who were in the lowest and second-lowest income categories were more likely to expect inflation between 25 and 100 per cent in 2006 and 2008.

Variables included in the logistic model for inflation credibility were population group, gender, province, income, age and education. The reference group is black males between the ages of 25 and 34, with no schooling, living in the Western Cape, and who earned more than R8 000 per month. The results can be interpreted as follows:

- In 2006, whites were less likely to accept the inflation rate as accurate, compared to black respondents, while coloureds were more likely to accept the inflation rate as accurate, compared to black respondents.
- Females were less likely to accept inflation as accurate compared to males in both 2006 and 2008.
- In both 2006 and 2008, respondents in the Eastern Cape were significantly less

likely to accept inflation as accurate, compared to those in the Western Cape. In 2008, respondents in the Northern Cape, KwaZulu-Natal, Mpumalanga and Limpopo were also significantly less likely to accept the inflation rate as accurate.

- In both 2006 and 2008, those with some schooling, matric, an artisan/technikon/technical qualification, and those with a university degree or other professional qualification, were more likely to accept the inflation rate as accurate compared to those with no schooling.
- In 2006, respondents older than 50 years were less likely to accept the inflation rate as accurate. In 2008, however, those between 16 and 24 were more likely to accept the inflation rate as accurate.
- In 2008, those in the lowest income category were less likely to accept the inflation rate as accurate.

4.3 Multinomial analysis⁵

The information from the two surveys can be used to compare the different outcomes between 2006 and 2008. In the inflation expectations survey the aim is to test whether there is a significant difference between the characteristics of those who believe inflation to be below or equal to 25 per cent, those who believe inflation to be above 25 per cent and those who responded that they 'don't know', as presented by the BER between 2006 and 2008. Similarly, by using the inflation credibility survey, it is possible to ascertain whether there are differences in the underlying characteristics of those who believe that the current inflation rate is accurate, those who do not believe that the current inflation rate is accurate and those who responded that they 'don't know' between the same two periods. Furthermore, it can also be determined whether the same characteristics which impact on inflation expectations, impact on inflation credibility, thereby determining whether there is a possible feed-through effect from inflation credibility to inflation expectations.

Table 6
Logistic regression of inflation expectations

	Expectations	
	2006	2008
	Coefficient	Coefficient
Observations	1 857	2 018
Pseudo R2	0.0855	0.0763
Constant	-3.678 (-6.84)	-3.625 (-6.65)
White	-0.993*** (-2.66)	0.106 (0.38)
Coloured	0.196 (0.49)	-0.855 (-1.58)
Asian	0.966*** (2.68)	-1.500*** (-2.72)
Female	-0.167 (-0.85)	-0.055 (-0.27)
Eastern Cape	0.013 (0.03)	-2.011* (-1.86)
KwaZulu-Natal	-0.674 (-1.30)	1.005** (2.16)
Free State	0.513 (0.99)	-0.695 (-0.84)
Northwest/Northern Cape	0.000 0.000	1.404*** (2.82)
Mpumalanga/Limpopo	0.752 (1.44)	0.683 (1.21)
Gauteng	0.842** (2.06)	0.692 (1.57)
Income R4 000-R7 999	0.522 (1.54)	0.390 (1.30)
Income R800-R3 999	1.096*** (3.42)	0.745** (2.41)
Income R1-799	1.269*** (2.83)	0.637* (1.84)
Age 16-24	0.099 (0.38)	-0.132 (-0.46)
Age 35-49	-0.036 (-0.13)	0.022 (0.08)
Age 50+	0.015 (0.05)	-0.247 (-0.79)

Sources: Bureau for Economic Research, 2006 and 2008; own calculations.

Results in brackets denote z-statistics.

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.

A multinomial logit was estimated for the inflation expectations and inflation credibility surveys for both 2006 and 2008. The multinomial logit model is an expansion of a binary-choice model (Lancaster, 2004). For the inflation expectations survey, the reference group was those who believe inflation to be below or equal to 25 per cent. For the inflation credibility survey, the reference group was those who believe that the current inflation rate is accurate.

The coefficients are estimated by maximum likelihood, and the relative risk ratio (RRR) is reported in Table 8 and Table 9. First, the outcomes from the inflation expectations survey are modelled, followed by the outcomes from the inflation credibility surveys. The same independent variables and benchmark categories were used for both surveys.

