# Consumer Price Index Commonwealth of the Northern Marianas 

$4^{\text {th }}$ Quarter 2010



## August 2011

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## Secretary of Commerce Message

It gives me great pleasure to present to the people of the Commonwealth of the Northern Marianas (CNMI) the $4^{\text {th }}$ Quarter 2010 Consumer Price Index (CPI) publication.

The statistical information reflected in this publication contains a wealth of information that measures quarterly changes in prices of a "basket" of goods and services, which are representative of purchases by private househoids in the CNMil.

To ensure representation of the basket is reflective of current purchasing pattern of households, the CPI was rebased after the 2005 Household Income and Expenditure Survey (HIES) and the base year adjusted to $4^{\text {th }}$ Quarter 2008. These changes help maintain the integrity of the CPI index, providing the people of CNMI with a more reliable measure of the changes in the cost of living.

For the first time, preliminary results will be presented for the islands of Rota and Tinian, where price collection commenced in the $1^{\text {st }}$ quarter of 2010.

I acknowledge with great appreciation the valuable contributions of the many participating establishments for enabling us to continue the collection of prices on a quarterly basis for the selected items within the CNMI CPI. With your cooperation and assistance, we will continue to publish the CNMI CPI to account for the changes in the prices of commodities consumed by the people residing in the CNMI.

I also would like to thank and acknowledge Secretariat of the Pacific Community's (SPC) Dr. Gerald Haberkorn and his staff Mr. Chris Ryan for their assistance and contributions to our CPI publication report.

Lastly, I would like to commend the staff at the Central Statistics Division in Saipan, and the Resident Commerce staff in Rota and Tinian for their hard work and dedication in publishing this product.

Thank you

Sixto K. Igisomar
Department of Commerce

# Explanatory Notes 

CPI Construction and Methodology

## Survey Overview:

Over a 3-month period from October to December 2005, the Central Statistics Division (CSD) of the Commonwealth of the Northern Mariana Islands' Department of Commerce conducted a Household Income and Expenditure Survey (HIES). This survey used two types of survey methods to gather data. For the more expensive and less frequently purchased items, such as major appliances, electronic goods, new and used vehicles, etc., a pre-printed, survey questionnaire was completed by an interviewer. For those items which are more frequently purchased, such as food, tobacco, drinks, etc., the household respondent was given a diary to record all purchases during a one-week period.

## Household Sample:

A random sample of 1,200 households was selected for the HIES in Saipan, which is the capital and the most populated island in the CNMI and about 125 households were selected from each of the islands of Rota and Tinian. From that initial sample, 1,141 households completed the survey questionnaire. From those households, a sub-sample of 700 households was given a diary to record household purchases.

## Selection of the Item Sample:

In December of 2007, Justin H. Andrew of CSD and Dr. Michael J. Levin, from Harvard University processed the data. Assisting them were Mr. Wil Maui of DataTalks. In 2008, Mr. Brian Hannon, an Economic Statistics International Consultant was hired to assist the CSD in rebasing the CPI. The survey items and expenditures were arrayed using the U.S. Bureau of Labor Statistics CPI classification system as a frame of reference. Then, using a statistical technique called "Probability Proportional to Size"; the CSD selected a new item sample. Using the PPS technique to select the item sample ensured that those items with the highest monthly household expenditures were selected in the sample. The sample included a total of 161 items for Saipan, 147 for Tinian, and 129 for Rota.

## Expanding the Major Groups:

Using the BLS Classification System as a frame of reference allowed the CSD to expand the number of groups included in the CNMI's CPI. Instead of having five major groups, the revised CPI now has 9 major groups. Having more groups allows the users to understand better which groups are responsible for the increases/decreases of the CPI. In the previous, CPI for example, alcoholic beverages were a part of the Health and Recreation Group. Now, it is one of the 4 new groups. The others are: Medical Care, Education and Communication and Other Goods and Services.

## Expansion of the Outlet Sample:

The previous CPI collected price data from 18 different outlets. In the revised CPI, the number of retail outlets has been expanded dramatically and the outlet sample now consists of roughly 170 different retail outlets in Saipan, 30 in Tinian and 60 in Rota, which are geographically dispersed throughout Saipan, Rota and Tinian. This substantially larger outlet sample will ensure that the retail price data are collected from a wide variety of outlets dispersed throughout the three locations.

## Data Collection and Price Review Manual:

The CSD has made another enhancement to the CPI by increasing the data collection training and by formalizing this vital aspect of price collection by developing a Data Collection Manual. This new manual covers virtually all aspects of price collection ranging from initiating the retail outlet to the rules for selecting a retail item and re-pricing. This new manual will improve data collection quality because it will provide guidance to the data collectors in handling almost any type of re-pricing situation.

## Linking the Old and New CPIs:

In the $4^{\text {th }}$ Quarter of 2008, data collectors collected price data for both the old and revised CPIs and the two indexes were "spliced" together at that point. In order for two indexes to be linked together, there must be at least one period where prices are collected for both the old and the new indexes. This overlapping period was the $4^{\text {th }}$ Quarter 2008. Beginning in the $1^{\text {st }}$ Quarter 2009, the CSD collected price data for only the items in the revised CPI. Therefore, up to the $4^{\text {th }}$ Quarter 2008, the index change is based on the old basket of goods, whereas from $1^{\text {st }}$ Quarter 2009 onwards, the index change is based on the new basket.

## Changing the Base Period:

Another change in the CPI was rebasing it from the $1^{\text {st }}$ Quarter $2003=100$ to the $4^{\text {th }}$ Quarter $2008=$ 100. This is a mathematical change in the CPI but the more recent base period will make the CPI easier for users to understand. There is no difference in the percent changes from the old CPI from one period to another.

## Calculating the Consumer Price Index

As with most CPIs around the world, the CSD will continue to use the Laspeyres method to calculate the CPI. This is the most widely-used and internationally-accepted method of calculating price change for a CPI. The Laspeyres formula is shown below:

Laspeyres Formula:

$$
I_{t}=\frac{\sum_{i=1}^{n} P_{t} Q_{0}}{\sum_{i=1}^{n} P_{0} Q_{0}} * 100
$$

$I_{t}=$ The index at time point t
$P_{t}=$ The price at time point t
$P_{0}=$ The price at the base period
$Q_{0}=$ The quantity at the base period
$\mathrm{n}=$ The number of commodities being priced
I = Commodity i (where igoes from 1 to $n$ )

This method of index computation uses the quantities of commodities purchased in the base period as the basis for computing the value of the "market basket." First, there are number of items in the market basket with each having a base quantity. Each of these items has a base price, po and current price, pi. Multiplying po with qo gives the total expenditure for a particular commodity for the base period. Current expenditure for an item is obtained by multiplying $p_{i}$ with $q 0$. The sum of
current expenditures for all items in the market basket is expressed as $\sum$ piqo, while the sum $\sum$ poqo is the total market basket expenditures in the base period. Notice that in both summations the term qo remains constant, which means by using the same quantities only price changes are reflected in two pricing periods.

For those unfamiliar with statistical notation, trying to read and understand the above explanation can be an intimidating experience. In layman's terms, the above simply means that all of the items in the CPI are priced every quarter and the prices for each item in the current quarter are compared to the same prices in the base period. The base period is the $4^{\text {th }}$ quarter 2008 when the CPI was set equal to 100. That is when the CPIs for each of the 9 major groups and the All Items $=100$.

The CSD uses a slight variation to this formula. Each quarter, the average of the prices that are collected for each item are compared to the average of the same prices in the previous quarter - not the base period. This is only done for items which are priced in both quarters. The average of the prices of an item in the current quarter is divided by the average of the prices in the previous quarter to calculate a price relative. This price relative is multiplied by the item's weight in the previous quarter to update the item's weight in the current quarter. This product is then divided by the item's weight in the base period to calculate an item's CPI. By summing the updated weights for all of the items in a group and dividing that sum by the same weights in the base period will calculate the group's current CPI.

## Analysis - Saipan

## Section 1 - Quarterly Inflation

Table 1 below shows the quarterly inflation rate for each quarter since the $4^{\text {th }}$ quarter 2008, by group. As can be seen from this table the index rose by 4.2 percent for the $4^{\text {th }}$ quarter, the highest rise for one quarter since the $2^{\text {nd }}$ quarter 2008 (see Appendix 2 for details). The trend for "All Items" can also be seen in Chart 1, illustrating a sharp rise for this quarter.

As can be seen from Chart 2, the group which increased the most was "Medical Care", with 19.8 percent growth, when compared to last quarter. This was followed by "Transportation" with a 6.5 percent growth in the last quarter. All other group increased slightly, with the exception of "Recreation" and "Education \& Communication" which had a slight decrease.

For "Medical Care", the main reason for the increase was a rise in Health Insurance of 23 percent, while for "Transportation", the major factor contributing to the increase was a 15 percent rise in Gasoline.

