



Province of KwaZulu-Natal  
Provincial Treasury  
IMES Unit

# THE KWAZULU NATAL ECONOMY – A RISK AND CONDITIONS MONITOR<sup>1</sup>

## Update 18

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## KZN RISK AND CONDITIONS MONITOR – 1<sup>th</sup> Quarter 2016

### Economic Risk/Conditions Variables

The economic risk/condition variables that are included in the monitor are indicated in the table below. The relative sector weights for the economic risk/condition variables are also displayed and add up to a 100%. The weights at this stage are purely assumed weights and not based on any econometric modelling or calculations simply because of a lack of sufficient time series data. However, it must be mentioned that various weightings have been modelled with very little impact on the overall results.

**Table 1: Included economic risk/condition variables and their associated sector weights**

	Rand Dollar (Rand per USD)	Interest Rate (R157 = %)	Inflation (pa %)	Oil Price (USD)	Sugar Price (US cents per pound)	Gold Price (USD)	Credit extended to the domestic private sector (Rm)	Physical volume of electricity production (2005=100)
Agriculture, forestry and fishing	20.00%	10.00%	5.00%	17.00%	30.00%	0.00%	10.00%	8.00%
Mining and quarrying	30.00%	0.00%	0.00%	10.00%	0.00%	40.00%	0.00%	20.00%
Manufacturing	35.00%	20.00%	5.00%	10.00%	0.00%	0.00%	10.00%	20.00%
Electricity, gas and water	10.00%	5.00%	5.00%	20.00%	0.00%	0.00%	10.00%	50.00%
Construction	10.00%	30.00%	10.00%	15.00%	0.00%	0.00%	30.00%	5.00%
Wholesale & retail trade; hotels & restaurants	10.00%	35.00%	20.00%	10.00%	0.00%	0.00%	25.00%	0.00%
Transport, storage and communication	10.00%	20.00%	10.00%	30.00%	0.00%	0.00%	20.00%	10.00%
Finance, real estate and business services	10.00%	35.00%	10.00%	10.00%	0.00%	0.00%	30.00%	5.00%
Personal and General Government Services	10.00%	35.00%	20.00%	0.00%	0.00%	0.00%	30.00%	5.00%

The theoretical impact of a change in each of the economic risk/condition variables are illustrated in the below table. For example, when the rand dollar exchange rate depreciates the risk associated is assumed to be decreasing because of the potential improvement in the economic conditions associated with a depreciating currency.

**Table 2: Implications of a change in the economic risk/condition variables**

	Unit	Movement	Decreasing Risk	Increasing Risk
Rand Dollar Exchange Rate	Rand per 1USD	Appreciate or Depreciate	Depreciate	Appreciate
Interest Rate	Percentage R157 Bond	Increase or Decrease	Decrease	Increase
Inflation Rate	Percentage Per Annum	Increase or Decrease	Decrease	Increase
Oil Price	USD per Barrel	Increase or Decrease	Decrease	Increase
Sugar Price	US cents per pound	Increase or Decrease	Increase	Decrease
Gold Price	USD per Ounce	Increase or Decrease	Increase	Decrease
Credit extended to the domestic private sector	Rand million	Increase or Decrease	Increase	Decrease
Physical volume of electricity production	Index, 2005=100	Increase or Decrease	Increase	Decrease

### Behaviour of the Economic Risk/Conditions Variables

The behaviour or movement of the economic risk/conditions variables over the last 29 months are displayed in the below table.

**Table 3: Behaviour of the Economic Risk/Conditions Variables**

	Rand Dollar (Rand per USD)	Interest Rate (R204 = %)	Inflation (pa %)	Oil Price (USD)	Sugar Price (US cents per pound)	Gold Price (USD)	Credit extended to the domestic private sector (Rm)	Electricity generated and available for distribution (Gigawatt-hours)
Nov-13	10.19	7.26	5.30	111	17.75	1 246	2 429 752	3 623
Dec-13	10.41	7.19	5.40	111	16.54	1 197	2 441 069	3 674
Jan-14	11.20	8.27	5.80	107	15.71	1 244	2 455 950	3 755
Feb-14	10.70	8.01	5.90	108	16.89	1 332	2 496 031	3 463
Mar-14	10.58	7.80	6.00	108	17.89	1 296	2 522 866	3 747
Apr-14	10.55	7.77	5.80	108	18.21	1 296	2 522 110	3 675
May-14	10.42	7.54	6.10	109	18.24	1 256	2 537 089	3 806
Jun-14	10.58	7.56	6.60	113	18.13	1 316	2 562 749	3 685
Jul-14	10.65	7.42	6.60	106	18.73	1 295	2 583 386	3 700
Aug-14	10.62	7.06	6.30	102	17.72	1 290	2 594 325	3 632
Sep-14	11.27	7.52	6.40	97	16.54	1 216	2 615 435	3 568
Oct-14	10.86	7.02	5.90	86	16.48	1 199	2 632 068	3 670

Nov-14	10.97	6.69	5.90	78	15.88	1 191	2 643 029	3 476
Dec-14	11.56	7.18	5.80	58	14.99	1 201	2 810 240	3 472
Jan-15	11.55	6.43	5.30	49	15.06	1 467	2 862 253	3 545
Feb-15	11.53	6.87	4.40	60	14.51	1 417	2 886 214	3 253
Mar-15	12.14	7.11	3.90	56	12.84	1 440	2 920 340	3 626
Apr-15	11.78	7.22	4.00	66	12.91	1 407	2 934 096	3 458
May-15	12.16	7.44	4.50	63	12.70	1 448	2 961 439	3 558
Jun-15	12.20	7.56	4.60	62	12.11	1 424	2 947 591	3 450
Jul-15	12.70	7.58	4.70	53	11.88	1 392	2 970 091	3 624
Aug-15	13.31	7.60	4.70	50	10.67	1 509	2 988 514	3 543
Sep-15	13.82	7.62	4.60	48	12.14	1 543	3 007 216	3 436
Oct-15	13.88	7.42	4.60	49	14.14	1 590	3 028 592	3 487
Nov-15	14.43	7.75	4.70	45	14.89	1 538	3 081 672	3 357
Dec-15	15.54	8.98	4.80	36	15.00	1 636	3 097 580	3 385
Jan-16	16.18	8.46	5.60	34	14.29	1 774	3 104 644	3 428
Feb-16	15.86	8.70	6.50	35	13.29	1 956	3 144 521	3 259
Mar-16	14.65	8.39	6.30	39	15.44	1 821	3 179 020	3 459

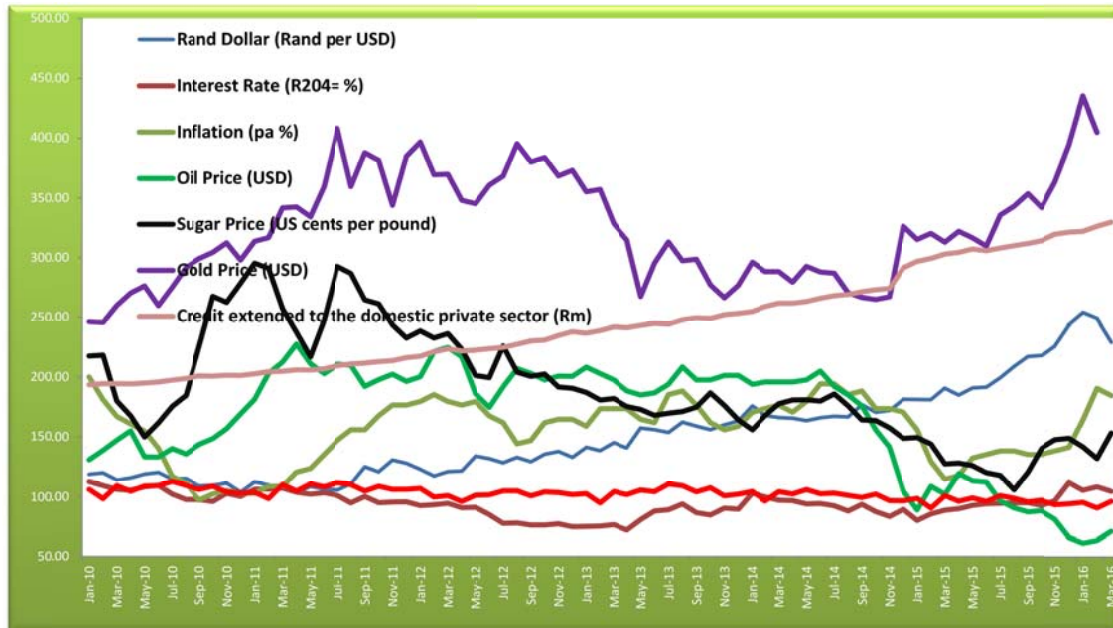
(Various Sources, including Stats SA)

Graph 1 and 2 indicates the behaviour of the economic risk variables in index and percentage format (2005 = 100) from January 2013 to March 2016 and during the 1<sup>st</sup> quarter of 2016.

From the table and graph it seems that during the 1<sup>st</sup> quarter of 2016:

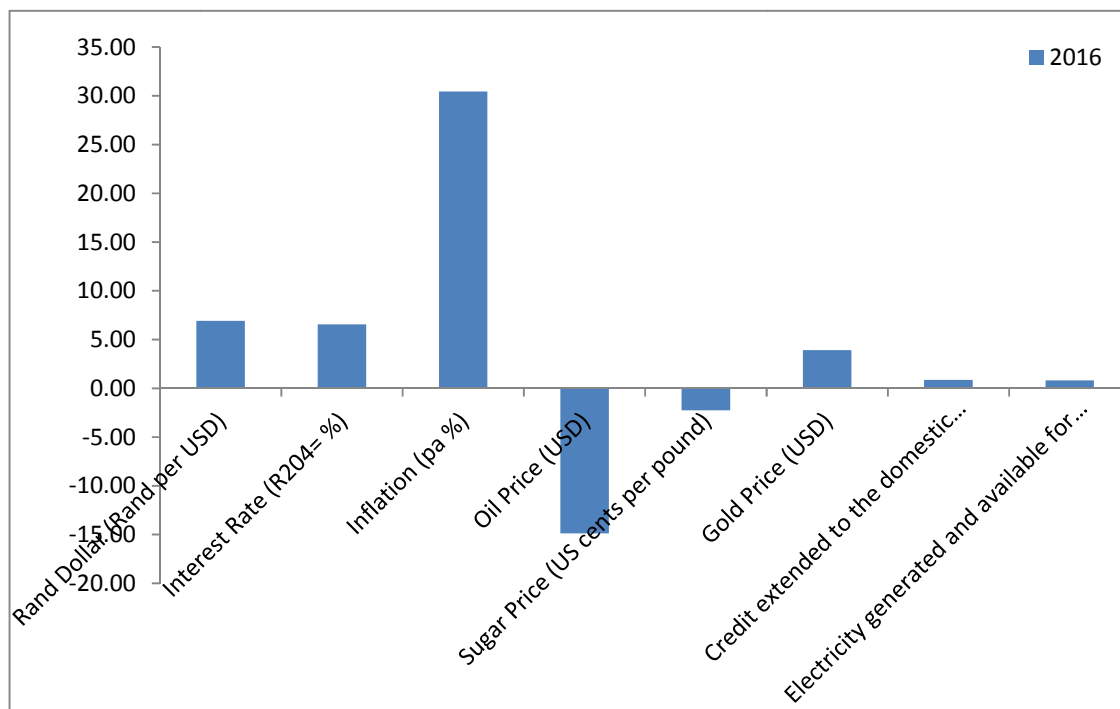
- The rand dollar exchange rate has depreciated (✓)
- Interest rates have increased (x)
- Inflation has increased (x)
- Oil prices have decreased (✓)
- Sugar prices have decreased (x)
- Gold price has increased (✓)
- Credit extended has increased (✓)
- Electricity supply has increased (✓)

