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SPOTLIGHT

ARE THE RECENT INFLATION
FIGURES FOR PAPUA NEW GUINEA
REFLECTING THE CHANGES IN
PRICES OF GOODS AND SERVICES?

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Key Points

- The National Statistical Office (NSO) collects prices of expenditure items in eight towns and calculates the consumer price index (CPI) every quarter.
- In recent years (2020-2023), domestic inflation numbers were generally lower than expected. Some quarters recorded negative price changes, indicating falls in inflation.
- Some potential factors that affect the CPI inflation figures include the weights, items, and outlets. Most of the CPI calculation elements were determined during the 2009/2010 Household Income and Expenditure Survey (HIES).
- To improve the reliability of the inflation figures, the NSO should consider conducting a new HIES, improving the sampling procedure, and providing more training to field officers to minimise recording or coding errors.

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ARE THE RECENT INFLATION FIGURES FOR PAPUA NEW GUINEA REFLECTING THE CHANGES IN PRICES OF GOODS AND SERVICES?

By Thomas Wangi

The government has delegated the National Statistical Office (NSO) the responsibility to collect, compile and release official statistics on the economy, population, health, education, and other social sectors. The economy covers the consumer price index (CPI), gross domestic product (GDP), and balance of payments (BOP). The CPI is the indicator of inflation, which measures price changes of a basket of goods and services consumed by urban households; GDP is a monetary measure of the market value of all the final goods and services produced within a year by both nationals and non-nationals living in the country; and BOP summarises the economic transactions of the local economy with the rest of the world. This article focuses on inflation, one of the key macroeconomic indicators. Inflation refers to a general increase in the prices of goods and services in an economy over a period of time, and is typically recorded and reported as a percentage.

In Papua New Guinea (PNG), inflation is of great concern because it directly reduces the purchasing power or value of the Kina. Specifically, during high inflation, people buy fewer goods and services or need more Kina to buy the same amount of goods and services as before. The loss in the value of Kina negatively impacts the cost of living and welfare of the people. Inflation also affects the business operational costs, that is, firms have to pay more to produce goods or to provide services. While anecdotal evidence suggests that the inflation pressure was high in recent years (2020-2023), the published inflation figures from the NSO were lower than expected (Luma and Kamus, 2023). Hence, this article provides some understanding on how inflation rate is measured in PNG. It then highlights inflation figures from NSO reports and identifies possible factors that might have contributed to low inflation numbers. The article ends with some recommendations on how to improve inflation statistics in the country.

Causes of inflation

The three main causes of inflation in PNG are demand-pull, cost-push, and imported (NSO, 2023). Demand-pull inflation is caused by developments on the demand side of the

economy. When the demand for a good or a service exceeds the supply, the price automatically increases. For example, when the supply of betel nut is low in Port Moresby, the sellers respond to the high demand by selling the betel nuts at high prices. Cost-push inflation is caused by the effect of higher input costs on the supply side of the economy. That is, as production costs increase, the producers charge high prices for their products. For instance, in the agriculture sector, as the price of fertiliser increases, the farmers sell their produce at high prices in the markets. Imported inflation is caused by the depreciation of the local currency against the currencies of trading partners. For instance, when the Kina depreciates, all imports become expensive. Consequently, the importers sell imported goods at high prices in the local shops.

Scope and coverage of the CPI

The NSO conducted a formal household income and expenditure survey (HIES) in 2009/2010 to rebase the CPI base year since expenditure patterns of households in the cities and towns had changed since 1977, the last CPI base year (NSO, 2012). The survey covered 1803 households in eight towns – Port Moresby, Lae, Madang, Goroka, Mount Hagen, Alotau, Kimbe, and Rabaul. The survey in 2009/2010 assisted the NSO in rebasing the CPI base year to 2012 and to change the expenditure categories to 12. The expenditure groups were food and non-alcoholic beverages; alcoholic beverages, tobacco and betel nut; clothing and footwear; housing; household equipment; transport; communication; health; recreation; education; restaurant and hotels; and miscellaneous. Under the 12 expenditure groups, a total of 300 items were included in the index. Each item was allocated its own weight from the survey results and also the weight of any related items (NSO, 2012). The price collection scope determined in the 2009/2010 HIES is current.

