



Province of KwaZulu-Natal
Provincial Treasury
IMES Unit

THE KWAZULU NATAL ECONOMY – A RISK AND CONDITIONS MONITOR¹

Update 14

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KZN RISK AND CONDITIONS MONITOR – 1st Quarter 2015

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 36 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)
Jan-12	7.83	7.43	6.10	110	24.02	1,731	2,096,914	3,527
Feb-12	7.48	7.48	6.30	122	23.42	1,785	2,131,911	3,271
Mar-12	7.71	7.58	6.10	124	23.79	1,662	2,156,039	3,282
Apr-12	7.75	7.29	6.00	120	22.48	1,664	2,138,557	3,154
May-12	8.53	7.31	6.10	103	20.27	1,566	2,144,453	3,318
Jun-12	8.40	6.82	5.70	96	20.10	1,553	2,156,243	3,315
Jul-12	8.18	6.23	5.50	106	22.76	1,623	2,166,543	3,441
Aug-12	8.48	6.26	4.90	114	20.56	1,656	2,191,650	3,436
Sep-12	8.23	6.12	5.00	112	20.21	1,779	2,217,943	3,316
Oct-12	8.64	6.12	5.50	109	20.39	1,710	2,225,753	3,458
Nov-12	8.78	6.21	5.60	111	19.31	1,727	2,263,277	3,422
Dec-12	8.47	6.01	5.60	111	19.20	1,657	2,293,047	3,355

Jan-13	9.01	6.02	5.40	115	18.85	1,678	2,282,495	3,409
Feb-13	8.83	6.05	5.90	112	18.21	1,597	2,301,270	3,137
Mar-13	9.25	6.15	5.90	109	18.34	1,606	2,331,883	3,454
Apr-13	8.97	5.79	5.90	104	17.66	1,478	2,325,690	3,352
May-13	10.03	6.48	5.90	102	17.43	1,415	2,343,436	3,455
Jun-13	9.94	7.06	5.60	103	16.92	1,202	2,361,481	3,428
Jul-13	9.80	7.15	5.50	107	17.10	1,328	2,354,130	3,636
Aug-13	10.34	7.54	6.30	115	17.24	1,408	2,388,631	3,576
Sep-13	10.13	6.95	6.40	109	17.62	1,337	2,402,773	3,397
Oct-13	9.94	6.80	6.00	109	18.81	1,343	2,399,828	3,520
Nov-13	10.19	7.26	5.50	111	17.75	1,246	2,429,752	3,371
Dec-13	10.41	7.19	5.30	111	16.54	1,197	2,440,148	3,331
Jan-14	11.20	8.27	5.80	107	15.71	1,244	2,455,950	3,569
Feb-14	10.70	8.01	5.90	108	16.89	1,332	2,496,031	3,295
Mar-14	10.58	7.80	6.00	108	17.89	1,296	2,524,226	3,432
Apr-14	10.55	7.77	6.10	108	18.21	1,296	2,522,110	3,411
May-14	10.42	7.54	6.60	109	18.24	1,256	2,537,089	3,538
Jun-14	10.58	7.56	6.60	113	18.13	1,316	2,562,749	3,419
Jul-14	10.65	7.42	6.30	106	18.73	1,295	2,583,386	3,397
Aug-14	10.62	7.06	6.40	102	17.72	1,290	2,594,325	3,311
Sep-14	11.27	7.52	5.90	97	16.54	1,216	2,615,435	3,271
Oct-14	10.86	7.02	5.90	86	16.48	1,199	2,632,068	3,405
Nov-14	10.97	6.69	5.80	78	15.88	1,191	2,643,029	3,305
Dec-14	11.56	7.18	5.30	58	14.99	1,201	2,810,240	3,225
Jan-15	11.55	6.43	5.30	49	15.06	1,251	2,862,253	3,494
Feb-15	11.53	6.87	4.40	60	14.51	1,229	2,886,214	3,238
Mar-15	12.14	7.11	3.90	56	12.84	1,180	2,920,340	3,529

