



Province of KwaZulu-Natal  
Provincial Treasury  
IMES Unit

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

## Update 16

**Clive Coetzee**

General Manager: IMES Unit

Economist

[clive.coetzee@kzntreasury.gov.za](mailto:clive.coetzee@kzntreasury.gov.za)

033 897 4538

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## KZN RISK AND CONDITIONS MONITOR – 3<sup>rd</sup> 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)
<b>Apr-13</b>	8.97	5.79	5.90	104	17.66	1,478	2,325,690	3,352
<b>May-13</b>	10.03	6.48	5.90	102	17.43	1,415	2,343,436	3,455
<b>Jun-13</b>	9.94	7.06	5.60	103	16.92	1,202	2,361,481	3,428
<b>Jul-13</b>	9.80	7.15	5.50	107	17.10	1,328	2,354,130	3,636
<b>Aug-13</b>	10.34	7.54	6.30	115	17.24	1,408	2,388,631	3,576
<b>Sep-13</b>	10.13	6.95	6.40	109	17.62	1,337	2,402,773	3,397
<b>Oct-13</b>	9.94	6.80	6.00	109	18.81	1,343	2,399,828	3,520
<b>Nov-13</b>	10.19	7.26	5.50	111	17.75	1,246	2,429,752	3,371
<b>Dec-13</b>	10.41	7.19	5.30	111	16.54	1,197	2,440,148	3,331
<b>Jan-14</b>	11.20	8.27	5.80	107	15.71	1,244	2,455,950	3,569
<b>Feb-14</b>	10.70	8.01	5.90	108	16.89	1,332	2,496,031	3,295
<b>Mar-14</b>	10.58	7.80	6.00	108	17.89	1,296	2,524,226	3,432

<b>Apr-14</b>	10.55	7.77	6.10	108	18.21	1,296	2,522,110	3,411
<b>May-14</b>	10.42	7.54	6.60	109	18.24	1,256	2,537,089	3,538
<b>Jun-14</b>	10.58	7.56	6.60	113	18.13	1,316	2,562,749	3,419
<b>Jul-14</b>	10.65	7.42	6.30	106	18.73	1,295	2,583,386	3,397
<b>Aug-14</b>	10.62	7.06	6.40	102	17.72	1,290	2,594,325	3,311
<b>Sep-14</b>	11.27	7.52	5.90	97	16.54	1,216	2,615,435	3,271
<b>Oct-14</b>	10.86	7.02	5.90	86	16.48	1,199	2,632,068	3,405
<b>Nov-14</b>	10.97	6.69	5.80	78	15.88	1,191	2,643,029	3,305
<b>Dec-14</b>	11.56	7.18	5.30	58	14.99	1,201	2,810,240	3,225
<b>Jan-15</b>	11.55	6.43	5.30	49	15.06	1,251	2,862,253	3,494
<b>Feb-15</b>	11.53	6.87	4.40	60	14.51	1,229	2,886,214	3,238
<b>Mar-15</b>	12.14	7.11	3.90	56	12.84	1,180	2,920,340	3,529
<b>April-15</b>	11.74	7.22	6.88	66	12.91	1,407	2,934,096	3,393
<b>May-15</b>	12.16	7.44	6.84	63	12.70	1,448	2,961,439	3,464
<b>June-15</b>	12.20	7.56	4.55	62	12.11	1,424	2,947,591	3,374
<b>Jul-15</b>	12.70	7.58	4.70	53	11.88	1,392	2,970,091	3,624
<b>Aug-15</b>	13.31	7.60	4.70	50	10.67	1,509	2,988,514	3,543
<b>Sep-15</b>	13.82	7.62	4.60	48	12.14	1,543	3,007,216	3,436