The explanatory variables are based on a set of demographic characteristics that could determine how individuals see inflation. The results from the 2008 inflation expectations survey can be compared to the 2006 results as calculated by Rossouw et al. (2009), which is the first South African study against which results can be benchmarked. The variables included in the multinomial analysis were the following:

- Gender (reference = male)
- Population group (reference = Asians)
- Age, with respondents divided into age groups (16-24), (35-39) and (50+). The benchmark category is (25-34).⁶
- Income groups were divided into (R1-R799),⁷ (R800-R3 999), (R4 000-R7 999), and the reference category (R8 000+).
- In terms of spatial distribution, respondents from North West and the Northern Cape are grouped together, as well as those from

Mpumalanga and Limpopo, as the original survey data was grouped in this way. Western Cape was set as the benchmark category. For the inflation credibility survey, the provinces were not grouped together, but coded 1 to 8 and the benchmark province (Western Cape) was coded 0.

- Information regarding education was available for respondents in the inflation credibility survey, and was included in the credibility model. Education includes those with some schooling, matric, an Artisan/Technikon/technical qualification and those with a University degree or other professional qualification (reference = no schooling).

Clarity about the inflation expectations of different groups and their perceptions about the credibility of historic inflation data can assist central banks in targeting their communication initiatives more accurately. This analysis might serve as an early warning of groups with overly high inflation expectations or incorrect perceptions of historic inflation rates that might lead to wage demands exceeding the rate of inflation (see for instance Forsells & Kenny, 2002, on such a link).

For both the inflation expectations and the inflation credibility surveys conducted in 2006 and 2008, the model shows a goodness of fit that is significantly different from zero. For the inflation expectations model, the Pseudo R^2 in 2006 was 0,0467, and 0,0593 in 2008. The Pseudo R^2 for the inflation credibility model was 0,1035 in 2006 and 0,097 in 2008. As in binomial logistic models, the Pseudo R^2 will more than likely fall between 0 and 0,333 (Pindyck & Rubinfeld, 1981).

Table 7
Logistic regression of inflation credibility

Credibility		
	2006	2008
	Coefficient	Coefficient
Observations	2 824	2 689
Pseudo R2	0.0705	0.0608
Constant	-2.569	-2.320
	(-4.95)	(-4.45)

White	0.525***	0.152
	(3.33)	(0.73)
Coloured	0.562***	-0.218
	(2.81)	(-0.96)
Asian	0.229	-0.108
	(0.87)	(-0.34)
Female	-0.511***	-0.259**
	(-5.01)	(-2.33)
Northern Cape	-0.398	-0.944**
	(-0.91)	(-1.72)
Free State	-0.071	-0.508
	(-0.27)	(-1.62)
Eastern Cape	-0.635***	-1.029***
	(-2.86)	(-3.93)
KwaZulu-Natal	-0.205	-0.553**
	(-1.01)	(-2.38)
Mpumalanga	-0.186	-1.490***
	(-0.65)	(-3.40)
Limpopo	-0.289	-1.405***
	(-1.07)	(-3.77)
Gauteng	0.150	-0.133
	(0.86)	(-0.63)
North West	-0.472	-0.466
	(-1.59)	(-1.43)
Some schooling	1.499***	1.022**
	(3.22)	(2.36)
Matric	1.792***	1.249***
	(3.77)	(2.78)
Artisan/Technikon/technical	2.145***	1.531***
	(4.35)	(3.17)
University degree/professional	1.667***	1.587***
	(3.29)	(3.12)
Age 16-24	-0.093	0.459***
	(-0.63)	(2.86)
Age 35-49	-0.206	0.110
	(-1.47)	(0.68)
Age 50+	-0.290*	0.105
	(-1.84)	(0.59)
Income R4 000-R7 999	-0.191	0.103
	(-1.16)	(0.55)
Income R800-R3 999	-0.282	-0.103
	(-1.51)	(-0.59)
Income R1-799	-0.317*	-0.742**
	(-1.84)	(-2.35)

Sources: Ipsos-Markinor, 2006 and 2008; own calculations.

Results in brackets denote z-statistics.

Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.