**Graph 1: Behaviour of the Economic Risk/Conditions Variables in index format**



(Various Sources, including Stats SA)

**Graph 2: Behaviour of the Economic Risk/Conditions Variables**



The graph above suggests that only 3 variables have increased the economic risk or depressed the economic conditions in the provincial economy whilst 5 variables have improved the economic risk outlook and economic conditions in the province.

## Calculating the Monitor

The economic risk/conditions monitor for the province and each of the regions (6 regions) are calculated as follows:

- **Step 1.** Calculate or compute the monthly percentage change in each of the 8 economic risk/conditions variables ( $t = 1$  to 8 and  $i = 1$  to 184)

$$\% \Delta er_{ti} = (er_{ti} - er_{ti-1}) / er_{ti-1} \times 100$$

**Where:**

$er_t$  = the different economic risk/conditions variables

$i$  = time in months

- **Step 2.** Calculate or compute the monthly economic sector weights for each of the 9 economic sectors ( $s = 1$  to 9 and  $i = 1$  to 184)

$$W_{si} = GDP_{si} / GDP_{kzni} \times 100$$

**Where:**

$W_{si}$  = relative weight of each economic sector

$GDP_{si}$  = gross domestic product per economic sector in period  $i$

$GDP_{kzni}$  = gross domestic product for the province in period  $i$

- **Step 3.** Calculate or compute the economic sector risk/conditions for each of the 9 sectors

$$ERC_{sti} = \sum (W_{si} \times \% \Delta er_{ti} \times erw_{ti})$$

**Where:**

$ERC_{st}$  = economic risk/condition of the particular sector

$erw$  = weight of each of the economic risk/conditions per economic sector

- **Step 4.** Calculate or compute the provincial or regional economic risk/condition monitor

$$ERC_{loc} = \sum ERC_{sti}$$

**Where:**

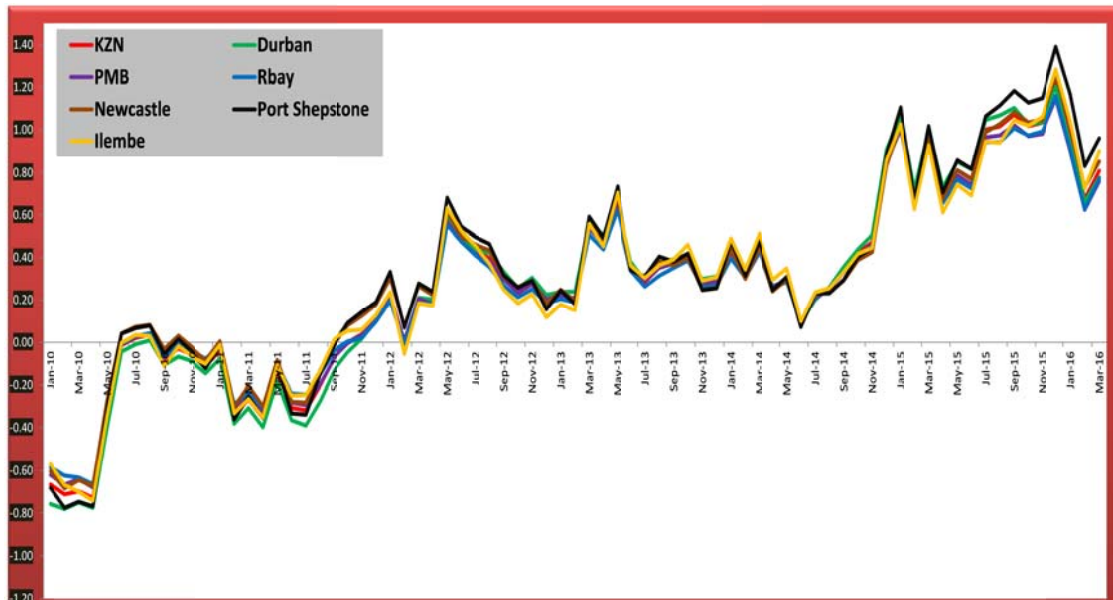
$ERC_{loc}$  = economic risk/conditions monitor for the province or region