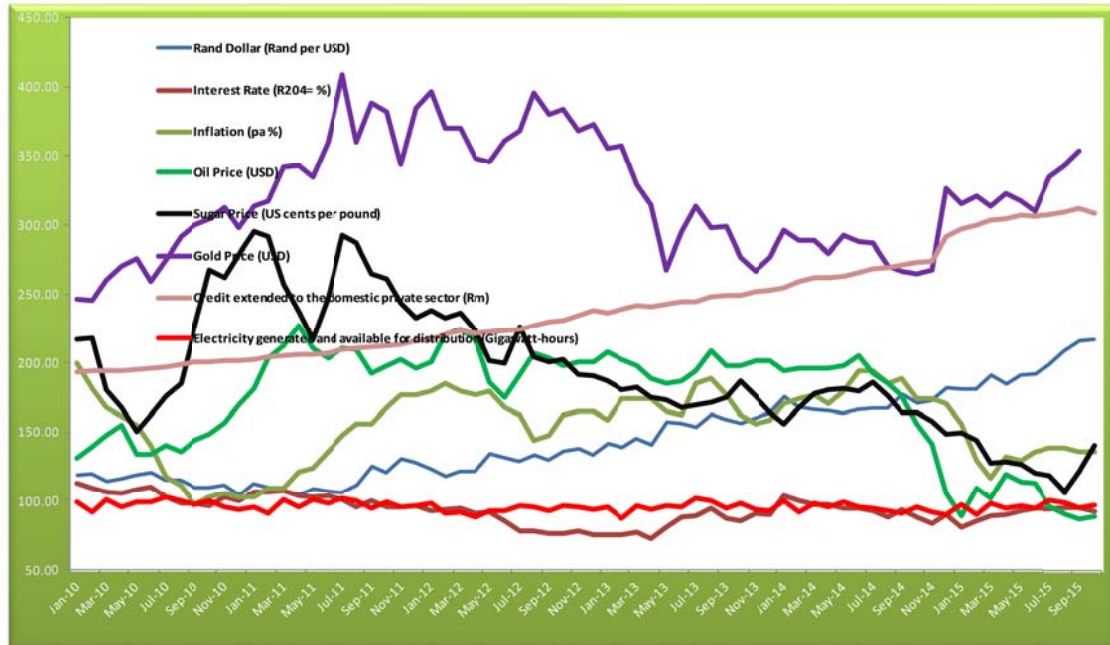
(Various Sources, including Stats SA)

Graph 1 and 2 indicates the behaviour of the economic risk variables in index and percentage format (2005 = 100) from January 2013 to September 2015 and during the 3<sup>rd</sup> quarter of 2015.

From the table and graph it seems that during the 3<sup>rd</sup> quarter of 2015:

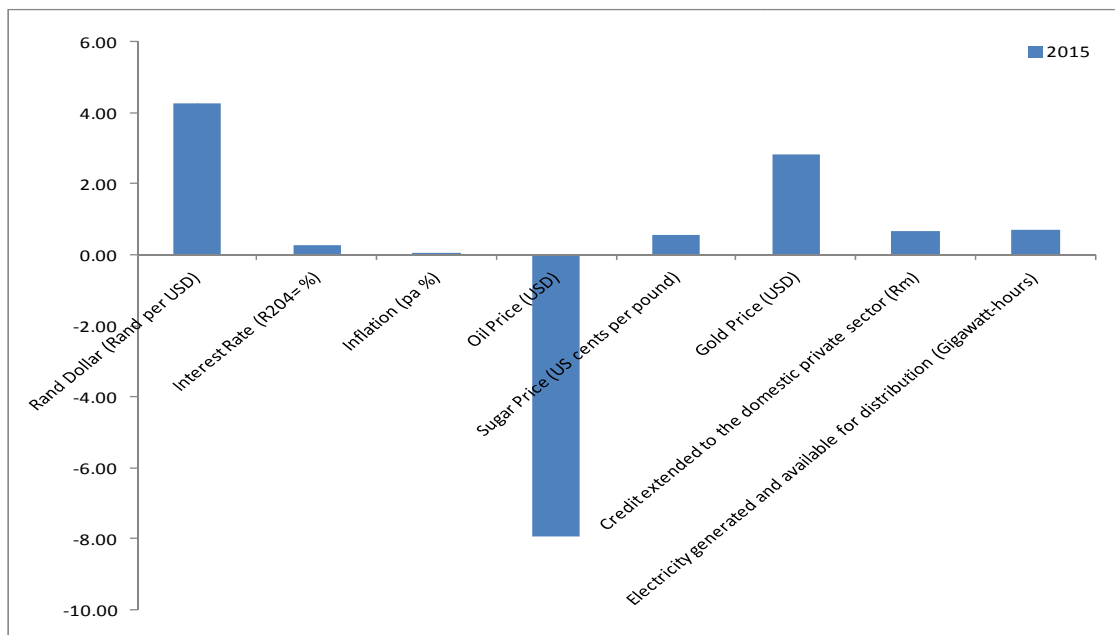
- The rand dollar exchange rate has depreciated (✓)
- Interest rates have increased (x)
- Inflation has increased (x)
- Oil prices have decreased (✓)
- Sugar prices have increased (✓)
- Gold price has increased (✓)
- Credit extended has increased (✓)
- Electricity supply has increased (✓)

