

**CONSUMER PRICE INDEX**

**MONTHLY REPORT  
SEPTEMBER 2008**



**PREPARED BY :  
BUREAU OF STATISTICS**

**17/10/08**

## **THE CONSUMER PRICE INDEX**

### **General background**

The bureau is mandated to collect the Consumer Price Index (CPI) on a quarterly basis since its establishment by Parliament in 1991. As of March 1994, a CPI basket was formalized and this became the new base period for reference and comparison for future CPI surveys. The CPI has since been maintained, revised and compiled by the bureau, however at the turn of the century (2000) the commodities available for consumers further shifted, making the 1994 basket and the method of splicing obsolete.

Fortunately in 2006, with external financial assistance, the Household Income & Expenditure Survey (HIES) was implemented. The subsequent analysis of consumer spending became the basis for the re-weighted CPI of 2008.

The tentative timetable for monitoring the current CPI will involve surveying on a monthly basis beginning from the base period. This will ensure the bureau has sufficient data to establish trends and formulate series analysis. It is important to monitor the prices of commodities respective to price fluctuations caused by cyclical, seasonal or random factors due to supply and demand. Analysis of the latter should incorporate price fluctuations of certain commodities such as rice and fuel. In the future the bureau will resume normal field protocol of monitoring on a quarterly basis.

### **Purpose of the CPI**

A CPI is a number which expresses the changes with time the level of prices of consumer goods weighted in accordance with patterns of consumer expenditure. It is compiled by making a selection of items which together are indicative of household spending patterns, and of the overall changes in prices with time. When the index is being established, (a base year) these items are given individual weights which expresses their relative importance. Prices for the new base period were derived by surveying the respective providers of good and services, from both the private and public sectors. The base period indices are represented as the weights, subsequently the sum of the weights represents the base period index of 100.

Every month or quarter, the current price for each selected item is divided by the base price, and the resulting (price relative) multiplied by the corresponding weight. The sum of these products is the new index number.

### **Methodology**

#### *Calculation of Index – Laspyre's Formulae*

Simple Index- single item index

$$= \frac{\text{Price/ Quantity/ Value of a single item in period } t}{\text{Price/ Quantity/ Value of a single item in base/reference/period } 0} \cdot 100$$

$$i_t = \left( \frac{y_t}{y_0} \right) \times 100$$

where

$i_t$  = Index in the t/curren t/ period of item

$y_0$  – the value of single unit in the base period

$y_t$  – the value of single unit in the period t

A much simpler way to interpret Laspeyre's formula when deriving the index is the summation of current prices ( $P_t$ ) divided by base prices ( $P_0$ ) multiplied by the base weight ( $W_0$ ) and is represented by the following formula below;

$$L_p = \frac{\sum P_t \times q_0}{\sum P_0 \times q_0}$$

$$L_p = \sum \left( \frac{P_t}{P_0} \right) \frac{P_0 \times q_0}{\sum P_0 \times q_0} = \sum \left( \frac{P_t}{P_0} \right) w_0$$

This formula represents the arithmetic average (mean) of price relative to the base period weight of quantities.

CPI is a measurement of trends in retail prices over time; it is also referred to as the Retail Price Index. The term “cost of living” index is discouraged due to its distinct concepts, the CPI measures trends in prices. A subsequent cost of living index can thus be calculated from the CPI.

### **<sup>1</sup>Changes from Previous CPI basket 1994 to 2006**

The changes from the previous CPI basket to the current basket reflect the changes in patterns of spending of consumers (households) derived from the Household Income and Expenditure Survey 2006. The changes can be seen in the tables below. Overall the current basket of goods selected for monitoring of the CPI is much smaller than the previous with only 73 items compared with over a hundred previously selected in 1994. All the group proportions have changed indicative of the changes on how consumers manage monetary resources according to their needs and priorities. The most noticeable changes are obviously “food” and “Alcohol and tobacco”. A reflection on the current allocation or proportions of the respective indices shows that there has been a drop in expenses on food and increases in alcohol and tobacco. This does not necessarily mean that consumers are spending less of their income on food as in 1994, but does suggest that more emphasis is placed on budgeting. The more recent change the in level of income is one factor that has affected consumer spending patterns. The bureau is of the view that alcohol and tobacco was under-represented in 1994, hence the increase reflects the magnitude of this factor. It can safely be deduced that consumption of alcohol and tobacco respective to the overall spending by consumers has not significantly changed, although this new basket depicts this particular group and index more accurately than previous.