Table 1: Quarterly inflation, by group, Saipan: Qtr 42008 - Qtr 42010

| Group | 4th Qtr 2008 | $\begin{gathered} \text { 1st Qtr } \\ 2009 \end{gathered}$ | $\begin{gathered} \text { 2nd Qtr } \\ 2009 \end{gathered}$ | 3rd Qtr 2009 | 4th Qtr 2009 | 1st Qtr 2010 | 2nd Qtr 2010 | 3rd Qtr 2010 | 4th Qtr 2010 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All Items | -3.8 | -0.1 | 1.4 | 0.1 | 3.4 | 1.1 | 0.6 | 0.4 | 4.2 |
| Food | 2.6 | 1.0 | 1.2 | 1.8 | -0.1 | -1.4 | 0.1 | -0.2 | 1.7 |
| Alcoholic Beverages | 0.8 | 0.0 | 0.0 | 3.5 | -3.4 | 3.5 | 0.0 | 0.0 | 1.5 |
| Housing \& Utilities | -14.0 | -1.1 | 1.4 | -3.1 | 9.2 | -0.9 | 1.1 | 0.0 | 0.9 |
| Apparel | 0.5 | -0.5 | -0.7 | 2.9 | 0.9 | -1.8 | 0.5 | -0.4 | 0.4 |
| Transportation | 4.3 | 0.5 | 3.5 | 1.3 | 2.9 | 7.1 | 0.7 | 2.2 | 6.5 |
| Medical Care | 3.0 | 1.6 | 0.0 | -2.5 | 0.1 | 1.9 | 0.0 | -0.9 | 19.8 |
| Recreation | 0.0 | -0.1 | 2.2 | 0.6 | 0.2 | -3.2 | 0.5 | -0.2 | -0.2 |
| Education \& Communication | 0.5 | -3.6 | -0.3 | 9.2 | 0.3 | -0.7 | 0.0 | 0.0 | -0.5 |
| Other Goods \& Services | 0.0 | 1.7 | 0.0 | 0.7 | 0.5 | -0.9 | 1.8 | 0.0 | 1.8 |

Chart 1: Quarterly inflation, Saipan: Qtr 42008 - Qtr 42010


Chart 2: Quarterly inflation, by Group, Saipan: Qtr 42010


## Section 2 - Annual Inflation

Table 2 below shows the annual inflation rate for each year since the $4^{\text {th }}$ quarter 2004, by group. As can be seen from this table the index rose by 6.4 percent for the last year, the highest annual rise for the same corresponding 12 months since 2006, when a 13.4 percent increase was observed. The trend for "All Items" can also be seen in Chart 3, which shows a gradual rise in the annual increase since 2007.

As can be seen from Chart 4, the group which increased the most was "Medical Care", with 19.8 percent growth, when compared to the same quarter last year. This was closely followed by "Transportation" with a 17.4 percent growth in the last 12 months. Of the remaining groups "Alcoholic Beverages" had the next largest annual increase with a rise of 5.1 percent, while "Recreation" had the largest decline with a 3.1 percent decrease since last year.

Table 2: Annual inflation, by group, Saipan: Qtr 42004 - Qtr 42010

|  | 4th Qtr <br> 2004 | 4th Qtr <br> 2005 | 4th Qtr <br> 2006 | 4th Qtr <br> $\mathbf{2 0 0 7}$ | 4th Qtr <br> 2008 | 4th Qtr <br> $\mathbf{2 0 0 9}$ | 4th Qtr <br> $\mathbf{2 0 1 0}$ |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
|  |  |  |  |  |  |  |  |
| All Items | 1.6 | 1.2 | 13.4 | 3.2 | 5.1 | 5.0 | 6.4 |
|  |  |  |  |  |  |  |  |
| Food | 6.8 | 0.2 | 4.4 | 4.6 | 11.9 | 4.0 | 0.2 |
| Alcoholic Beverages | 0.0 | 1.8 | 0.6 | 4.3 | 7.4 | 0.0 | 5.1 |
| Housing \& Utilities | 0.1 | 2.8 | 43.0 | 6.4 | 3.1 | 6.1 | 1.1 |
| Apparel | -7.9 | 0.0 | 15.4 | 2.1 | -1.0 | 2.6 | -1.3 |
| Transportation | -0.3 | 0.8 | 0.3 | 0.0 | 4.2 | 8.5 | 17.4 |
| Medical Care | 0.0 | -0.2 | 0.0 | 0.0 | 3.0 | 0.1 | 19.8 |
| Recreation | 2.4 | 3.1 | 4.2 | 1.2 | -2.0 | 3.0 | -3.1 |
| Education \& Communication | 1.3 | -0.1 | 1.2 | 0.3 | 1.4 | 5.3 | -1.3 |
| Other Goods \& Services | 8.3 | 0.0 | 0.0 | 0.0 | 7.7 | 2.8 | 2.8 |

Chart 3: Annual inflation, Saipan: Qtr 42004 - Qtr 42010


Chart 4: Annual inflation, by Group, Saipan: Qtr 42010


## Section 3 - Further Analysis of the Index

Table 3 and Chart 5 below show the change in the index since the re-base in the $4^{\text {th }}$ Quarter 2008. The analysis shows that "Transportation" has had the most significant increase in this period with the index rising by 27.4 percent during this period, while "Medical Care" was not too far behind with an increase of 20.0 percent during this time. Only "Recreation" had a small decrease during this period, dropping by 0.3 percent.

Table 3: Consumer Price Index, by group, Saipan: Qtr 42008 - Qtr 42010

| Group | 4th Qtr 2008 | 1st Qtr 2009 | $\begin{gathered} \text { 2nd Qtr } \\ 2009 \\ \hline \end{gathered}$ | 3rd Qtr 2009 | 4th Qtr 2009 | $\begin{gathered} \text { 1st Qtr } \\ 2010 \end{gathered}$ | $\begin{gathered} \text { 2nd Qtr } \\ 2010 \\ \hline \end{gathered}$ | 3rd Qtr 2010 | 4th Qtr 2010 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All Items | 100.0 | 99.9 | 101.4 | 101.5 | 105.0 | 106.1 | 106.8 | 107.2 | 111.7 |
| Food | 100.0 | 101.0 | 102.3 | 104.1 | 104.0 | 102.6 | 102.7 | 102.5 | 104.2 |
| Alcoholic Beverages | 100.0 | 100.0 | 100.0 | 103.5 | 100.0 | 103.5 | 103.5 | 103.5 | 105.1 |
| Housing \& Utilities | 100.0 | 98.9 | 100.3 | 97.2 | 106.1 | 105.1 | 106.2 | 106.2 | 107.2 |
| Apparel | 100.0 | 99.5 | 98.8 | 101.7 | 102.6 | 100.8 | 101.3 | 100.9 | 101.3 |
| Transportation | 100.0 | 100.5 | 104.0 | 105.4 | 108.5 | 116.3 | 117.1 | 119.6 | 127.4 |
| Medical Care | 100.0 | 101.6 | 101.6 | 99.1 | 99.1 | 101.0 | 101.0 | 100.1 | 120.0 |
| Recreation | 100.0 | 99.9 | 102.1 | 102.7 | 103.0 | 99.6 | 100.1 | 99.9 | 99.7 |
| Education \& Communication | 100.0 | 96.4 | 96.1 | 104.9 | 105.3 | 104.5 | 104.5 | 104.5 | 103.9 |
| Other Goods \& Services | 100.0 | 101.7 | 101.6 | 102.3 | 102.8 | 101.9 | 103.8 | 103.8 | 105.7 |

Chart 5: Consumer Price Index, by Group, Saipan: Qtr 42008 - Qtr 42010


## Analysis - Tinian

## Section 1 - Quarterly Inflation

Table 4 below shows the quarterly inflation rate for each quarter since the $2^{\text {nd }}$ quarter 2010, by group. As can be seen from this table the index rose by 1.9 percent for the $4^{\text {th }}$ quarter. The trend for "All Items" can also be seen in Chart 6 on the following page, illustrating a sharper rise when compared to the previous quarter.

Chart 7 shows that "Medical Care" had the largest increase during the last quarter with a rise of 19.4 percent. Most other groups decreased during the quarter, with the greatest decline occurring in the "Alcoholic Beverages" group with a drop of 3.1 percent.

The sharp rise for "Medical Care" was due to a 23 percent increase in the cost of Health Insurance.

Table 4: Quarterly inflation, by group, Tinian: Qtr 22010 - Qtr 42010

|  | $\begin{array}{c}\text { 2nd Qtr } \\ \text { 2010 }\end{array}$ | $\begin{array}{c}\text { 3rd Qtr } \\ \text { 2010 }\end{array}$ |  |
| :--- | ---: | ---: | ---: | \(\left.\begin{array}{c}4th Qtr <br>


2010\end{array}\right]\)|  |  |  |  |
| :--- | ---: | ---: | ---: |
| All Items |  |  |  |
|  | 2.3 | 0.5 | 1.9 |
| Food |  |  |  |
| Alcoholic Beverages | -0.9 | -0.1 | -1.9 |
| Housing \& Utilities | 2.1 | 0.0 | -3.1 |
| Apparel | 7.1 | 1.6 | 1.1 |
| Transportation | -0.1 | -0.6 | -0.4 |
| Medical Care | 1.1 | 0.7 | -0.4 |
| Recreation | 0.3 | 0.0 | 19.4 |
| Education \& Communication | 0.2 | 0.2 | 0.1 |
| Other Goods \& Services | 0.5 | 0.5 | -1.2 |

Chart 6: Quarterly inflation, Tinian: Qtr 22010 - Qtr 42010


Chart 7: Quarterly inflation, by Group, Tinian: Qtr 42010


## Section 2 - Annual Inflation

Since the series for Tinian only commenced in the first quarter of 2010, there will be no annual inflation figures until the data from the first quarter of 2011 is analysed.

## Analysis - Rota

## Section 1 - Quarterly Inflation

Table 5 below shows the quarterly inflation rate for each quarter since the $2^{\text {nd }}$ quarter 2010, by group. As can be seen from this table the index rose by 0.8 percent for the $4^{\text {th }}$ quarter. The trend for "All Items" can also be seen in Chart 8 on the following page, showing a smaller increase when compared to the previous quarter.

Chart 9 shows that "Medical Care" had the largest increase during the last quarter with a rise of 17.3 percent. The other groups for Rota had minor changes over the last quarter with only small increase and decreases recorded.

The sharp rise for "Medical Care" was due to a 23 percent increase in the cost of Health Insurance.

Table 5: Quarterly inflation, by group, Rota: Qtr 22010 - Qtr 42010

|  | $\begin{array}{c}\text { 2nd Qtr } \\ \text { 2010 }\end{array}$ | $\begin{array}{c}\text { 3rd Qtr } \\ \mathbf{2 0 1 0}\end{array}$ | 4th Qtr |
| :--- | ---: | ---: | ---: |
| 2010 |  |  |  |$]$|  |  |  |  |
| :--- | ---: | ---: | ---: |
| Group |  |  |  |
| Food Items | -0.2 | 1.6 | 0.8 |
| Alcoholic Beverages |  |  |  |
| Housing \& Utilities | 0.3 | -0.4 | 1.3 |
| Apparel | 0.0 | 1.6 | 0.0 |
| Transportation | 0.1 | 3.3 | -2.0 |
| Medical Care | -1.9 | -1.7 | 0.1 |
| Recreation | 1.6 | 0.9 | 0.9 |
| Education \& Communication | 0.0 | 0.0 | 17.3 |
| Other Goods \& Services | -17.0 | -0.3 | -0.1 |

Chart 8: Quarterly inflation, Rota: Qtr 22010 - Qtr 42010


Chart 9: Quarterly inflation, by Group, Rota: Qtr 42010


## Section 2 - Annual Inflation

Since the series for Rota only commenced in the first quarter of 2010, there will be no annual inflation figures until the data from the first quarter of 2011 is analysed.

## Analysis - Comparison across Islands (selected items)

The following analysis does a comparison of prices for selected items across the three main islands of CNMI for fourth quarter of 2010. The items were chosen based on their significance to household expenditure, as well as the feasibility to compare the items suitably across the three islands.

As can be seen from the analysis, there is not a great deal of difference noticed between Saipan and Tinian, although Saipan does tend to be slightly lower on most occasions for the items selected

On the other hand, it is noticeable that Rota is more expensive for a majority of items analysed, with the exception of beer.









## Appendix 1 - Saipan Index

## (Q1-2003 to Q4-2010)

| Year.Qtr | All Items | Food | Alcoholic <br> Beverages | Housing \& Utilities | Apparel | Transportation | Medical Care | Recreation | Education \& Communication | Other Goods \& Services |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Weights | 100.0 | 17.1 | 1.4 | 30.4 | 6.1 | 22.2 | 10.7 | 3.4 | 5.6 | 3.1 |
| 2003.01 | 79.4 | 76.0 | 87.3 | 63.3 | 92.6 | 94.7 | 86.8 | 95.2 | 96.4 | 85.7 |
| 2003.02 | 79.3 | 76.3 | 87.5 | 63.3 | 92.8 | 94.4 | 86.8 | 94.6 | 96.2 | 85.7 |
| 2003.03 | 79.2 | 76.5 | 87.3 | 62.8 | 93.5 | 94.4 | 86.8 | 94.3 | 96.6 | 85.7 |
| 2003.04 | 79.1 | 76.4 | 87.2 | 62.0 | 93.1 | 95.2 | 86.8 | 91.7 | 96.0 | 85.7 |
| 2004.01 | 79.6 | 78.4 | 87.2 | 62.3 | 93.4 | 95.2 | 86.8 | 91.0 | 96.0 | 85.7 |
| 2004.02 | 80.1 | 79.2 | 87.1 | 61.9 | 92.4 | 95.6 | 86.8 | 96.7 | 96.0 | 92.8 |
| 2004.03 | 79.8 | 80.0 | 87.4 | 61.7 | 88.4 | 94.7 | 86.8 | 94.2 | 95.2 | 92.8 |
| 2004.04 | 80.4 | 81.7 | 87.2 | 62.1 | 85.8 | 94.9 | 86.8 | 93.9 | 97.3 | 92.8 |
| 2005.01 | 80.4 | 81.3 | 87.3 | 62.2 | 90.8 | 95.3 | 86.8 | 94.1 | 94.5 | 92.8 |
| 2005.02 | 80.7 | 81.9 | 88.4 | 62.2 | 89.5 | 95.4 | 86.8 | 96.6 | 94.9 | 92.9 |
| 2005.03 | 80.8 | 82.2 | 88.8 | 62.3 | 86.2 | 95.7 | 86.9 | 96.0 | 96.2 | 92.9 |
| 2005.04 | 81.3 | 81.8 | 88.8 | 63.8 | 85.7 | 95.7 | 86.7 | 96.8 | 97.2 | 92.9 |
| 2006.01 | 82.4 | 82.8 | 89.2 | 64.8 | 97.2 | 96.0 | 92.3 | 99.3 | 97.8 | 92.9 |
| 2006.02 | 82.6 | 82.9 | 89.2 | 65.5 | 97.7 | 96.0 | 92.3 | 99.9 | 97.8 | 92.9 |
| 2006.03 | 91.6 | 83.8 | 89.3 | 90.7 | 98.7 | 96.0 | 92.3 | 102.0 | 97.9 | 92.9 |
| 2006.04 | 92.2 | 85.5 | 89.3 | 91.2 | 98.9 | 96.0 | 92.3 | 100.8 | 98.3 | 92.9 |
| 2007.01 | 92.7 | 86.9 | 92.7 | 91.5 | 100.5 | 96.0 | 92.3 | 101.2 | 98.7 | 92.9 |
| 2007.02 | 94.7 | 88.1 | 92.7 | 96.7 | 100.8 | 96.0 | 93.3 | 101.3 | 98.6 | 92.9 |
| 2007.03 | 94.8 | 88.5 | 92.7 | 96.7 | 101.0 | 96.0 | 93.3 | 101.8 | 98.6 | 92.9 |
| 2007.04 | 95.1 | 89.4 | 93.1 | 97.0 | 101.0 | 96.0 | 93.3 | 102.0 | 98.6 | 92.9 |
| 2008.01 | 93.8 | 93.1 | 95.1 | 90.6 | 101.2 | 96.0 | 100.0 | 103.6 | 98.5 | 92.9 |
| 2008.02 | 105.0 | 93.5 | 95.8 | 120.2 | 100.1 | 99.2 | 100.0 | 100.5 | 98.5 | 92.9 |
| 2008.03 | 103.9 | 97.5 | 99.2 | 116.3 | 99.5 | 95.9 | 97.1 | 100.0 | 99.5 | 100.0 |
| 2008.04 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2009.01 | 99.9 | 101.0 | 100.0 | 98.9 | 99.5 | 100.5 | 101.6 | 99.9 | 96.4 | 101.7 |
| 2009.02 | 101.4 | 102.3 | 100.0 | 100.3 | 98.8 | 104.0 | 101.6 | 102.1 | 96.1 | 101.6 |
| 2009.03 | 101.5 | 104.1 | 103.5 | 97.2 | 101.7 | 105.4 | 99.1 | 102.7 | 104.9 | 102.3 |
| 2009.04 | 105.0 | 104.0 | 100.0 | 106.1 | 102.6 | 108.5 | 99.1 | 103.0 | 105.3 | 102.8 |
| 2010.01 | 106.1 | 102.6 | 103.5 | 105.1 | 100.8 | 116.3 | 101.0 | 99.6 | 104.5 | 101.9 |
| 2010.02 | 106.8 | 102.7 | 103.5 | 106.2 | 101.3 | 117.1 | 101.0 | 100.1 | 104.5 | 103.8 |
| 2010.03 | 107.2 | 102.5 | 103.5 | 106.2 | 100.9 | 119.6 | 100.1 | 99.9 | 104.5 | 103.8 |
| 2010.04 | 111.7 | 104.2 | 105.1 | 107.2 | 101.3 | 127.4 | 120.0 | 99.7 | 103.9 | 105.7 |

## Appendix 2 - Saipan Quarterly Increase <br> (Q2-2003 to Q4-2010)

| Year.Qtr | All Items | Food | Alcoholic Beverages | Housing \& Utilities | Apparel | Transportation | Medical Care | Recreation | Education \& Communication | Other Goods \& Services |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Weights | 100.0 | 17.1 | 1.4 | 30.4 | 6.1 | 22.2 | 10.7 | 3.4 | 5.6 | 3.1 |
| 2003.01 |  |  |  |  |  |  |  |  |  |  |
| 2003.02 | -0.1 | 0.3 | 0.2 | 0.0 | 0.2 | -0.3 | 0.0 | -0.7 | -0.2 | 0.0 |
| 2003.03 | -0.1 | 0.4 | -0.2 | -0.8 | 0.8 | 0.0 | 0.0 | -0.3 | 0.4 | 0.0 |
| 2003.04 | -0.2 | -0.1 | -0.1 | -1.3 | -0.4 | 0.8 | 0.0 | -2.8 | -0.6 | 0.0 |
| 2004.01 | 0.6 | 2.6 | 0.0 | 0.4 | 0.4 | 0.0 | 0.0 | -0.7 | -0.1 | 0.0 |
| 2004.02 | 0.7 | 1.0 | -0.2 | -0.6 | -1.1 | 0.4 | 0.0 | 6.2 | 0.1 | 8.3 |
| 2004.03 | -0.4 | 1.1 | 0.4 | -0.3 | -4.3 | -0.9 | 0.0 | -2.6 | -0.9 | 0.0 |
| 2004.04 | 0.7 | 2.1 | -0.2 | 0.6 | -3.0 | 0.2 | 0.0 | -0.3 | 2.2 | 0.0 |
| 2005.01 | 0.1 | -0.5 | 0.1 | 0.2 | 5.8 | 0.4 | 0.0 | 0.2 | -2.9 | 0.0 |
| 2005.02 | 0.3 | 0.7 | 1.3 | 0.1 | -1.4 | 0.1 | 0.0 | 2.7 | 0.4 | 0.0 |
| 2005.03 | 0.2 | 0.3 | 0.4 | 0.1 | -3.6 | 0.3 | 0.1 | -0.7 | 1.4 | 0.0 |
| 2005.04 | 0.6 | -0.4 | 0.1 | 2.3 | -0.6 | 0.0 | -0.2 | 0.8 | 1.1 | 0.0 |
| 2006.01 | 1.3 | 1.1 | 0.5 | 1.6 | 13.4 | 0.3 | 6.5 | 2.6 | 0.6 | 0.0 |
| 2006.02 | 0.3 | 0.1 | 0.0 | 1.0 | 0.5 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 |
| 2006.03 | 10.9 | 1.1 | 0.0 | 38.5 | 1.0 | 0.0 | 0.0 | 2.1 | 0.1 | 0.0 |
| 2006.04 | 0.6 | 2.0 | 0.1 | 0.6 | 0.3 | 0.0 | 0.0 | -1.1 | 0.5 | 0.0 |
| 2007.01 | 0.5 | 1.7 | 3.8 | 0.3 | 1.6 | 0.0 | 0.0 | 0.3 | 0.4 | 0.0 |
| 2007.02 | 2.2 | 1.3 | 0.0 | 5.6 | 0.3 | 0.0 | 1.1 | 0.1 | -0.2 | 0.0 |
| 2007.03 | 0.1 | 0.4 | 0.0 | 0.1 | 0.2 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 |
| 2007.04 | 0.3 | 1.0 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| 2008.01 | -1.4 | 4.2 | 2.1 | -6.7 | 0.1 | 0.0 | 7.1 | 1.5 | -0.1 | 0.0 |
| 2008.02 | 11.9 | 0.3 | 0.8 | 32.7 | -1.1 | 3.4 | 0.0 | -2.9 | 0.0 | 0.0 |
| 2008.03 | -1.0 | 4.3 | 3.5 | -3.2 | -0.6 | -3.3 | -2.9 | -0.5 | 1.0 | 7.7 |
| 2008.04 | -3.8 | 2.6 | 0.8 | -14.0 | 0.5 | 4.3 | 3.0 | 0.0 | 0.5 | 0.0 |
| 2009.01 | -0.1 | 1.0 | 0.0 | -1.1 | -0.5 | 0.5 | 1.6 | -0.1 | -3.6 | 1.7 |
| 2009.02 | 1.4 | 1.2 | 0.0 | 1.4 | -0.7 | 3.5 | 0.0 | 2.2 | -0.3 | 0.0 |
| 2009.03 | 0.1 | 1.8 | 3.5 | -3.1 | 2.9 | 1.3 | -2.5 | 0.6 | 9.2 | 0.7 |
| 2009.04 | 3.4 | -0.1 | -3.4 | 9.2 | 0.9 | 2.9 | 0.1 | 0.2 | 0.3 | 0.5 |
| 2010.01 | 1.1 | -1.4 | 3.5 | -0.9 | -1.8 | 7.1 | 1.9 | -3.2 | -0.7 | -0.9 |
| 2010.02 | 0.6 | 0.1 | 0.0 | 1.1 | 0.5 | 0.7 | 0.0 | 0.5 | 0.0 | 1.8 |
| 2010.03 | 0.4 | -0.2 | 0.0 | 0.0 | -0.4 | 2.2 | -0.9 | -0.2 | 0.0 | 0.0 |
| 2010.04 | 4.2 | 1.7 | 1.5 | 0.9 | 0.4 | 6.5 | 19.8 | -0.2 | -0.5 | 1.8 |

## Appendix 3 - CPI Weights for each Island

| ALL GROUPS | Saipan | Tinian | Rota |
| :---: | :---: | :---: | :---: |
| Food | 17.1083 | 21.0482 | 12.9058 |
| Cereal Products | 2.7052 | 4.6227 | 2.6345 |
| Meat Products | 4.0402 | 6.0270 | 3.1488 |
| Seafood Produce | 1.4994 | 0.8986 | N/A |
| Dairy Produce | 1.5335 | 2.0349 | 1.4826 |
| Fruit | 0.3195 | 0.5851 | 0.0762 |
| Vegetables | 1.0487 | 1.1897 | 0.9914 |
| Non-alcoholic Beverages | 1.6493 | 2.8072 | 1.5779 |
| Confectionery | 0.3072 | 0.2004 | 0.2269 |
| Miscellaneous Food | 0.5690 | 1.2973 | 0.5522 |
| Take-away Food | 3.4363 | 1.3853 | 2.2153 |
| Alcoholic Beverages | 1.3768 | 3.1933 | 1.5890 |
| Alcoholic Beverages | 1.3768 | 3.1933 | 1.5890 |
| Housing \& Utilities | 30.3859 | 31.1513 | 44.6249 |
| Housing | 15.1278 | 7.8888 | 13.7889 |
| Utilities | 10.0594 | 12.0407 | 14.5987 |
| Household Goods/Furniture | 1.0887 | 5.3456 | 2.0813 |
| Household Maintenance | 4.1101 | 5.8762 | 14.1559 |
| Apparel | 6.1443 | 8.7016 | 7.8026 |
| Mens Clothng | 1.7022 | 2.9283 | 1.5850 |
| Womens Clothing | 2.0195 | 3.0038 | 2.4739 |
| Infant Clothing | 0.6881 | 0.5074 | 0.7567 |
| Footwear | 1.2561 | 1.8681 | 2.5288 |
| Accessories | 0.4783 | 0.3942 | 0.4582 |
| Transportation | 22.2282 | 7.9752 | 10.3137 |
| Vehicle Purchase | 13.8896 | 0.4586 | 2.1391 |
| Vehicle Maintenance | 7.2386 | 5.3267 | 7.6918 |
| Public Transport | 1.1000 | 2.1900 | 0.4827 |
| Medical Care | 10.6622 | 10.8923 | 9.3760 |
| Medical Supplies | 1.2291 | 1.3909 | 2.3924 |
| Medical Services | 9.4330 | 9.5014 | 6.9836 |
| Recreation | 3.3994 | 4.0032 | 2.2680 |
| Recreation | 3.3994 | 4.0032 | 2.2680 |
| Education \& Communication | 5.6292 | 5.7111 | 2.9257 |
| Education | 0.6395 | 0.6188 | 0.4815 |
| Communication | 4.9897 | 5.0923 | 2.4442 |
| Other Goods \& Services | 3.0656 | 7.3237 | 8.1944 |
| Cigarettes \& BetelNut | 1.7380 | 2.6558 | 4.1746 |
| Other Goods | 0.5353 | 0.4458 | 0.3478 |
| Other Services | 0.7923 | 4.2221 | 3.6719 |