**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 3<sup>rd</sup> Quarter 2015**



The graphs above suggests that only 2 variables have decreased the economic risk or improved the economic conditions in the provincial economy whilst 6 variables have increased the economic risk and decreased the 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:**

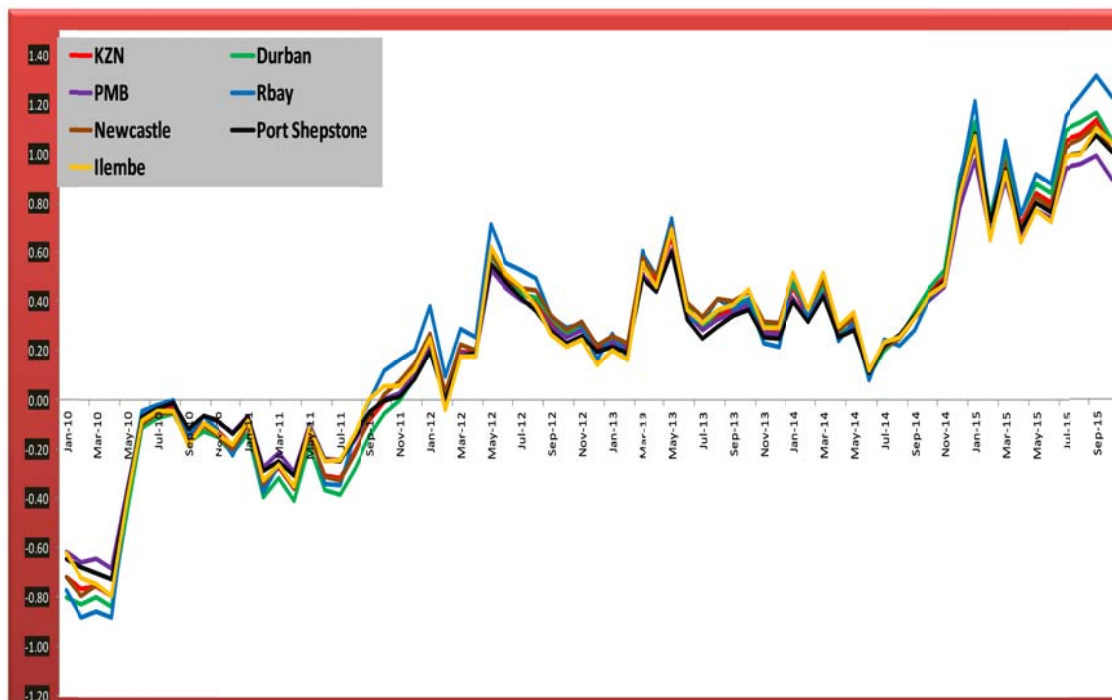
**ERC<sub>loc</sub> = economic risk/conditions monitor for the province or region**