4.4 Results

4.4.1 Expectations model

The relative risk ratios (RRR) for the inflation expectations model for both 2006 and 2008 were analysed at the 90 per cent confidence interval, and presented in Table 8 for the multinomial logit model for 2006 and 2008.

First, this analysis attempts to determine what percentage of which population group thinks that the expected inflation rate is higher than 25 per cent, as opposed to less than 25 per cent. The output presented in Table 8 suggests that the odds in this respect are 171 per cent [i.e. $100(1-0,365)$] less for whites than for blacks in 2006. In 2008, however, there was no significant difference between whites and blacks. In 2006 the odds were higher for Asians perceiving the inflation rate to be higher than 25 per cent, compared to blacks. However, during the 2008 survey round, the odds were 78,2 per cent less for Asians than for blacks in this regard.

Similarly, in 2006 there was no significant difference between the inflation expectations of males and females, and only a statistically insignificant difference in 2008, although mean inflation expectations for females were higher than for males.

The same structure is applied to determine what percentage of which age group thinks that expected inflation will be higher than 25 per cent, rather than less than 25 per cent, for both 2006 and 2008. Similar to gender, in both 2006 and 2008 age did not influence respondents' decisions.

In terms of the income variable, in 2006 the odds of perceiving the inflation rate to be higher than 25 per cent increased by 197,8 and 258,9 respectively, for those who earned in the bottom two income brackets, compared to those who earned in the highest income bracket. A similar result was obtained during 2008, although the increase in the odds was slightly less.

The odds of expecting an inflation rate above 25 per cent for respondents in Gauteng increased by 126, compared to those in the

Western Cape. In 2008, however, the odds were higher for KwaZulu-Natal and North West/Northern Cape to expect inflation above 25 per cent, compared to the Western Cape. In 2008, the odds of expecting inflation above 25 per cent decreased by 86 for those in the Eastern Cape.

Second, this analysis attempts to draw a comparison between 2006 and 2008 in terms of what percentage of which population group 'did not know' what they expected the inflation rate to be, over those who expected an inflation rate lower than 25 per cent. The odds for whites were 42,7 per cent less in this regard, compared to blacks. In 2008, however, there was no significant difference between whites and blacks. Furthermore, the odds in 2006 were 60,4 per cent higher for respondents in the age group 35-49 than for those in the age group 25-34. Moreover, the odds increased by 44,7 per cent for people older than 50 years, in comparison with those in the age group 25-34. In 2008, different age group had no significant impact on inflation expectations. No significant difference between inflation expectations was found between male and female respondents in both survey years.

When considering the income variable, in 2006 the odds were more by 34,3 and 71,6, respectively that the two lowest income groups 'did not know' what they expected the inflation rate to be, as opposed to those who thought that the expected inflation rate was lower than 25 per cent. In 2008, the odds were significantly higher that the two lowest income group individuals responded that they 'did not know', compared to those in the highest income group. In 2008 the odds for respondents in the income group R4 000 to R7 999 was also significantly higher that they 'did not know'.

The odds were higher by 50,5 for respondents in the Free State to respond that they 'did not know' what they expected the inflation rate to be, as opposed to those who thought that the expected inflation rate was lower than 25 per cent. The odds were around 37,4 less for respondents in Gauteng in 2008.

Table 8

Output from the multinomial regression model for inflation expectations 2006 and 2008

	Number of obs = 2423 LR chi2(14) = 150.81 Prob > chi2 = 0.0000 Pseudo R2 = 0.0467 Log likelihood = -1538.456	Number of obs = 2454 LR chi2(14) = 185.92 Prob > chi2 = 0.0000 Pseudo R2 = 0.0593 Log likelihood = -1473.4956	Number of obs = 2423 LR chi2(14) = 150.81 Prob > chi2 = 0.0000 Pseudo R2 = 0.0467 Log likelihood = -1538.456	Number of obs = 2454 LR chi2(14) = 185.92 Prob > chi2 = 0.0000 Pseudo R2 = 0.0593 Log likelihood = -1473.4956
	1 Average expected inflation rate above 25 per cent		2 don't know	
	2006	2008	2006	2008
	RRR	RRR	RRR	RRR
Female	-0.836 (-0.92)	-0.980 (-0.10)	1.184 (1.56)	1.082 (0.72)
Coloured	1.211 (0.48)	-0.436 (-1.53)	-0.996 (-0.02)	-0.583** (-2.33)
Asian	2.773*** (2.81)	-0.218*** (-2.76)	-0.826 (-0.89)	-0.752 (-1.21)
White	-0.365*** (-2.71)	1.125 (0.42)	-0.573*** (-3.37)	1.081 (0.48)
Age 16-24	1.144 (0.52)	-0.877 (-0.46)	1.191 (1.09)	1.037 (0.23)
Age 35-49	-0.975 (-0.09)	1.027 (0.09)	1.594*** (2.86)	-0.842 (-1.00)
Age 50+	1.015 (0.05)	-0.780 (-0.81)	1.447** (2.21)	1.006 (0.04)
Income R4 000-R7 999	1.664 (1.51)	1.483 (1.32)	1.205 (1.21)	1.436** (2.22)
Income R800-R3 999	2.978*** (3.42)	2.121** (2.44)	1.343* (1.88)	1.853*** (3.62)
Income R1-R799	3.589*** (2.86)	1.839* (1.75)	1.716** (2.15)	2.569*** (5.12)
Eastern Cape	-0.968 (-0.07)	-0.140* (-1.82)	-0.723 (-1.31)	-0.175*** (-5.16)
KwaZulu-Natal	-0.468 (-1.46)	2.892** (2.28)	1.178 (0.75)	-0.773 (-1.18)
Free State	1.585 (0.90)	-0.507 (-0.82)	-0.637 (-1.53)	1.505* (1.73)
North West/ Northern Cape	0.000 (0.000)	4.082*** (2.82)	1.415 (1.35)	-0.827 (-0.71)
Mpumalanga/ Limpopo	1.962 (1.30)	2.045 (1.27)	1.428 (1.37)	1.309 (1.08)
Gauteng	2.261** (2.02)	2.044 (1.63)	-0.926 (-0.39)	-0.626** (-2.45)

Outcome 0 (think that the actual inflation rate is below 25 per cent) is the base outcome. The reference groups are black, males, earning higher than R8 000, in the Western Cape and who are between the ages of 25 and 34.

Results in brackets denote z-statistics.

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.

Sources: BER; own calculations.

4.4.2 Credibility model

The RRR were calculated for the two outcomes of the inflation credibility surveys for both 2006 and 2008 and evaluated at the

90 per cent confidence interval. Table 9 displays the results of an inflation credibility multinomial logit regression model for 2006 and 2008.

First, this analysis attempts to determine what percentage of which gender group did not accept the inflation rate as accurate, in comparison with those who did accept it as accurate. The odds in this respect in 2006 were 30,1 per cent higher for females than for males. In 2008, however, there was no significant difference between male and female participants. In 2006 the coefficient for the age group 16–24 was not significant; however, in 2008 the odds were 31,3 per cent lower for this group. Furthermore the odds in 2006 were 41,5 per cent higher for participants over 50 years to not accept inflation as accurate than for those between 25–34. In 2008, the odds for this group, however, was 28,6 per cent less. In 2006, the odds increased by 33,3 for coloureds to not accept the inflation rate as accurate, compared to blacks. In 2008, the odds increased even more, by 113,2 per cent for coloureds not to accept the inflation rate as accurate, compared to blacks. In 2008, the odds were also 80,4 per cent higher for Asians to not accept the inflation rate as accurate, *ceteris paribus*, and compared to the benchmark category, blacks.

In 2006, the odds were significantly less for those with any type of education to not accept the inflation rate as accurate, compared to those with no education. However, in 2008, none of the education coefficients were found to be significant.

In 2008, the odds decreased by 50,1 per cent for respondents in the Free State to not accept the inflation rate as accurate, compared to those in the Western Cape. In the same period, the odds were higher for KwaZulu-Natal (58,7 per cent), Mpumalanga (275,7 per cent) and Limpopo (317,9 per cent) to not accept the inflation rate as accurate.

Second, this analysis attempts to determine the difference between the 2006 and 2008 survey results in terms of what percentage of which gender group ‘did not know’ whether they accepted the inflation rate as accurate or not, compared to those who did accept it as accurate. The results show that in 2006 and 2008 the odds increased by 101,2 per cent and 35,3 per cent, respectively, for female participants, as compared to males in this regard. The output further shows that the odds decreased by 72,5 per cent for whites to ‘not

know’, as opposed to blacks in 2006. In 2008 the odds decreased by 43,1 for this group, compared to the reference group. On the other hand the odds in 2006 were 43,3 per cent more for Asians, than for blacks to ‘not know’. In 2008, the coefficient for Asians was not significant. In 2006, the odds for coloured respondents to ‘not know’ was also lower with 44,4 per cent, compared to blacks. This coefficient was, however, not significant in 2008.

This analysis also show that the odds to ‘not know’ in 2006 increased by 32,4 per cent for participants older than 50 years, compared to those between 25–34 years. In 2008, there was no significant difference between those older than 50 years and those 25–34. In 2008, however, the odds decreased in this respect for those between 16–24 by 40,0 per cent, compared to the benchmark category 25–34.

In both 2006 and 2008, the odds were significantly less for those with any type of education to respond that they ‘did not know’, as opposed to accepting the inflation rate as accurate, compared to those with no education.

In 2006, the odds were higher than respondents in the Eastern Cape (145,4 per cent), KwaZulu-Natal (53,6 per cent), Limpopo (94,4 per cent) and the North West (78,5 per cent), would respond that they ‘did not know’ if they accepted the current rate of inflation as accurate, compared to those in the Western Cape. In 2008, however, compared to the Western Cape, all provinces showed significant increases in the odds of ‘not knowing’ if they accepted the inflation rate as accurate, except for the North West.

Furthermore, the odds that respondents ‘did not know’ decreased by 26,5 and 27,5 respectively, for those who earned between R800–R3 999 and R4 000–R7 999. In 2008, the odds in this regards were significantly lower for all income groups, *ceteris paribus*.

It transpires that sub-categories increase the use of information within surveys of inflation credibility in both 2006 and 2008. This approach highlights considerable differences in perceptions between sub-categories of respondents, as well as changes in perceptions between different survey periods. The results show that in 2006, when the average inflation rate was 5,4 per cent, respondents seemed less

likely to believe that the inflation rate is accurate, whereas in 2008, when the average inflation rate was 13,7 per cent, respondents

were more likely to accept the inflation rate as accurate.

Table 9

Output from the multinomial regression model for inflation credibility for 2006 and 2008

	Number of obs = 2824 LR chi2(14) = 588.86 Prob > chi2 = 0.0000 Pseudo R2 = 0.1035 Log likelihood = -2550.982	Number of obs = 2689 LR chi2(14) = 495.66 Prob > chi2 = 0.0000 Pseudo R2 = 0.097 Log likelihood = -2306.0023	Number of obs = 2824 LR chi2(14) = 588.86 Prob > chi2 = 0.0000 Pseudo R2 = 0.1035 Log likelihood = -2550.982	Number of obs = 2689 LR chi2(14) = 495.66 Prob > chi2 = 0.0000 Pseudo R2 = 0.097 Log likelihood = -2306.0023
	1 Do not accept inflation as accurate		2 Don't know	
	2006	2008	2006	2008
	RRR	RRR	RRR	RRR
Female	1.301** (2.27)	1.204 (1.45)	2.012*** (6.36)	1.353*** (2.59)
Coloured	0.667** (2.27)	2.132*** (3.02)	-0.556*** (-2.68)	-0.867 (-0.59)
Asian	1.273 (0.84)	1.804* (1.72)	-0.567** (-1.96)	0.721 (-0.92)
White	1.132 (0.72)	1.434 (1.56)	-0.275*** (-6.94)	-0.569** (-2.42)
Age 16-24	1.001 (0,00)	-0.687** (-2.01)	1.160 (0.94)	-0.600*** (-3.04)
Age 35-49	1.238 (1.34)	1.030 (0.16)	1.200 (1.20)	-0.817 (-1.19)
Age 50+	1.303 (1.49)	-0.840 (-0.85)	1.324* (1.64)	-0.930 (-0.40)
Some schooling	0.330** (-2.21)	-0.862 (-0.29)	-0.204*** (-3.39)	-0.316*** (-2.65)
Matric	-0.358** (-2.01)	-0.926 (-0.15)	-0.116*** (-4.48)	-0.218*** (-3.36)
Artisan/Technikon/ technical	-0.205*** (-2.96)	-0.802 (-0.39)	-0.099*** (-4.58)	-0.140*** (-3.97)
University degree/ professional	-0.485 (-1.34)	-0.896 (-0.19)	-0.080*** (-4.72)	-0.094*** (-4.35)
Income R4 000-R7 999	-0.792 (-1.18)	-0.725 (-0.90)	-0.735* (-1.66)	-0.404*** (-2.80)
Income R800-R3 999	1.209 (0.92)	-0.641 (-1.27)	-0.725* (-1.66)	-0.383*** (-3.09)
Income R1-799	1.023 (0.13)	-0.672 (-1.23)	-0.861 (-0.97)	-0.497*** (-2.44)
Northern Cape	1.294 (0.52)	-0.782 (-0.37)	1.725 (1.17)	4.636*** (2.76)
Free State	-0.796 (-0.77)	-0.496* (-1.68)	1.471 (1.33)	2.696*** (3.02)
Eastern Cape	1.394 (1.35)	1.313 (0.92)	2.454*** (3.69)	4.156*** (5.18)
KwaZulu-Natal	-0.980 (-0.09)	1.587* (1.78)	1.536* (1.89)	2.033*** (2.82)
Mpumalanga	1.464 (1.24)	3.757*** (2.82)	1.061 (0.18)	5.379*** (3.71)
Limpopo	-0.609 (-1.51)	4.178*** (3.56)	1.944** (2.31)	4.598*** (3.95)