### Economic risk/conditions monitor for the province and regions

The results for the province and each of the 6 regions are displayed in the graph and table below (graph 3 and table 4). The results have been smoothed using a 12 month moving average method because of the inclusion of monthly data in the calculations. The monitor should be interpreted as follows:

Positive Numbers	Low or Decreasing Risk
Zero	Neutral Risk
Negative Numbers	High or Increasing Risk

**Graph 3: Economic Risk/Conditions Monitor**



**Table 4: Economic Risk/Conditions Monitor**

	KZN	Durban	PMB	Rbay	Newcastle	Port Shepstone	Ilembe
Nov-13	-0.34	-0.18	-0.30	-0.33	-0.52	-0.65	-0.50
Dec-13	0.44	0.52	0.46	0.35	0.45	0.46	0.37
Jan-14	1.54	1.49	1.41	1.33	1.78	2.11	1.76
Feb-14	-0.94	-0.95	-0.92	-0.74	-1.06	-1.25	-1.15
Mar-14	0.93	0.84	0.97	0.95	0.96	0.97	1.17
Apr-14	-0.17	-0.17	-0.17	-0.13	-0.22	-0.25	-0.18
May-14	0.17	0.18	0.22	0.18	0.15	0.10	0.18
Jun-14	-0.28	-0.28	-0.29	-0.27	-0.18	-0.20	-0.34
Jul-14	1.08	1.07	1.04	1.08	0.97	1.05	1.19
Aug-14	0.36	0.46	0.35	0.32	0.29	0.27	0.15
Sep-14	1.24	1.34	1.18	1.11	1.17	1.32	1.30
Oct-14	1.28	1.34	1.26	1.27	1.11	1.14	1.17
Nov-14	0.83	0.94	0.76	0.80	0.65	0.72	0.68
Dec-14	4.89	5.04	4.71	4.72	4.69	5.04	4.83
Jan-15	2.71	2.61	2.51	2.59	3.01	3.36	2.60
Feb-15	-3.15	-3.05	-2.95	-3.00	-3.15	-3.61	-3.48
Mar-15	2.69	2.71	2.62	2.39	3.00	3.33	2.78
Apr-15	-2.72	-2.68	-2.55	-2.55	-2.74	-3.13	-2.95
May-15	1.40	1.37	1.32	1.29	1.52	1.72	1.53
Jun-15	-0.35	-0.27	-0.36	-0.38	-0.41	-0.43	-0.49
Jul-15	2.76	2.76	2.64	2.60	2.74	3.06	2.99
Aug-15	1.28	1.34	1.16	1.09	1.47	1.71	1.11
Sep-15	1.08	0.92	0.98	1.16	1.01	1.17	1.52
Oct-15	0.54	0.32	0.50	0.67	0.54	0.59	0.97
Nov-15	1.49	1.49	1.41	1.51	1.29	1.42	1.72
Dec-15	3.18	3.09	2.92	2.97	3.28	3.84	3.57
Jan-16	1.63	1.61	1.50	1.46	1.84	2.13	1.66
Feb-16	-1.07	-1.00	-1.06	-1.07	-0.91	-1.00	-1.50
Mar-16	-1.41	-1.55	-1.21	-1.13	-1.56	-1.94	-1.22

The average risk value for the province and each of the regions for the 1<sup>st</sup> quarter 2015 are displayed in the table below (table 5).