<sup>1</sup> Documentation on deriving the current CPI basket is available from the Bureau of Statistics and the Office of the Secretary for Finance.

### 1994 Weights

Group	Sub-group	Group wt	Sub-group wt
Food	Cereal	62.46	7.46
	Meat		18.85
	Seafood		5.71
	Fruit/Vegies		11.25
	Dairy		2.10
	Drinks		0.76
	Miscellaneous		14.73
	Takeaway		1.60
Alcohol/Tobacco	Alcohol	2.08	1.21
	Tobacco		0.87
Clothing	Clothing	7.76	6.30
	Footwear		1.46
Housing	Rent	1.26	1.26
	Maintenance		0.00
Household Ops	Bills	12.28	1.75
	Appliances		3.61
	Furniture		4.40
	Supplies		2.52
Trans/Comm.	Transport	8.94	8.50
	Communication		0.44
Miscell.	Health	5.22	0.00
	Education		0.00
	Recreation		1.98
	Personal Products		2.60
	Miscellaneous		0.64

### 2006 Weights

Group	Sub-group	Group wt	Sub-group wt
Food	Cereal	55.71	21.74
	Meat		14.39
	Seafood		4.67
	Fruit/Vegies		1.19
	Dairy		3.65
	Drinks		0.96
	Miscellaneous		6.56
	Takeaway		2.56
Alcohol/Tobacco	Alcohol	16.47	4.27
	Tobacco		12.20
Clothing	Clothing	2.17	2.03
	Footwear		0.14
Housing	Rent	3.48	0.23
	Maintenance		3.25
Household Ops	Bills	8.82	1.95
	Appliances		3.24
	Furniture		0.53
	Supplies		3.10
Trans/Comm.	Transport	9.47	9.34
	Communication		0.12
Miscell.	Health	3.88	0.68
	Education		0.50
	Recreation		1.14
	Personal Products		0.90
	Miscellaneous		0.66

Source: CPI-Rebase documentation Report

### Monthly Change

The CPI for the second month (September) of this Fiscal Year ending 2009 is 103.83. This implies that the price index has increased by 3.83% from the previous month ending August 31st 2008 (base period). Table 1 shows the changes in prices compared to the base period.

**Table 1** % change in Group Indices and Overall Consumer Price Index

GROUP	AUG '08 INDEX	SEP '08 INDEX	DIFFERENCE	% INCREASE (+) DECREASE (-)
FOOD	55.73	58.70	2.97	5.33
ALCOHOL & TOBACCO	16.47	16.63	0.16	0.97
CLOTHING	2.17	2.39	0.22	10.14
HOUSING	3.48	3.31	-0.17	-4.89
HOUSEHOLD OPERATIONS	8.80	9.47	0.67	7.64
TRANSPORT & COMMUNICATION	9.47	9.30	-0.17	-1.84
MISCELLANEOUS	3.88	4.03	0.15	3.82
TOTAL	100.00	103.83	3.83	3.83

## Observation

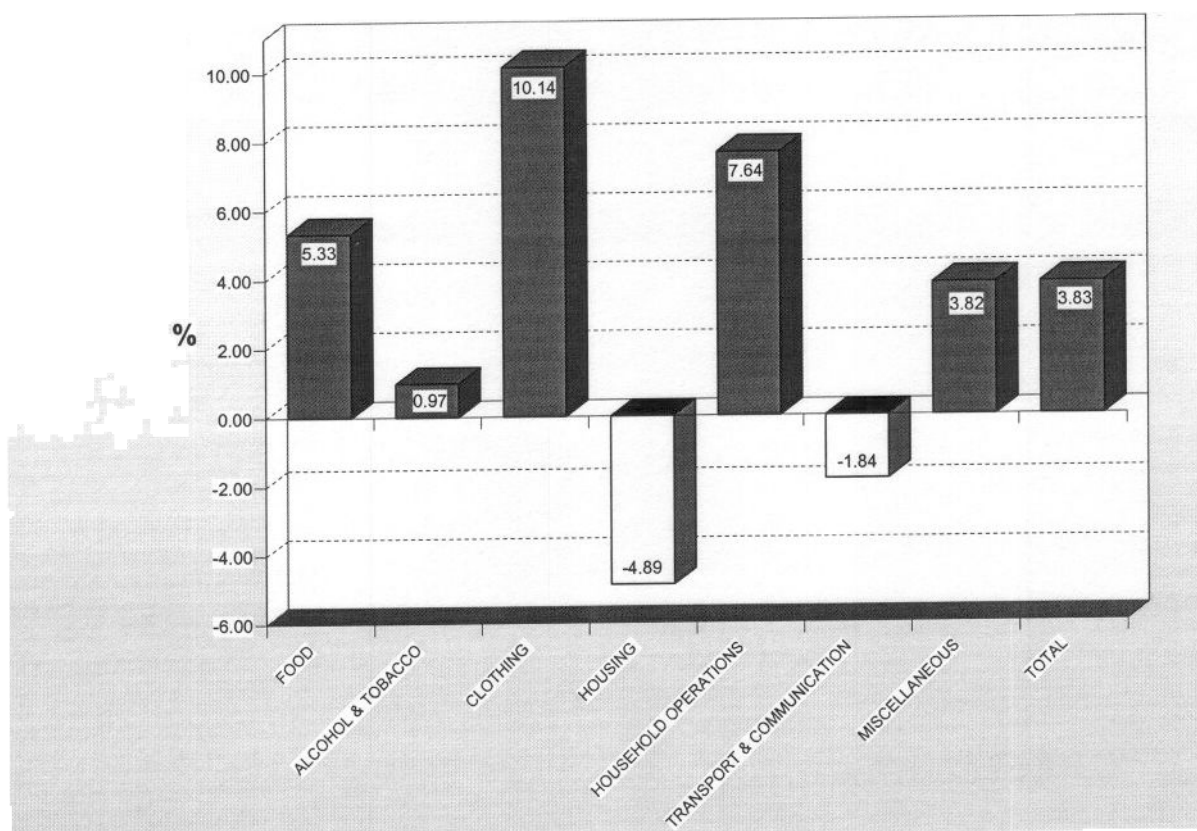
The monthly change for this period ending September 30<sup>th</sup> is an increase of 3.83 points. This is a result of increases from five of the seven group indices. It can be seen in Graph 1, the Clothing index experienced the highest increase with 10.14% when compared to the previous month. The Clothing group and subsequent index, consists of exactly four items and the increase is mainly attributed to the price of ladies shoes. Although this increase is significant, the overall impact of the increase is relatively insignificant since the proportion of the clothing index is only 2.17 of the total CPI. The index with the second highest increase is Household Operations with an increase of 7.64%. Commodities contributing to the increase are the cost of freezer and 15 inch tv. Similarly with clothing, the Household Operations index represents a slightly higher proportion (8.82) of the overall CPI both accounts for little variances in the overall index.

The group that represents a major bulk of the CPI and consequently of most interest is the Food Index, and is reflected by a weight proportion of 55.72. Minor increase from this group in respect to its weight will have a more significant impact on the overall CPI than those with smaller proportions previously mentioned. Observations of the food index showed an increase of 5.33% from the base period suggesting that the average price of food has increased by over 5 percent. Commodities that contributed to the increase are cereals, specifically rice (per kilogram), and packets of biscuits (breakfast crackers); vegetables such as onions, potatoes; as well as dairy products like butter and a pack of a dozen eggs.

The remaining components of the CPI Index experiencing increases are the Miscellaneous and Alcohol & Tobacco index with 3.82 and 0.92 percent respectively. Commodities contributing to the increase of the miscellaneous index are a 64 page exercise book, a blank CD-R with 700mb storage capacity and toothpaste. Subsequently, the commodity raising the Alcohol and Tobacco index is the mean price of a pack of Alpine cigarettes.

The Graph below illustrates that the Housing and Transport and Communication Index recorded the only decreases for its goods and service with -4.89 and -1.80 percent respectively. The sole contributor for the Housing index is the decreased price of 4x2 timbers and the price of 1 litre canister of motor oil for the Transport and Communications index. It is anticipated that the factor's attributing to the decrease maybe the spending patterns of consumer which is clearly evident in the HIES group weights. These commodities may have longer shelved life when compared to the other necessity such as food.

**Graph 1. Monthly % Increase/Decrease for the period ending September 30th, 2008.**



## Conclusion

The magnitude of change in the food index dictates the movement of the CPI due to its representative proportion in the basket, followed by the Alcohol and Tobacco group. Consumer spending as according to the HIES analysis are structured around these two indices and to a lesser extent also Transport and Communications, and Household Operations indexes. Supply and demand also dictates certain resurgences in some prices of commodities pointing towards cyclical or seasonal variations. Initial assessments suggest a relationship between inflation and scarcity of commodities at the beginning and end of each scheduled shipment of supplies. What also needs to be taken into consideration as well are the random variations affecting prices, particularly in the case of rice and fuel which are being influenced by soaring global prices making it much more difficult to predict or anticipate. Particular consideration should be considered on shipment of supplies as well as tariffs on certain staple commodities as a mechanism for maintaining or controlling price fluctuations for the benefit of consumers and society.

As mentioned previously, the survey will be conducted on a monthly basis to ensure compilation of reliable data from respondents and to establish time series trends for future analysis.

Consumer Price Index August 31<sup>st</sup> to September 30<sup>th</sup>, 2008

REF-NO	ITEM NAME	DESCRIPTION	WEIGHT	01 AUG '08 BASE PRICE	AUG '08 PRICE	INDEX	SEP '08 PRICE	INDEX
		<u>RICE &amp; OTHER CEREALS</u>						
1010	Rice	Imported rice/sunwhite/bag/25kg	15.48	41.00	41.00	15.48	53.00	20.01
1020	Bread (sliced loaf)	Bread/white/local/sliced loaf	3.65	1.75	1.75	3.65	2.00	4.17
1030	Noodles	Noodles/sachet/85g	1.68	0.53	0.53	1.67	0.57	1.79
1040	Other bread and Biscuits	Dry biscuits/brand/	0.54	2.10	2.10	0.54	2.97	0.76
1050	Self raising	Imported Flour/self raising/1kg	0.39	2.50	2.50	0.39	3.08	0.48
	<b>TOTAL:</b>	<b>(rice &amp; other cereal)</b>	<b>21.74</b>			<b>21.73</b>		<b>27.21</b>
		<u>MEAT</u>						
1060	Chicken	Imported Chicken/cuts/2kg	7.99	9.18	9.18	7.99	7.83	6.82
1070	Canned Meat	Tinned beef/corned beef/imperial/326g	3.63	4.53	4.53	3.63	4.54	3.64
1080	Canned Meat	Tinned meat/luncheon/397g	1.69	2.43	2.43	1.69	0.67	0.46
1090	Sausages	Sausages/1pack/pork/1kg	1.07	7.33	7.33	1.07	7.33	1.07
	<b>TOTAL:</b>	<b>(meat)</b>	<b>14.38</b>			<b>14.38</b>		<b>11.99</b>
		<u>SEAFOOD</u>						
1100	Fish	Tuna/Skipjack(bonita)/1 kg	2.50	6.00	6.00	2.50	6.40	2.67
1110	Canned Fish	Imported tinned mackerel/brand/425g	0.93	2.55	2.55	0.93	2.70	0.98
1120	Reef fish	Reef fish/1 kg	0.75	8.00	8.00	0.75	8.00	0.75
1130	Canned Fish	Tinned sardines/sardines/425g	0.50	2.35	2.35	0.50	2.30	0.49
	<b>TOTAL:</b>	<b>(sea food)</b>	<b>4.68</b>			<b>4.68</b>		<b>4.89</b>
		<u>FOOD, FRUIT &amp; VEGETABLES</u>						
1140	Canned Tomatoes	Tinned tomatoes/brand/400g	0.71	1.97	1.97	0.71	1.61	0.58
1150	Onions and Chives	Onions/sea feight/1kg	0.34	3.95	3.95	0.34	4.30	0.37
1160	Potatoes	Potatoes/sea feight/1kg	0.14	3.90	3.90	0.14	4.07	0.15
	<b>TOTAL:</b>	<b>(fruits &amp; vegetables)</b>	<b>1.19</b>			<b>1.19</b>		<b>1.10</b>



# Consumer Price Index - August 31<sup>st</sup> to September 30<sup>th</sup>, 2008

REF-NO	ITEM NAME	DESCRIPTION	WEIGHT	01 AUG '08 BASE PRICE	AUG '08 PRICE	INDEX	SEP '08 PRICE	INDEX
	<u>DAIRY</u>							
1170	Butter	Imported butter/brand/250g	1.43	2.65	2.65	1.43	3.20	1.73
1180	Milk powder	Milk powder/brand/1kg	0.99	12.87	12.87	0.99	12.25	0.94
1190	Cooking Oil	Cooking oil/brand/750ml	0.52	4.57	4.57	0.52	4.48	0.51
1200	Fresh milk	Fresh milk/full cream/1litre	0.42	2.63	2.63	0.42	2.88	0.46
1210	Eggs	Imported Eggs/dozen/600g	0.29	5.47	5.47	0.29	5.73	0.30
	<b>TOTAL:</b>	<b>(dairy)</b>	<b>3.65</b>			<b>3.65</b>		<b>3.94</b>
	<u>OTHER FOODS</u>							
1220	Soft drink	Soft drinks//brand/1can/375ml	0.96	1.03	1.03	0.96	0.96	0.89
1230	Sugar	Imported sugar/white/brand/2kg	4.60	4.10	4.10	4.60	3.82	4.28
1240	Soya sauce	Soya sauce/light/500ml	0.58	2.90	2.90	0.58	3.03	0.61
1250	Tea	Imported tea/100 bags/180g	0.49	4.60	4.60	0.49	3.85	0.41
1260	Coffee	Imported coffee/brand/100g	0.45	7.42	7.42	0.45	5.37	0.33
1270	Baby food	Baby food/heinz/vanilla custard/110g	0.44	1.27	1.27	0.44	1.40	0.49
	<b>TOTAL:</b>	<b>(other food)</b>	<b>7.52</b>			<b>7.52</b>		<b>7.00</b>
	<u>TAKE AWAY</u>							
1280	Plate of food/Take away	Plate of food/take away	2.20	3.77	3.77	2.20	3.77	2.20
1290	Dinner out	Dinner for two/Formal/Reynaldo	0.36	22.50	22.50	0.36	22.50	0.36
	<b>TOTAL:</b>	<b>(take away)</b>	<b>2.56</b>			<b>2.56</b>		<b>2.56</b>



# Consumer Price Index August 31<sup>st</sup> to September 30<sup>th</sup>, 2008

REF-NO	ITEM NAME	DESCRIPTION	WEIGHT	01 AUG '08 BASE PRICE	AUG '08 PRICE	INDEX	SEP '08 PRICE	INDEX
	ALCOHOL & TOBACCO							
1410	Beer	Beer/brand/1can/375ml	4.27	2.00	2.00	4.27	1.90	4.06
1420	Cigarettes	Cigarettes/Alpine brand/1packet/25 sticks	12.20	5.50	5.50	12.20	5.67	12.57
	TOTAL:	(alcohol & tobacco)	16.47			16.47		16.63
	CLOTHING							
1510	Nappies	Nappies/plastic/brand/size medium/per pack	0.81	17.04	17.04	0.81	10.03	0.48
1520	Mumu	Casual/imported formal dress/mumu size large	0.85	15.60	15.60	0.85	15.30	0.83
1530	T/Shirt	Imported T-shirt/duel sex/size large	0.37	10.65	10.65	0.37	11.67	0.41
	TOTAL:	(clothing)	2.03			2.03		1.72
	FOOTWEAR							
1540	Footwear	Shoes/womens slip-ons/size 9	0.14	3.00	3.00	0.14	14.35	0.67
	TOTAL:	(footwear)	0.14			0.14		0.67
	RENT							
1610	Rent for dwelling per month	Rent unit/MQ/Location	0.23	75.00	75.00	0.23	75.00	0.23
	TOTAL:	(rent)	0.23			0.23		0.23
	MAINTENANCE							
1620	Ceramic tiles	Tiles/plastic tiles/size square cm/1case()	1.54	68.80	68.80	1.54	68.80	1.54
1630	Cement	Cement/bag/40 kg	0.76	20.60	20.60	0.76	20.60	0.76
1640	Paint	Paint/brand/enamel/4litre	0.51	62.63	62.63	0.51	69.92	0.57
1650	Timber	Timber/treated pine/4x2/metres	0.44	47.00	47.00	0.44	22.50	0.21
	TOTAL:	(maintenance)	3.25			3.25		3.08

# Consumer Price Index - August 31<sup>st</sup> to September 30<sup>th</sup>, 2008

REF-NO	ITEM NAME	DESCRIPTION	WEIGHT	01 AUG '08 BASE PRICE	AUG '08 PRICE	INDEX	SEP '08 PRICE	INDEX
	<u>BILLS</u>							
1710	Electricity bill	Electricity bill/kilowatt per hour	1.60	0.30	0.30	1.60	0.30	1.60
1720	Water bill	Water Bill/per 10 litre	0.35	0.03	0.03	0.35	0.03	0.35
	<b>TOTAL:</b>	(bills)	<b>1.95</b>			<b>1.95</b>		<b>1.95</b>
	<u>APPLIANCES</u>							
1730	Freezer	Freezer	1.12	750.00	750.00	1.12	1272.50	1.90
1740	Refrigerator	Refrigerator	0.73	1635.00	1635.00	0.73	1635.00	0.73
1750	Television	Television/brand/15 inch	0.71	369.50	369.50	0.71	462.50	0.89
1760	Washing machine	Washing machine/brand/5kg capacity	0.67	1195.00	1195.00	0.67	1107.50	0.62
	<b>TOTAL:</b>	(appliances)	<b>3.23</b>			<b>3.23</b>		<b>4.14</b>
	<u>FURNITURE</u>							
1770	Light fitting	Light fitting/brand/60watt globe	0.27	2.50	2.50	0.27	1.95	0.21
1780	beds	Beds/single/foam-sponge	0.26	400.00	400.00	0.26	375.00	0.24
	<b>TOTAL:</b>	(furniture)	<b>0.53</b>			<b>0.53</b>		<b>0.45</b>
	<u>SUPPLIES</u>							
1790	Toilet paper	Toilet Paper/brand/1000 sheets	1.22	2.15	2.15	1.22	2.01	1.14
1800	Washing soap powder	Washing soap powder/brand/500g	0.71	5.60	5.60	0.71	3.58	0.45
1810	Mosquito coil	Mosquito coil/1 packet/10 coils/120g	0.69	1.14	1.14	0.69	1.15	0.70
1820	Dishwashing liquid	Dishwashing liquid/brand/500ml	0.30	3.48	3.48	0.30	2.82	0.24
1830	Batteries	Batteries/brand/1 pack/2 x size D	0.17	2.52	2.52	0.17	5.88	0.40
	<b>TOTAL:</b>	(supplies)	<b>3.09</b>			<b>3.09</b>		<b>2.93</b>
	<u>TRANSPORT &amp; COMMUNICATIONS</u>							
1910	Petrol	Petrol/1 litre	5.34	2.00	2.00	5.34	2.00	5.34
1920	Airfair	Return ticket/Australia	2.88	1488.00	1488.00	2.88	1468.00	2.88
1930	Oil	Oil/brand/multi-grade/1litre	0.48	14.37	14.37	0.48	9.17	0.31
1940	Deisel	Diesel/1 litre	0.43	2.05	2.05	0.43	2.05	0.43
1950	Departure tax	Departure Tax	0.22	50.00	50.00	0.22	50.00	0.22
1960	Other communication	International call card to Australia/rate per hour	0.12	6.00	6.00	0.12	6.00	0.12
	<b>TOTAL:</b>	(transport & communication)	<b>9.47</b>			<b>9.47</b>		<b>9.30</b>

Consumer Price Index August 31<sup>st</sup> to September 30<sup>th</sup>, 2008

REF-NO	ITEM NAME	DESCRIPTION	WEIGHT	01 AUG '08 BASE PRICE	AUG '08 PRICE	INDEX	SEP '08 PRICE	INDEX
	HEALTH							
2010	Hospital charges	Hospital charges/Minor surgery	0.35	20.00	20.00	0.35	20.00	0.35
2020	Doctors/dentists fees	Doctors/dentist/Consultation fees	0.33	10.00	10.00	0.33	10.00	0.33
	<b>TOTAL:</b>	<b>(health)</b>	<b>0.68</b>			<b>0.68</b>		<b>0.68</b>
	EDUCATION							
2030	School clothing	School clothing/Shirts/shorts	0.34	10.00	10.00	0.34	10.00	0.34
2040	Books & schooling supplies	Exercise Books/brand/64pages	0.16	0.85	0.85	0.16	1.20	0.23
	<b>TOTAL:</b>	<b>(education)</b>	<b>0.50</b>			<b>0.50</b>		<b>0.57</b>
	RECREATION							
2050	Records, Cassettes, CD's	Blank CDR/brand/single/700mb	0.64	1.25	1.25	0.64	1.35	0.69
2060	Fishing equipment and supplies	Fishing hook/brand/Nickel coated/size 7/0	0.34	0.20	0.20	0.34	0.20	0.34
2070	DVD hire	DVD hire	0.16	2.00	2.00	0.16	2.00	0.16
	<b>TOTAL:</b>	<b>(recreation)</b>	<b>1.14</b>			<b>1.14</b>		<b>1.19</b>
	PERSONAL PRODUCTS							
2080	Bathing soap (liquid/bar )	Soap/bar/brand/100g	0.60	0.89	0.89	0.60	0.85	0.57
2090	Toothpaste	Toothpaste/brand/90g	0.17	2.63	2.63	0.17	3.00	0.19
2100	Deodorant, body spray	Deodorant/brand/body spray/100ml	0.13	3.90	3.90	0.13	4.93	0.16
	<b>TOTAL:</b>	<b>(personal products)</b>	<b>0.90</b>			<b>0.90</b>		<b>0.93</b>
	MISCELLANEOUS							
2110	Overseas, Newspaper, Journals	Magazine/PIM	0.36	4.95	4.95	0.36	4.95	0.36
2120	Dog food	Dog food/canned/700ml	0.30	1.95	1.95	0.30	1.95	0.30
	<b>TOTAL:</b>	<b>(miscellaneous)</b>	<b>0.66</b>			<b>0.66</b>		<b>0.66</b>
	<b>GRAND TOTAL:</b>	<b>(all groups)</b>	<b>100.00</b>			<b>100.00</b>		<b>103.82</b>

Consumer Price Index August 31<sup>st</sup> to September 30<sup>th</sup>, 2008

**SUMMARY SHEET**

GROUP	AUG '08 INDEX	SEP '08 INDEX	DIFFERENCE	% INCREASE (+) DECREASE (-)
FOOD	55.73	58.70	2.97	5.33
ALCOHOL & TOBACCO	16.47	16.63	0.16	0.97
CLOTHING	2.17	2.39	0.22	10.14
HOUSING	3.48	3.31	-0.17	-4.89
HOUSEHOLD OPERATIONS	8.80	9.47	0.67	7.64
TRANSPORT & COMMUNICATION	9.47	9.30	-0.17	-1.84
MISCELLANEOUS	3.88	4.03	0.15	3.82
TOTAL	100.00	103.83	3.83	3.83