(Various Sources, including Stats SA)

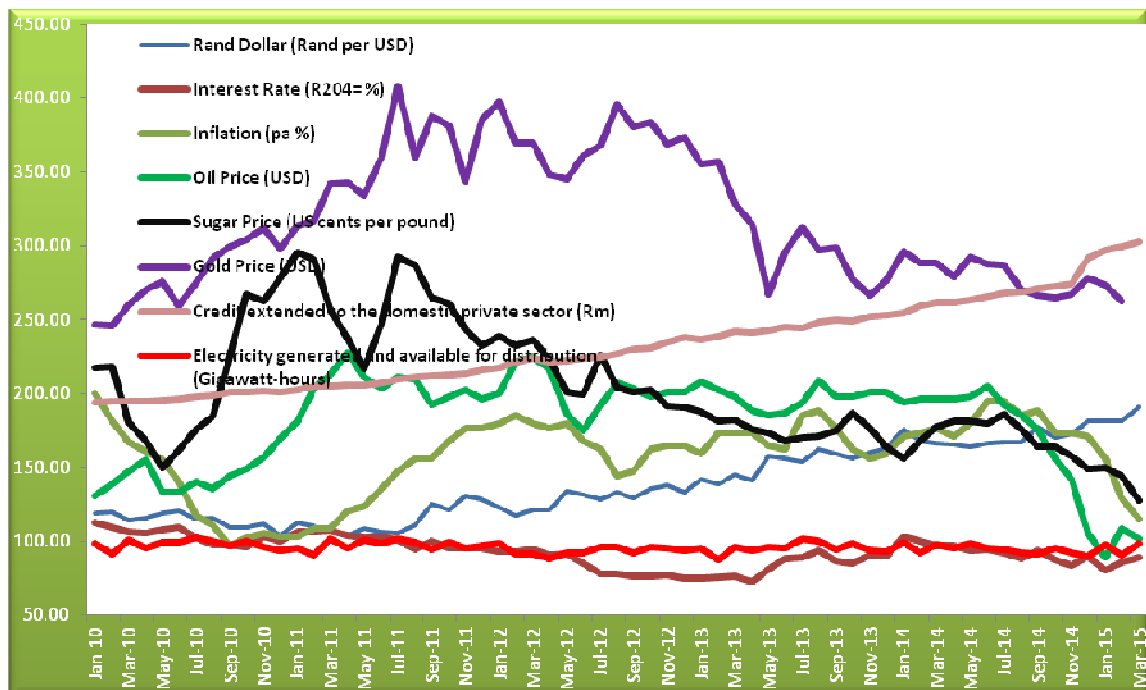
Graph 1 and 2 indicates the behaviour of the economic risk variables in index and percentage format (2005 = 100) from January 2012 to March 2015 and during the 1st quarter of 2015.

From the table and graph it seems that during the 1st quarter of 2015:

- The rand dollar exchange rate has depreciated (✓)
- Interest rates have decreased (✓)
- Inflation has decreased (✓)

- Oil prices have decreased (✓)
- Sugar prices have decreased (x)
- Gold price has decreased (x)
- Credit extended has increased (✓)
- Electricity supply has increased (✓)