### 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
<b>Apr-13</b>	-0.32	-0.17	-0.24	-0.93	-0.39	-0.26	-0.55
<b>May-13</b>	2.30	2.25	1.99	2.93	2.50	2.03	2.76
<b>Jun-13</b>	-0.46	-0.32	-0.31	-1.21	-0.37	-0.45	-0.52
<b>Jul-13</b>	-0.19	-0.30	-0.24	0.43	-0.15	-0.26	-0.13
<b>Aug-13</b>	0.16	0.05	0.16	0.60	0.30	0.14	0.32
<b>Sep-13</b>	0.14	0.22	0.23	-0.44	0.00	0.29	0.01
<b>Oct-13</b>	0.20	0.13	0.21	0.20	0.16	0.24	0.34
<b>Nov-13</b>	-0.16	-0.06	-0.07	-0.51	-0.06	-0.16	-0.25
<b>Dec-13</b>	0.20	0.29	0.19	0.11	0.29	0.12	0.10
<b>Jan-14</b>	1.99	1.95	1.64	2.94	2.14	1.68	2.26
<b>Feb-14</b>	-0.92	-0.98	-0.72	-1.30	-1.15	-0.62	-1.12
<b>Mar-14</b>	0.77	0.73	0.77	0.73	0.79	0.74	0.95
<b>Aprl-14</b>	-0.25	-0.25	-0.21	-0.38	-0.29	-0.18	-0.26
<b>May-14</b>	0.19	0.21	0.22	0.07	0.23	0.15	0.20
<b>Jun-14</b>	-0.29	-0.33	-0.25	-0.17	-0.27	-0.24	-0.33
<b>Jul-14</b>	0.98	0.99	0.91	0.90	0.88	1.01	1.04
<b>Aug-14</b>	0.29	0.38	0.29	0.16	0.25	0.29	0.08
<b>Sep-14</b>	1.29	1.38	1.12	1.41	1.38	1.14	1.34
<b>Oct-14</b>	1.39	1.48	1.21	1.24	1.22	1.36	1.24
<b>Nov-14</b>	1.04	1.13	0.89	0.99	0.93	1.03	0.90
<b>Dec-14</b>	4.68	4.86	4.10	4.78	4.39	4.58	4.46
<b>Jan-15</b>	3.29	3.20	2.70	4.43	3.03	3.14	3.21
<b>Feb-15</b>	-3.07	-3.07	-2.33	-3.63	-2.78	-2.90	-3.23
<b>Mar-15</b>	2.45	2.53	2.16	3.17	2.60	2.10	2.47
<b>April-15</b>	-2.70	-2.73	-2.13	-3.20	-2.53	-2.53	-2.80
<b>May-15</b>	1.40	1.40	1.16	1.78	1.39	1.29	1.47
<b>June-15</b>	-0.32	-0.26	-0.26	-0.41	-0.31	-0.34	-0.44
<b>Jul-15</b>	2.98	3.03	2.45	3.43	2.93	2.73	3.15
<b>Aug-15</b>	1.28	1.32	1.10	1.88	1.27	1.13	1.11
<b>Sep-15</b>	1.08	0.93	0.71	1.24	0.95	1.21	1.47

The average risk value for the province and each of the regions for the 3<sup>rd</sup> quarter of 2015 are displayed in the table below (table 5).

**Table 5: Average 3<sup>rd</sup> Quarter Economic Risk/Conditions Monitor**

	KZN	Durban	PMB	Rbay	Newcastle	Port Shepstone	Ilembe
3rd Quarter 2006	1.22	1.31	1.16	1.25	1.19	1.18	0.99
3rd Quarter 2007	-0.09	-0.14	-0.01	-0.13	-0.15	-0.01	-0.13
3rd Quarter 2008	2.19	2.18	1.96	2.36	2.08	2.16	2.36
3rd Quarter 2009	0.08	-0.05	0.10	0.04	-0.04	0.20	0.33
3rd Quarter 2010	-0.35	-0.45	-0.21	-0.62	-0.47	-0.16	-0.26
3rd Quarter 2011	1.16	1.09	1.02	1.54	1.18	1.13	1.39
3rd Quarter 2012	-0.32	-0.37	-0.23	-0.26	-0.28	-0.28	-0.38
3rd Quarter 2013	0.04	-0.01	0.05	0.20	0.05	0.06	0.07
3rd Quarter 2014	0.85	0.92	0.77	0.82	0.83	0.81	0.82
3rd Quarter 2015	1.78	1.76	1.42	2.18	1.72	1.69	1.91

Table 5 can be graphically illustrated through graph 4.

**Graph 4: Average 3<sup>rd</sup> 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 3<sup>rd</sup> quarter 2015 improved significantly, primarily because of the depreciation of the currency and the decrease in the oil price.

The 3<sup>rd</sup> quarter 2015 results suggest that economic risks were the lowest in Richards Bay and iLembe whereas the economic risks were the highest in Pietermaritzburg and Port Shepstone.