Gauteng	-0.743 (-1.54)	-0.826 (-0.81)	1.046 (0.22)	1.501* (1.76)
North West	1.557 (1.36)	1.686 (1.44)	1.786* (1.80)	1.699 (1.53)

Outcome 0 (Accept inflation as accurate) is the base outcome. The reference groups are black, males, earning higher than R8 000, in the Western Cape, with no schooling, and who are between the ages of 25 and 34.

Results in brackets denote z-statistics.

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.

Sources: Ipsos-Markinor; own calculations.

5 Conclusions

The main conclusion in terms of inflation expectations is that inflation expectations differ between different income groups. Although some results were not robust between 2006 and 2008, the difference between income groups was consistent over this period.

In terms of inflation credibility, credibility differed between male and female respondents, although this did not seem to feed through to higher inflation expectations. This could partly be explained by the high percentage of respondents who 'did not know' what they expected the inflation rate to be.

Income significantly affected inflation credibility, and also had a feed-through effect to higher inflation expectations. Education also had an impact on whether respondents perceive the inflation rate as credible, although due to data limitations, the feed-through effect to inflation expectations could not be determined.

The statement and question used in the inflation credibility surveys should be amended to ensure a better alignment with the statement and question used in inflation expectation surveys. This can be achieved through the use of two statements/questions in the next biennial inflation credibility survey, one of which will be aligned to the statement/question used in inflation expectation surveys. This reformulation will provide some respondents with an opportunity to indicate whether they think prices increased at a rate higher or lower than the historic rate of inflation.

It is striking that the acceptance of historic inflation figures as accurate is low in a low-inflation environment. This seems to indicate that respondents confuse price levels and price increases (i.e. inflation). Greater clarity will only emerge after similar biennial surveys have been conducted over a number of high and low inflation cycles. This is an area for further research, as it might have implications for inflation targeting as a policy regime.

Endnotes

- 1 This section draws on Rossouw (2008), Rossouw and Joubert (2005), and Rossouw et al. (2009).
- 2 The use of omnibus surveys to limit sampling costs is accepted as a research practice (Camponovo, 2006; Lindenmann, 2001).
- 3 This paper uses the same terminology, classifications and descriptions for population groups as Statistics South Africa (Statistics SA, 2005).
- 4 The number of respondents in the first survey was reduced to 3 493 (Markinor, 2006) and to 3 481 in the second survey (Ipsos-Markinor, 2008) after a 20-per-cent back-check to validate the results.
- 5 See Rossouw et al. (2009) for a description of the model.
- 6 The benchmark category is automatically selected by the software package.
- 7 During the 2006 inflation expectations survey, the category was grouped R1-R899, which could have resulted in a higher proportion of respondents being grouped in the lowest income group, that actually belonged to the second-lowest income group.

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