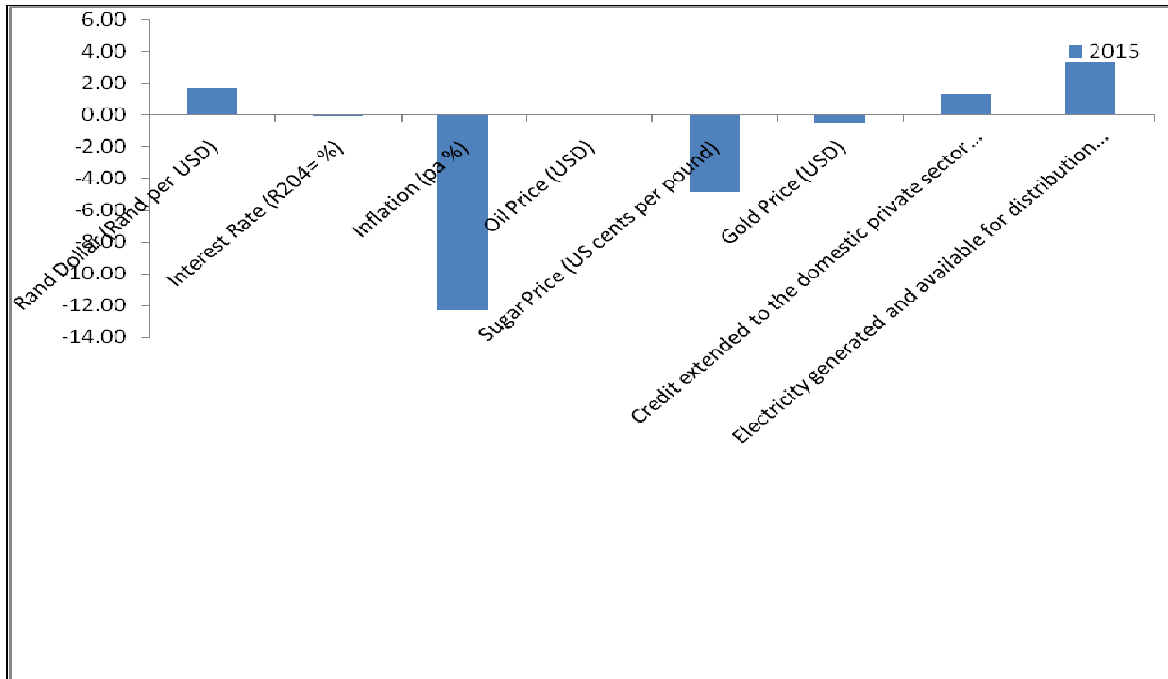
Graph 1: Behaviour of the Economic Risk/Conditions Variables in index format



(Various Sources, including Stats SA)

The graph above and below suggests that 5 variables have decreased the economic risk or improved the economic conditions in the provincial economy whilst 2 variables have increased the economic risk and decreased the economic conditions in the province.

Graph 2: Behaviour of the Economic Risk/Conditions Variables Q1 2015



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

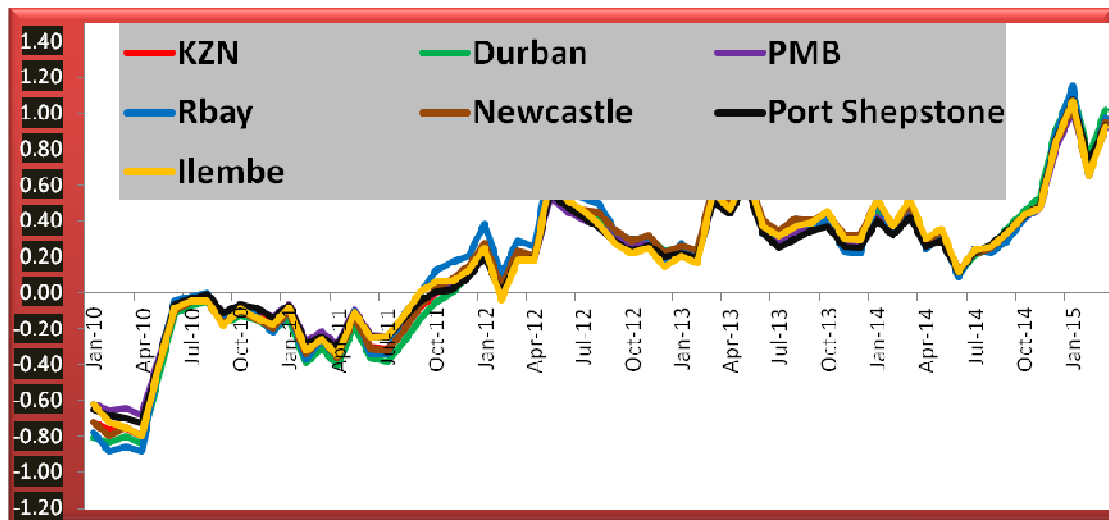


Table 4: Economic Risk/Conditions Monitor

	KZN	Durban	PMB	Rbay	Newcastle	Port Shepstone	Ilembe
Jan-12	-0.42	-0.48	-0.34	-0.33	-0.50	-0.35	-0.51
Feb-12	-2.33	-2.32	-1.98	-2.84	-2.33	-2.14	-2.63
Mar-12	0.59	0.59	0.58	0.55	0.69	0.55	0.74
Apr-12	-0.08	-0.01	-0.10	-0.14	-0.13	-0.06	-0.25
May-12	3.67	3.80	3.21	4.34	3.79	3.33	3.80
Jun-12	0.70	0.76	0.69	0.53	0.57	0.75	0.57
Jul-12	-0.73	-0.91	-0.58	-0.73	-0.68	-0.64	-0.45
Aug-12	-0.13	-0.09	-0.10	0.09	0.12	-0.29	-0.24
Sep-12	-0.27	-0.25	-0.19	-0.43	-0.42	-0.15	-0.52
Oct-12	1.50	1.49	1.31	1.85	1.61	1.34	1.74
Nov-12	0.28	0.32	0.29	0.31	0.35	0.23	0.16
Dec-12	-0.44	-0.39	-0.29	-0.90	-0.53	-0.33	-0.63
Jan-13	0.62	0.58	0.48	1.12	0.84	0.44	0.84
Feb-13	-0.69	-0.60	-0.56	-1.24	-0.84	-0.53	-0.96
Mar-13	2.27	2.24	2.02	2.88	2.43	2.02	2.54
Apr-13	-0.31	-0.20	-0.23	-0.80	-0.43	-0.21	-0.54
May-13	2.43	2.41	2.11	3.13	2.69	2.15	2.83
Jun-13	-0.35	-0.26	-0.24	-0.84	-0.30	-0.33	-0.43
Jul-13	-0.24	-0.32	-0.29	0.20	-0.17	-0.34	-0.17
Aug-13	0.16	-0.07	0.15	0.54	0.35	-0.08	0.34
Sep-13	0.10	0.15	0.19	-0.40	-0.09	0.28	-0.03
Oct-13	0.21	0.15	0.22	0.20	0.17	0.24	0.34

Nov-13	-0.09	0.02	0.03	-0.31	0.01	-0.10	-0.19
Dec-13	0.22	0.29	0.20	0.20	0.30	0.14	0.12
Jan-14	1.99	1.99	1.65	2.84	2.18	1.68	2.23
Feb-14	-0.98	-1.04	-0.75	-1.45	-1.22	-0.69	-1.14
Mar-14	0.80	0.76	0.79	0.81	0.81	0.77	0.95
Apr-14	-0.29	-0.30	-0.25	-0.40	-0.34	-0.22	-0.30
May-14	0.14	0.14	0.15	0.09	0.18	0.10	0.15
Jun-14	-0.26	-0.29	-0.20	-0.21	-0.22	-0.24	-0.29
Jul-14	1.05	1.06	0.99	0.96	0.93	1.11	1.08
Aug-14	0.23	0.31	0.22	0.10	0.16	0.25	0.04
Sep-14	1.44	1.52	1.27	1.60	1.51	1.31	1.46
Oct-14	1.37	1.45	1.29	1.20	1.15	1.41	1.21
Nov-14	1.24	1.33	1.13	1.15	1.07	1.29	1.09
Dec-14	3.21	3.36	2.75	3.54	2.88	3.18	3.14
Jan-15	3.19	3.23	2.89	3.58	3.02	3.04	3.19
Feb-15	-3.08	-3.10	-2.60	-3.57	-2.80	-2.91	-3.25
Mar-15	2.46	2.58	2.18	2.94	2.63	2.10	2.49

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

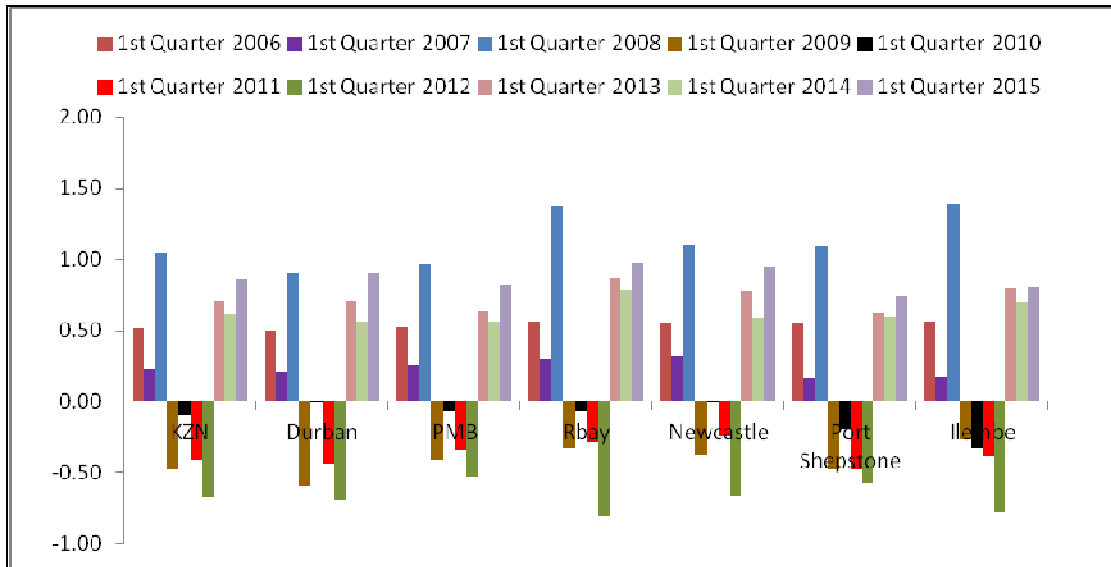
Table 5: Average 1st Quarter Economic Risk/Conditions Monitor

	KZN	Durban	PMB	Rbay	Newcastle	Port Shepstone	Ilembe
1st Quarter 2006	0.52	0.50	0.53	0.56	0.55	0.56	0.56
1st Quarter 2007	0.23	0.21	0.25	0.30	0.32	0.16	0.18
1st Quarter 2008	1.05	0.91	0.97	1.37	1.10	1.09	1.39
1st Quarter 2009	-0.48	-0.59	-0.41	-0.33	-0.37	-0.48	-0.26
1st Quarter 2010	-0.10	-0.01	-0.07	-0.07	0.00	-0.19	-0.33
1st Quarter 2011	-0.41	-0.44	-0.34	-0.28	-0.24	-0.48	-0.38
1st Quarter 2012	-0.67	-0.68	-0.52	-0.81	-0.66	-0.58	-0.78
1st Quarter 2013	0.71	0.71	0.63	0.87	0.77	0.62	0.80
1st Quarter 2014	0.61	0.56	0.56	0.79	0.59	0.60	0.70

1st Quarter 2015	0.86	0.90	0.82	0.98	0.95	0.74	0.81
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Table 5 can be graphically illustrated through graph 4.

Graph 4: Average 1st Quarter Economic Risk/Conditions Monitor



Interpretation of the Monitor

The results suggest that the economic risk profile and economic conditions of the province during the 1st quarter 2015 improved fairly dramatically, primarily because of the significant fall in international oil prices.

The 1st quarter results suggest that economic risks were the lowest in Durban, and Richards Bay, whereas the economic risks were the highest in Port Shepstone and Ilembe.