Data sources and collection methods

The NSO collects prices from about 320 different outlets throughout the eight towns, including retailers, supermarkets, hardware shops, local markets, provincial and local level governments, schools, health facilities, hotels, real estate agents, auto-part shops, communication companies,

garages, town authorities and energy providers (NSO, 2012). The NSO selected the outlets during the 2009/2010 HIES. Prices are collected by trained and experienced field officers through personal visits, mail/emails, and telephone calls on weekly, monthly, quarterly, and annual basis (NSO, 2012). The source, method and frequency of collecting data vary between towns and items. For instance, in Port Moresby, the NSO officers visit markets, supermarkets and retailers every week to collect prices of fresh fruits, vegetables, betel nuts and mustard. The NSO collects at least a thousand prices every quarter.

How is inflation measured?

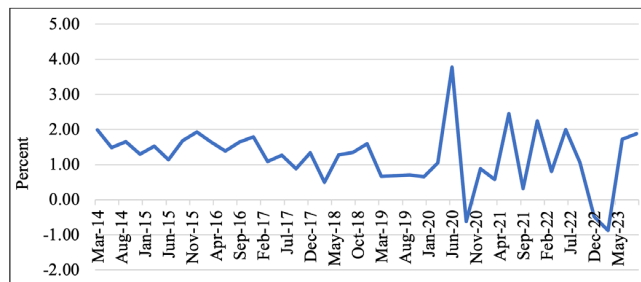
In PNG, the CPI is calculated by the NSO using the Laspeyres Price Index, which is commonly used in many countries (NSO, 2012). The CPI is calculated as a weighted average of the price changes of the expenditure items covered by the index. The price index measures the economy's general price level and cost of living and calculates inflation. The detailed description of the price index method is outlined in the NSO's Revised Technical Note No. 4. To calculate the CPI, the NSO collects prices from 300 items that come under the 12 expenditure groups. All prices are checked and then quarterly average prices are calculated for each item in each town. Thereafter, indexes are compiled for each expenditure group in each town to form an average index for the entire CPI basket in a quarter. Every quarter, the NSO calculates the percentage change using the average indexes from the previous and current quarters. The percentage change indicates how much the CPI for the specific good or service has increased. The percentage change is known as the inflation rate. The NSO publishes the CPI inflation data once every quarter in its quarterly report. Figures 1 and 2 present the recent inflation data.

Quarterly headline inflation

Figure 1 illustrates the fluctuations in the quarterly inflation rate of PNG from March 2014 to September 2023. It shows that the headline inflation, as measured by the CPI, fluctuated between 4.0 and -1.0 percent. The significant rise in inflation rate from 2020 is due to decline in production and household spending during the coronavirus pandemic. The supply chain disruptions of certain goods such as oil and wheat during the Ukraine War also contributed to high inflation. Moreover, the depreciation of the Kina against the currencies of major trading partners contributed to high prices of imported goods. Clearly, the main causes of inflation from 2020 to 2023 were demand-pull and imported. However, the notable observations are the negative inflation rates officially recorded in September 2020 (-0.6 percent), December 2022 (-0.5 percent) and March 2023 (-0.9 percent), the times during which inflation pressure was high and people were struggling to afford the high cost of living. The prices of most essential

goods and services increased by at least 20.0 percent between 2020 and 2023 (Luma and Kamus, 2023). For example, in Port Moresby, the price of 1kg of Trukai rice increased by 49 percent, from K3.70 in July 2020 to K5.50 in July 2023 while 1kg of flour rose by 57 percent, from K5.10 to K8.00 during the same period.

