

Consumer Price Index Statistics: Some Lessons from Pacific Small Island States

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Abstract

The CPI is generally compiled across most Pacific Island states and is reasonably timely. Quality of the CPI varies from one country to the other due to a combination of many factors. CPIs across the small island states are not harmonized and comparison is extremely difficult. The small size of the economies on the other hand entails that there are not many products consumed by households. Limited number of products poses serious challenges in adopting internationally accepted commodity groupings such as the COICOP that require more detail. International comparability is beset by issues bordering on data quality and estimation within countries. Most small island countries are confronted by a perennial problem of missing products that vanish from outlets for over a year and reappear or never. Replacement of missing items is complicated by lack of substitutes or substantial differences in product quality.

Key Words

Small Island countries, Data quality, Statistical Capacity

Background

The Pacific Region is home to some of the world's smallest countries and territories ranging in population from 56 in Pitcairn Islands to slightly over 6 million in Papua New Guinea. Despite the variations in population, all Pacific island countries and territories (PICTs) do carry official statistical functions just like any other country. This is done in order to inform policy makers, or to avail to them data, upon which, evidence based decisions can be made. Similarly, membership to various international and regional organizations requires these small island states to report

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statistics including the consumer price index for international comparison purposes, and other uses.

Just like the variation in population, a similar pattern is apparent in the size of statistical offices. Some countries such as Niue have one person in the NSO while others such as Fiji and Papua New Guinea have slightly above 100 personnel.² In either case, the expected statistical outputs for each are roughly the same. This means any PICT statistical agency is required to produce all sorts of official statistics that a typical NSO does. It becomes such an enormous task for such national statistical agencies to cope with the volume of work and accordingly they tend to prioritise their activities

Despite these challenges, most of the PICT small island states regularly produce a consumer price index with the exception of the Pitcairn and Tokelau at the moment. Some of the countries produce their CPI on a monthly basis while others do so on a quarterly basis with different consumption groupings. Various factors, such as limited data collection resources, overall workload of the statistical agencies and staff availability do have an impact on timeliness. Methodologies are not harmonized, and in most cases the CPI structure is unique to individual countries, often reflecting national requirements and nature of products available.

While most countries are able to compile a CPI, serious questions arise with respect to data quality. This paper discusses some of the practical challenges that small island states encounter in CPI compilation, and how they affect data quality. Sources of error and the subsequent quality

² Such number of staff does not take into account the skill of staff and their qualifications. Middle sized offices such as Vanuatu, Samoa, Kiribati, Micronesia and Tonga have under 20 personnel. Tuvalu and Nauru have 4 and 5 people respectively.

effects are highlighted, reflecting the experience SPC has in the years of offering technical assistance to such countries. Steps to deal with capacity constraints are also presented.

Rebasing the CPI

The most recent CPI rebase has been undertaken in Samoa, Tuvalu , Tonga and Vanuatu following a round of Household Income and Expenditure Surveys (HIES). While some of the results have not been officially published, the exercise of rebasing has often exposed serious issues that affect data quality with such errors carried on overtime.

Of the various uses, the HIES within the Pacific context, is the only major source of expenditure weights in designing the consumption basket of the CPI. Based on the most recent CPI rebase for instance, undertaken in Samoa, Tuvalu and Tonga, the quality of HIES data raises lots of questions in terms of the accuracy of the weights. We observe some changes in consumption patterns between subsequent HIES in individual countries that are difficult to comprehend given static changes in national economic structures over time.

Most PICTs are highly dependent on imports. The structure of imports has not changed significantly over time. This, in our experience does cause a source of error in ascertaining the actual weights of household consumption goods. In most cases the quality of trade statistics is very not very satisfactory with a lot of imports not accounted for. In commencing a process of rebase, compilers are confronted with a problem of reconciling HIES expenditures and alternative sources, but these data sources are also often unreliable.

Errors of Measurement and Classification in the HIES

Household expenditure surveys do generally form a basis upon which countries can track consumption structures of individual households. Just like most surveys, the HIES is prone to sampling errors. While some pacific island countries do have the advantage of being small in size and can consequently minimise the sampling problem, data quality can be compromised by collection/field errors arising from limited supervision.

We observe that while most island countries run the HIES in most parts the CPI in some cases is restricted to the main urban centers given huge transportation and logistical costs. Consequently the CPI would be done for the main city, and assumed to be nationally representative. While it may be argued that urban household expenditure patterns might be a reasonable substitute, the spending patterns of individual households tends to follow a different pattern. For instance, transport costs for shipping goods into the outer islands are high and may pay higher prices for most supplies. Similarly, outer islands have predominantly traditional housing, which is cheap, compared to commercial properties in urban centers.

Errors emanating from under reporting certain products such as alcohol are quite enormous. Often a reconciliation on the supply side either from domestic production or imports, notwithstanding the quality of trade data, shows deliberate underreporting by households in the HIES. Consequently, we note that the HIES becomes highly unreliable in determining the weights of commodities that are grossly underreported due to social factors. While this is an acknowledged global issue it is more problematic for PICTs during CPI rebase, as alternative data sources are far less reliable.

Compilation issues and data quality

The compilation process just like the design is equally important in ensuring that good quality CPI is produced. Within the context of the Pacific Island countries, overtime, we observe common patterns that affect data quality. These include:

- Missing products over long periods
- Closing and opening of stores on a regular basis
- Diversity in product quality and substitution
- Products that reappear after long periods
- Product diversity across islands within same country
- Human resource requirements in the compiling agencies.

Pacific islands by the nature of their small sizes rely heavily on imported items and sometimes distance to major markets can determine what is actually imported into the country. Diversity in terms of imports and the sources can complicate how an index is calculated within an individual country. This has an impact in harmonizing the CPI if the product mix is so diverse. For instance in Kiribati, Christmas Islands, very remote from Tarawa, the capital, trades heavily with the US while the main Island trades mainly with Fiji, New Zealand and Australia³ and the product brand/varieties are so different. Given such diversity of the products within the same country, it

³ There are no direct flights at the time of writing this paper between Tarawa and Christmas Islands. To travel by air to Christmas islands, NSO staff have to go through Fiji and Hawaii to do routine statistical work. This tends to be a very costly exercise on NSOs that operate with lean budgets.

is sometimes very difficult to develop a standard sample of products to the extent that countries resort to having an index for the main urban center/capital city only.

Comparability and Classification Standards

CPIs that are standardized ensures that cross-country comparisons are possible. It generally makes users track movements in prices in the individual consumption groups easier. However, developing a CPI that is standardized is not an easy task given country specific situations and international classifications such as the COICOP amongst PICTs. Within the context of the Pacific, the countries have different CPI groups and sometimes it is so difficult to draw cross-country comparisons.

Table 1 below highlights some stark differences across selected PICTs in terms of the actual consumption groups as compiled in their CPI. Countries such as Samoa and Nauru have six consumption groups reflecting the way their source data is designed. While all these countries have the same total groupings, comparison amongst them is not exactly possible.

Micronesia on the other hand has aspects of transport and communications covered under services. Vanuatu in their most recent rebase, undertook efforts to expand their consumption group breakdown to be in line, at least with international standards such as the COICOP but suited to their situation.

Table 1: CPI Groups of Selected Pacific Island Countries

Cooks	Kiribati	Nauru	FSM	Samoa	Tonga	Vanuatu
Food	Food	Food	Food	Food & Beverages	Food	Food
Housing	Drinks	Clothing & Footwear	Alcoholic beverages & Tobacco	Housing & Household operation	Housing	Drinks & