



THE CAYMAN ISLANDS' CONSUMER PRICE INDEX REPORT: SEPTEMBER 2016

(Date of Release: November 9, 2016)

CPI Increases by 0.5% in the Third Quarter of 2016

The overall Consumer Price Index (CPI) for the third quarter of 2016 was **102.7**, up by 0.5 percent when compared to the third quarter of 2015. A comparison with the previous quarter ending June 2016 indicates an increase of 2.3 percent.

Figure 1: Inflation Rates (September 2012 – September 2016) (% Change in CPI of Current Quarter over Same Quarter a Year Ago)



Annual changes: September 2016 over September 2015

The overall **0.5** percent increase in September 2016 in comparison to September 2015 is mainly due to increased prices for items in the following divisions:

• **Restaurants and hotels:** the division's index rose significantly **6.6** percent mainly due to the sharp increases of 8.7 percent in the accommodation services price index and 6.3 percent in catering services.



- **Recreation and culture:** this division's price index rose by **2.6** percent, coming mainly from other recreational items and equipment, gardens and pets which went up by 5.6 percent; recreational and cultural services by 4.3 percent; and other major durables for recreation and culture by 1.5 percent. In contrast, the average prices of audio-visual, photographic and information processing equipment down by 7.3 percent, and of newspapers and stationery by 4.1 percent.
- **Education**: there was a **1.2** percent rise in the price level due to increases in the average school fees for pre-primary and primary education by 2.0 percent, and for secondary education by 0.5 percent. Tertiary education recorded no movement in its index for the period under review.
- **Housing and utilities:** the price index increased by **0.5** percent. Increased prices for actual rentals and for imputed rentals owner-occupied housing with inflation rates of 6.5 and 3.5 percent respectively were the main contributors. However, prices for electricity, gas and other fuels recorded the largest decline of 18.4 percent. Water supply and miscellaneous services moved downward by 13.2 percent.
- **Alcohol and tobacco:** the index for this division moved upward by **0.5** percent as a result of a 0.5 percent rise in both alcohol and tobacco prices.
- Communication: there was a 0.5 percent rise in the price index as all sub-groups except telephone and telefax equipment registered increases in the indices. Postal services increased by 5.3 and telephone and telefax services also moved up by 0.5 percent reflecting the impact of an increase in private delivery rates and Internet charges, respectively.

Meanwhile, the following divisions recorded declines in September 2016 compared to September 2015:

- **Transport:** the division's index fell by **0.8** percent as a result of the 6.7 percent decrease in the price index for operations of personal transport equipment. Transport services rose by 9.3 percent, and the purchase of vehicles recorded no price movement.
- **Health:** there was a **0.6** percent decline in this division's price index largely traced to reduced prices for medical products, appliances, and equipment by 3.7 percent. The price index for both outpatient services and hospital services recorded increases of 0.3 and 0.4 percent, respectively.
- **Household equipment**: the index moved downward by **0.5** percent as all the components of this division recorded reduced prices except glassware, tableware and household utensils. The index for household textiles recorded the largest fall of 14.8 percent; followed by tools and equipment for house and garden that went down by 3.4 percent.



- Clothing and footwear: the division's index dropped by **0.2** percent as the price index for clothing fell by 0.5 percent. However, there was a 1.5 percent rise in the price index for footwear.
- **Miscellaneous goods and services:** this index fell by **0.2** percent as the average cost of insurance decreased by 3.1 percent. There were increases in the price index for the other groups that make up this division. Personal effects not elsewhere classified including items of jewellery moved up by 10.8 percent; financial services went up by 8.7 percent; other services not elsewhere classified up by 4.7 percent; social protection up by 2.7 percent; and personal care by 1.3 percent.

Quarterly changes: September 2016 compared to September 2016

The following divisions were the main contributors to the **2.3**-percent price increase in the third quarter CPI over the second quarter of 2016:

- **Restaurants and hotels:** this price index rose by **7.8** percent above the June 2016 price level. The main contributor to the increase was the 24.9 percent upward movement in the index for accommodation services and the 6.0 percent rise in the index for catering services.
- **Housing and utilities:** this index which accounts for almost 2/5 of the entire CPI basket weight, increased by **5.1** percent. Actual rentals and imputed rentals for housing each recorded upward movements of 8.2 percent and 5.1 percent, respectively. Electricity, gas and other fuels rose by 4.0 percent; and maintenance and repair of dwelling by 3.4 percent. However, water supply and miscellaneous services fell by 1.8 percent.
- **Transport:** the index for this division rose by **1.7** percent as a result of the 1.9 percent increase in the price index for operations of personal transport equipment. Average prices for transport services picked by 1.6 percent. The average purchase price of vehicles recorded a slight downward movement of 0.1 percent.
- **Food and non-alcoholic beverages:** the index had an increase of **1.3** percent for the quarter. The main contributors were mineral water, soft drinks, fruit and vegetable juices up by 5.6 percent; coffee, tea, and cocoa by 5.0 percent; fruits 2.8; sugars, jam, honey, chocolate and confectionery 0.8 percent; and meat and meat products 0.6 percent. There were reduced prices for vegetables leading to an inflation rate of -1.4 percent; bread and cereals, -0.8 percent; fish and seafood, -0.4 percent; milk, cheese, and eggs, -0.3 percent and oils and fats, -0.2 percent.
- **Education**: there was a **1.2** percent rise in the price level due to increases in the average cost of school fees for pre-primary and primary education as the index went up by 2.0



percent and secondary education moved up by 0.5 percent. Tertiary education recorded no movement in its index for the period under review.

- **Clothing and footwear**: the division's quarterly index went up by **0.7** percent as clothing rose by 0.8 percent and footwear moved upward by 0.1 percent.
- Communication: there was a 0.5 percent rise in this division's price index as all subgroups except telephone and telefax equipment registered increases in the indices. Postal services and telephone and telefax services rose by 5.1 and 0.5 percent, respectively.
- **Recreation and culture:** this division experienced a price increase of **0.5** percent which is traced primarily to newspapers, books, and stationery up by 5.1 percent and recreational and cultural services up by 0.1 percent. However, there was a 1.0 percent decline in the index for audio-visual, photographic, and information processing equipment and a 0.1 percent decline for other recreational items and equipment, gardens and pets.
- **Alcohol and tobacco:** the index for this division rose by **0.3** percent as a result of a 0.4 percent increase in alcohol prices. However, the price for tobacco products remained unchanged.
- **Miscellaneous goods and services:** this division which has the second largest weight in the entire CPI basket, had a price increase by **0.2** percent. Financial services not elsewhere classified rose by 8.7 percent; social protection by 2.7 percent; and personal care items by 0.3 percent. A downward price movement was recorded for insurance by a slight 0.1 percent. Personal effects not elsewhere classified and other services not elsewhere classified both recorded no change.

The following divisions recorded downward movements in their indices when compared to the quarter ending June 2016:

- Health: this division's index fell by 0.7 percent and is traced mainly to reduced prices
 for medical products, appliances, and equipment that recorded a 3.3 percent decline.
 The price index for both outpatient services and hospital services registered no
 movement.
- **Household equipment**: the index moved downwards by **0.5** percent as all the components of this division had reduced prices except glassware, tableware and household utensils as that index went up by 1.6 percent. The index for tools and equipment for house and garden recorded the largest decline of 3.4 percent.



Table 1: Quarterly Consumer Price Index and Inflation Rates

JUNE 2008 = 100

Year	Quarter	INDEX	Percentage change in CPI:			
	Ending		3 months ago	1 year ago		
2009	March	98.8	-0.8	-0.4		
	June	98.8	0.1	-1.2		
	September	98.7	-0.2	-3.1		
	December	98.2	-0.5	-1.3		
2010	March	99.1	0.9	0.4		
	June	99.5	0.4	0.7		
	September	98.4	-1.1	-0.3		
	December	98.5	0.1	0.3		
2011	March	99.2	0.7	0.03		
	June	100.5	1.4	1.0		
	September	100.8	0.3	2.4		
	December	100.4	-0.4	1.9		
2012	March	100.9	0.6	1.8		
2012	June	100.9	0.5	0.9		
	September	100.8	-0.6	0.02		
	December	102.5	1.6	2.1		
2013	March	102.3	-0.1	1.4		
	June	104.2	1.8	2.7		
	September	103.7	-0.5	2.8		
	December	104.2	0.5	1.7		
2014	March	104.7	0.5	2.3		
2014	June	104.7	0.2	0.7		
		104.9	0.2	1.5		
	September December	103.2				
	December	104.8	-0.3	0.6		
2015	March	104.3	-0.5	-0.4		
	June	101.2	-3.0	-3.6		
	September	102.1	1.0	-2.9		
	December	102.2	0.1	-2.5		
2016	March	101.4	-0.8	-2.8		
	June	100.3	-1.0	-0.8		
	September	102.7	2.3	0.5		



Table 2 CAYMAN ISLANDS CONSUMER PRICE INDEX

ANNUAL AVERAGES 1995 TO 2015 (June 2008 = 100)

YEAR	INDEX	Percentage change from a year ago
1995	66.7	
1996	68.4	2.5
1997	70.3	2.7
1998	72.4	3.0
1999	77.3	6.9
2000	79.4	2.7
2001	80.3	1.1
2002	82.3	2.5
2003	82.8	0.5
2004	86.5	4.5
2005	92.8	7.3
2006	93.5	0.8
2007	96.2	2.9
2008	100.1	4.1
2009	98.6	-1.5
2010	98.9	0.3
2011	100.2	1.3
2012	101.4	1.2
2013	103.6	2.2
2014	104.9	1.3
2015	102.4	-2.3



TABLE 3: CONSUMER PRICE INDICES AND INFLATION BY DIVISIONS AND GROUPS - THIRD QUARTER 2016

	Major Group			Index		Percetage	
		Weight	Sept-16	June-16	Sept-15	3 months Ago	1 year ago
	All Divisions - All items	1,000.0	102.7	100.3	102.1	2.3	0.5
01	Food & Non Alcoholic Beverage	79.6	126.8	125.2	126.3	1.3	0.3
	Bread & cereals	9.9	125.3	126.3	123.8	-0.8	1.2
	Meat & meat products	10.4	136.3	135.6	138.2	0.6	-1.4
	Fish & seafood	4.2	134.3	134.9	127.2	-0.4	5.6
	Milk, cheese & egg	8.3	115.7	116.1	123.8	-0.3	-6.6
	Oils & fats	2.0	109.3	109.5	109.3	-0.2	0.0
	Fruits	6.7	136.8	133.1	135.1	2.8	1.2
	Vegetables	8.6	132.7	134.6	139.9	-1.4	-5.2
	Sugars, jam, honey, chocolate & confectionery	5.5	127.7	126.7	127.2	0.8	0.4
	Food products n.e.c.	5.6	122.0	121.4	121.0	0.5	0.8
	Coffee, tea & cocoa	1.6	124.4	118.5	119.5	5.0	4.1
02	Mineral water, soft drinks, fruit & vegetable juices Alcohol and Tobacco	16.9 6.5	121.9 133.3	115.4 132.8	115.2 132.6	5.6 0.3	5.8 0.5
02	Alcohol	5.6	115.7	115.2	115.1	0.3	0.5
	Tobacco	0.9	247.2	247.2	246.0	0.0	0.5
03	Clothing and Footwear	34.3	116.4	115.6	116.6	0.7	-0.2
•	Clothing	29.5	114.5	113.6	115.1	0.8	-0.5
	Footwear	4.8	128.3	128.2	126.4	0.1	1.5
04	Housing and Utilities	394.4	82.1	78.2	81.7	5.1	0.5
	Actual rentals for housing	78.7	80.7	74.6	75.8	8.2	6.5
	Imputed rentals for owner-occupied housing	223.4	76.4	72.7	73.8	5.1	3.5
	Maintenance and repair of dwelling	28.5	132.4	128.0	122.8	3.4	7.8
	Water supply and miscellaneous services	16.4	90.2	91.8	103.9	-1.8	-13.2
	Electricity, gas and other fuels	47.3	78.3	75.3	96.0	4.0	-18.4
05	Household Equipment	56.4	117.7	118.3	118.3	-0.5	-0.5
	Furniture and furnishings	5.7	108.5	108.7	108.8	-0.2	-0.3
	Household textiles	1.1	113.2	115.6	132.9	-2.1	-14.8
	Household appliances	2.8 2.8	101.4	101.4	103.6	0.0	-2.2
	Glassware, tableware and household utensils Tools and equipment for house and garden	1.5	129.9 92.3	127.8 95.6	124.2 95.5	1.6 -3.4	4.6 -3.4
	Goods and services for routine household maintenance	42.4	120.3	121.0	120.6	-3. 4 -0.6	-0.2
06	Health	24.2	101.5	102.3	102.1	-0.7	-0.6
•••	Medical products, appliances and equipment	5.0	106.4	110.0	110.5	-3.3	-3.7
	Outpatient services	17.9	99.1	99.1	98.8	0.0	0.3
	Hospital services	1.4	115.0	115.0	114.6	0.0	0.4
07	Transport	96.1	111.2	109.4	112.1	1.7	-0.8
	Purchase of vehicles	6.1	118.5	118.7	118.5	-0.1	0.0
	Operations of personal transport equipment	57.4	103.5	101.5	111.0	1.9	-6.7
	Transport services	32.6	123.3	121.4	112.9	1.6	9.3
80	Communication	69.7	110.2	109.7	109.7	0.5	0.5
	Postal services	0.5	101.6	96.8	96.6	5.1	5.3
	Telephone & telefax equipment	0.3	107.6	107.6	107.6	0.0	0.0
	Telephone & telefax services	68.9	110.3	109.8	109.8	0.5	0.5
09	Recreation and Culture	40.5	102.7	102.2	100.1	0.5	2.6
	Audio-visual, photographic and information processing equipment Other major durables for recreation and culture	4.2 3.4	66.0 93.0	66.6 93.0	71.2 91.6	-1.0 0.0	-7.3 1.5
	Other recreational items and equipment, gardens and pets	10.5	122.0	122.2	115.5	-0.1	5.6
	Recreational & cultural services	17.6	102.8	102.7	98.6	0.1	4.3
	Newspapers, books and stationery	4.8	99.2	94.4	103.5	5.1	-4.1
10	Education	27.9	120.5	119.1	119.1	1.2	1.2
	Pre-primary and primary education	16.1	124.2	121.8	121.8	2.0	2.0
	Secondary education	2.41	127.33	126.69	126.69	0.5	0.5
	Tertiary education	9.4	112.5	112.5	112.5	0.0	0.0
11	Restaurants and Hotels	40.2	125.1	116.0	117.4	7.8	6.6
	Catering Services	33.8	130.8	123.6	123.1	6.0	6.3
	Accomodation Sevices	6.4	94.8	75.9	87.2	24.9	8.7
12		130.2	117.7	117.5	117.9	0.2	-0.2
	Personal care	26.5	119.7	119.3	118.2	0.3	1.3
	Personal effects n.e.c.	7.7	148.1	148.1	133.7	0.0	10.8
	Social protection	8.4	112.5	109.5	109.5	2.7	2.7
	Insurance Financial services n.e.c.	74.8 0.5	114.5 99.8	114.6 91.8	118.1 91.8	-0.1 8.7	-3.1 8.7
	Other services n.e.c.	12.2	118.3	118.3	113.0	0.0	6.7 4.7
	Other 30171003 H.C.U.	14.4	110.3	110.3	113.0	0.0	4.7



				Table 4:	Consumer P			or Groups					
					(-	JUNE 2008 =	100)	1		1	T	1	1
PERIOD / DIVISION	Food & Non- alcoholic beverages	Alcoholic Beverages & Tobacco	Clothing & Footwear	Housing and Utilities	Household Equipment	Health	Transport	Communication	Recreation & Culture	Education	Restaurants & Hotels	Miscellaneous Goods & Services	ALL ITEMS
WEIGHT	79.6	6.5	34.3	394.4	56.4	24.2	96.1	69.7	40.5	27.9	40.2	130.2	1000
2011													
MARCH	110.4	115.0	100.2	89.2	102.5	97.9	105.0	102.1	99.5	105.4	117.5	107.2	99.2
JUNE	112.4	115.7	100.9	90.4	102.2	99.1	110.3	105.4	99.4	105.4	115.5	107.4	100.5
SEPTEMBER	113.6	115.5	101.0	91.2	103.5	98.9	111.5	104.1	99.2	105.4	115.7	105.6	100.8
DECEMBER	114.7	115.7	102.2	90.1	103.3	98.9	110.7	104.4	99.3	105.4	112.8	106.0	100.4
ANNUAL AVERAGE 2011	112.8	115.5	101.1	90.3	102.8	98.7	109.4	104.0	99.3	105.4	115.4	106.5	100.2
2012													
MARCH	116.3	115.6	103.8	90.0	102.9	100.5	111.8	104.4	98.1	105.4	117.8	107.3	100.9
JUNE	116.7	116.2	106.4	90.5	103.1	100.3	114.0	103.6	98.6	105.4	114.5	107.7	100.9
SEPTEMBER	118.3	116.2	110.0	89.7	104.6	101.8	110.4	103.6	96.9	106.4	108.0	108.3	100.8
DECEMBER	119.0	131.6	110.6	91.5	104.3	101.9	114.2	104.0	96.4	106.4	110.1	110.6	102.5
ANNUAL AVERAGE 2012	117.6	119.9	107.7	90.4	103.7	101.2	112.6	103.9	97.5	105.9	112.6	108.5	101.4
2013													
MARCH	120.1	131.8	112.5	89.4	110.2	102.1	113.1	104.0	96.6	106.4	116.9	110.8	102.3
JUNE	121.0	131.6	111.2	90.2	109.8	102.1	114.4	104.9	96.6	110.4	109.7	122.3	102.3
SEPTEMBER	121.9	131.5	114.5	88.4	110.0	102.4	115.3	104.8	96.8	113.0	116.1	119.2	103.7
DECEMBER	122.7	131.6	113.3	88.8	110.4	101.8	117.8	104.7	96.1	113.0	121.9	118.5	104.2
ANNUAL AVERAGE 2013	121.4	131.6	112.9	89.2	110.1	102.1	115.2	104.6	96.5	110.8	116.2	117.7	103.6
2014													
MARCH	123.1	131.7	111.3	87.9	117.6	102.0	117.3	104.7	98.4	113.0	130.5	119.3	104.7
JUNE	123.8	131.4	112.0	88.9	118.0	101.8	118.4	106.4	98.5	113.0	118.9	119.0	104.9
SEPTEMBER	124.4	131.9	112.3	89.6	118.6	101.9	118.3	106.2	98.4	113.0	116.9	118.8	105.2
DECEMBER	125.6	131.9	112.6	88.9	118.5	101.8	117.6	105.1	99.4	116.0	119.2	116.9	104.8
ANNUAL AVERAGE 2014	124.2	131.7	112.0	88.8	118.2	101.9	117.9	105.6	98.7	113.8	121.4	118.5	104.9
2015													
MARCH	126.6	132.0	113.2	86.9	118.6	102.3	117.3	107.3	100.2	116.0	119.8	116.5	104.3
JUNE	125.3	132.4	115.0	80.6	118.3	102.0	109.3	109.6	100.3	118.1	117.3	117.1	101.2
SEPTEMBER	126.3	132.6	116.6	81.7	118.3	102.1	112.1	109.7	100.1	119.1	117.4	117.9	102.1
DECEMBER	126.7	132.8	116.6	81.4	118.3	102.0	110.0	109.7	99.8	119.1	123.8	118.7	102.2
ANNUAL AVERAGE 2015	126.2	132.5	115.4	82.6	118.4	102.1	112.2	109.1	100.1	118.1	119.6	117.6	102.4
% CHANGE ANNUAL AVERAGE	1.6	0.6	3.0	-6.9	0.2	0.3	-4.8	3.3	1.5	3.8	-1.5	-0.8	-2.3
2016													
MARCH	127.0	132.9	115.5	79.3	118.0	102.3	109.4	109.7	99.6	119.1	119.8	121.0	101.4
JUNE	125.2	132.8	115.6	78.2	118.3	102.3	109.4	109.7	102.2	119.1	116.0	117.5	100.3
SEPTEMBER	126.8	133.3	116.4	82.1	117.7	101.5	111.2	110.2	102.7	120.5	125.1	117.7	102.7
													
% CHANGE PREV YEAR % CHANGE PREV QTR	0.3 1.3	0.5 0.3	-0.2 0.7	0.5 5.1	-0.5 -0.5	-0.6 -0.7	-0.8 1.7	0.5 0.5	2.6 0.5	1.2 1.2	6.6 7.8	-0.2 0.2	0.5 2.3



TABLE 5: AVERAGE PRICES OF SELECTED ITEMS

Quarter Ending September 2016

Item	Quantity	Average Prices (CI\$)			
		Comt 4E	luma 46	Comt 46	
Loaf - Harddough	2 lb	3.90	June-16 4.13	4.02	
Long Grain Rice	5 lb	2.46		2.46	
Cornflakes (original)	24 oz	5.22		5.46	
Cormakes (Original)	24 02	5.22	5.59	5.40	
Stew Beef	per lb	5.01	5.43	4.92	
Bacon	12 oz	5.66	5.32	5.32	
Snapper Fillets (frozen)	per lb	10.70	11.28	10.67	
Canned Tuna in water	6 oz	1.79	1.66	1.66	
Carmed Turia III water	0 02	1.79	1.00	1.00	
Eggs (Grade A Large)	1 doz	4.46	2.66	2.79	
Margarine -Shedds Spread	45 oz	5.79	5.79	5.79	
Fresh Milk (McArthur - Regular Vitamin D)	1 gal	6.51	6.51	6.42	
Evaporated milk (Nestle Carnation)	14 oz	1.52	1.62	1.46	
Vegetable Oil	24 oz	4.52	4.46	4.46	
Plantain	per lb	1.18	1.07	1.22	
Potatoes - Irish	per lb	0.99	0.97	1.01	
Lettuce - Iceburg	each	2.78	2.12	2.18	
Sweet Potatoes	per lb	3.44		3.47	
Tomatoes - Slicing	per lb	2.88	2.72	2.59	
Bananas - Ripe	per lb	0.91	0.92	0.94	
Apple - Golden Delicious	per lb	2.21	2.63	2.67	
Grapes - Red Seedless	per lb	3.95	4.01	3.60	
Tea (Lipton Decaffeinated)	48 bags	4.56	4.64	4.78	
Coffee - Instant -Classic Roast - Bottle	8 oz	6.82	6.82	6.82	
Soda	12 oz	0.78	0.79	0.79	
Coda	12 02	0.70	0.70	0.70	
Sugar - Light Brown (Bag)	2 lb	3.30	2.94	3.12	
Corned Beef - regular	340 g	4.15	4.01	4.01	
lodized Salt	26 oz	0.99	0.99	0.99	
Patral Paradas Full C		4 74	0.00	4.46	
Petrol - Regular Full Service	per gal	4.71		4.12	
Petrol - Premium Full Service	per gal	4.77		4.40	
Diesel - Full Service	per gal	4.60	3.83	3.95	



NOTES ON THE INDEX COMPILATION

1. Data collection

This report uses the 2008 CPI basket based on the results of the 2007 Survey of Living Conditions/Household Budget Survey (HBS) as updated in June 2008. The goods and services in the basket are classified into twelve (12) divisions using the United Nations' Classification of Individual Consumption According to Purpose (COICOP). In all, there are 1,393 items (7th-digit COICOP level) included in the basket collected from 147 providers/outlets in Grand Cayman, classified as follows:

Number of Items in the 2008 CPI Basket

Division

DIVISION		
1	Food and non-alcoholic beverages	47
2	Alcoholic beverages and tobacco	5
3	Clothing and footwear	13
4	Housing, utilities and fuels	6
5	Furnishings, household equipment and routine household maintenance.	19
6	Healt	4
7	Transport	7
8	Communication	4
9	Recreation and Culture	6
1	Education	1
1	Restaurants and hotels	13
1	Miscellaneous goods and services	9

Total 1.393

ESO also adopted new collection periods and price averaging methodologies in accordance with updated and as advised by the Caribbean Technical international standards Assistance Centre (CARTAC). Beginning in the fourth quarter of 2009, price data for all items are collected every second month of the quarter (whereas they were previously collected every third month). Prices of selected items that are vulnerable to monthly changes such as vegetables and fruits, fish and meat, and gas are now also collected on a monthly basis. Prices across outlets are averaged using the geometric mean formula to reduce the impact of extreme or outlier prices (please see below).

2. CPI formula

The CPI is computed using Lowe's formula. The Lowe indices is one of the widest and popular class of price indices which is obtained by defining the index as the percentage change, between the periods compared, in the total cost of purchasing a given set of quantities, generally described as a "basket". The Lowe index, PLo, is defined as follows²:

¹ ILO (2004, p. 2). Consumer price index manual

² Ibid, p.3



$$P_{Lo} = \sum_{i=1}^{n} p_i^t q_i / \sum p_i^0 q_i$$

Where $n = number of products in the basket with prices <math>p_i$ and quantities q_i

0 = base period

t = later period being compared

Geometric mean

The price p = [p1, p2, ..., pn] for each item from different outlets is the average of prices of the outlets using geometric mean or the formula:

$$p = \left(\prod_{i=1}^{n} p_{i}\right)^{1/n} = \sqrt[n]{p_{1}, p_{2}, ..., p_{n}}$$

Inflation: this refers to the percentage change in the Consumer Price Index from one period to another. Typically, this period would be a year or a quarter.

Annual Inflation Rate: the percentage change of the CPI in the quarter under review over the CPI of the same quarter a year ago. This is also known as **year-on-year inflation rate.**

Quarterly Inflation Rate: the percentage change of the CPI in the quarter under review over the immediate previous quarter. This is also known as **quarter-on-quarter inflation rate**.