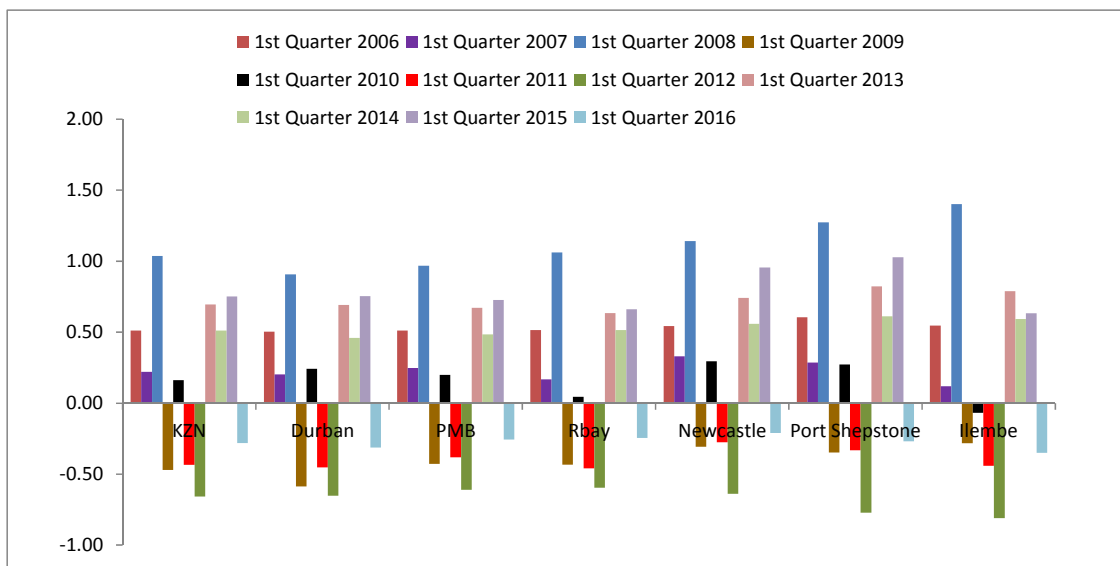


**Table 5: Average 1<sup>st</sup> Quarter Economic Risk/Conditions Monitor**

	KZN	Durban	PMB	Rbay	Newcastle	Port Shepstone	Ilembe
1st Quarter 2007	0.22	0.20	0.25	0.17	0.33	0.29	0.12
1st Quarter 2008	1.04	0.91	0.97	1.06	1.14	1.27	1.40
1st Quarter 2009	-0.47	-0.59	-0.43	-0.43	-0.31	-0.35	-0.28
1st Quarter 2010	0.16	0.24	0.20	0.05	0.29	0.27	-0.07
1st Quarter 2011	-0.43	-0.45	-0.38	-0.46	-0.28	-0.33	-0.44
1st Quarter 2012	-0.66	-0.65	-0.61	-0.60	-0.64	-0.77	-0.81
1st Quarter 2013	0.69	0.69	0.67	0.63	0.74	0.82	0.79
1st Quarter 2014	0.51	0.46	0.49	0.51	0.56	0.61	0.59
1st Quarter 2015	0.75	0.75	0.73	0.66	0.95	1.03	0.63
1st Quarter 2016	-0.28	-0.31	-0.26	-0.25	-0.21	-0.27	-0.35

Table 5 can be graphically illustrated through graph 4.

**Graph 4: Average 1<sup>st</sup> Quarter Economic Risk/Conditions Monitor**



### Interpretation of the Monitor

The results suggest that the economic risk profile of the province deteriorated significantly primarily because of the rise in interest rates and inflation during the 1<sup>st</sup> quarter 2016.

The 1<sup>st</sup> quarter 2016 results suggest that economic risks were the lowest (or economic conditions were the best) in the Newcastle and Richards Bay regions whereas the economic risks were the highest (or economic conditions were the worse) in Ilembe and Durban regions.