Figure 1: Quarterly headline inflation, March 2014 to September 2023

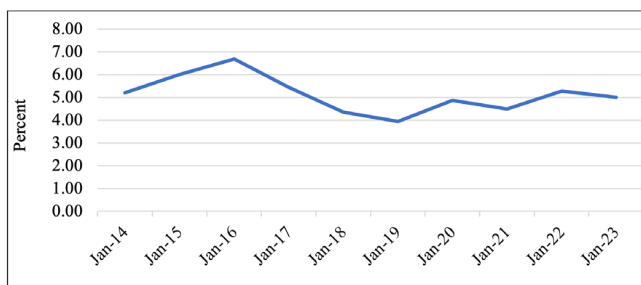


Source: NSO

Annual headline inflation

The NSO also publishes annual inflation data in its quarterly report. Figure 2 shows that annual headline inflation fluctuated between 4.0 and 7.0 percent. The NSO recorded the highest annual inflation rate of 6.7 percent in 2016 while the lowest was in 2019. From 2020 onwards, the headline inflation was averaged at 5.0 percent per year, and remained largely flat with limited fluctuations. The small quarterly CPI changes might have contributed to low annual inflation numbers. In PNG, the annual figures are calculated as the simple averages of the quarterly inflation numbers. Furthermore, the small CPI changes have become a concern because prices of almost all goods and services increased drastically after 2019 (Luma and Kamus, 2023). Notably, inflationary pressure was high in recent years (2020-2023) but the official inflation numbers were fairly low. Hence, the next section explores the possible factors that may affect the calculation of CPI inflation in recent years.

Figure 2: Annual headline inflation, 2014 to 2023



Source: NSO

Why inflation numbers are low?

The Revised Technical Note No.4 reveals that the NSO follows a standard procedure to collect prices of selected expenditure items and uses a recognised method to calculate

the quarterly CPI inflation. The current process employs most of the elements determined in the 2009/2010 HIES such as the weights, expenditure items, outlets, and towns. The survey was conducted nearly 14 years ago to determine the fourth CPI base year for PNG. Since the 2009/2010 survey, the expenditure patterns of urban households might have changed, which could affect the CPI calculation. Firstly, the weights are meant to reflect the relative importance of the goods and services as measured by their shares in the total consumption of households. The current weights are based on a limited sample of 1803 urban households. The changes in the expenditure patterns of urban households since 2010 could potentially affect the weights for each indicator item in the CPI basket. Secondly, the sampling for the CPI has three dimensions: the product dimension which refers to 300 selected goods and services; the geographical and outlet dimension which refers to eight towns and 320 outlets where the prices are collected; and the time dimension which refers to the sub-periods of the index. As the number of urban households have increased in the country since 2010, the current sampling dimensions may not appropriately capture the price movements and expenditure patterns. Thirdly, apart from the sampling error, prices are subjected to reporting error. For instance, there may be errors resulting from including incorrect prices, excluding correct prices, or entering correct prices inappropriately. Some of these errors may be caused by recording or coding mistakes, or false reporting. For example, if an expenditure item is not available in an outlet during the price collection period, the field officer may mistakenly record zero as a price change in the system. The zero may pull down the weighted average of the entire CPI basket.

Policy implications

The CPI is the most widely used measure of inflation, closely followed by policymakers, financial markets, businesses, and consumers. Hence, having access to reliable CPI data is essential for PNG. Firstly, appropriate weighting is important in the construction of the CPI. The current weights can be outdated because the expenditure patterns have changed since the 2009/2010 survey. There is a need for a new HIES to update the weights by covering more urban households. The survey may require funding support from the government through the normal budgetary process. Secondly, the current CPI data collection procedure only covers eight towns, some of which are considered to share similar expenditure patterns. Some expensive towns such as Kiunga, Lihir, Tabubil and Porgera have been excluded. Since 2010, number of shops, types of goods and services, and the number of urban households may have increased throughout the country. The

NSO needs to expand the sample dimensions and review the sampling procedure to improve data collection. Thirdly, the errors relating to data collection, recoding and coding may affect the credibility of published inflation numbers. Hence, the NSO may have to conduct trainings for the field officers and data entry staff to improve their data collection and management skills.

Conclusion

Inflation is an important economic indicator as it directly affects the welfare of people and the cost of businesses. In PNG, inflation pressure has been high since 2020 due to the coronavirus outbreak and the war in Ukraine. However, the actual inflation figures in recent years (2020-2023) were lower than expected. For instance, some quarters recorded negative price changes, indicating falls in inflation. Such official numbers have become a concern as inflation influences government policy relating to welfare activities. As such, it is important that the NSO must review its data collection and recording procedure to address potential technical and human errors. Moreover, the opportunity for a new HIES needs to be considered purposely to update the weights of the indicator items. Other options to improve the CPI calculation include expanding the CPI towns, revising the indicator items and reviewing the outlet selection process.

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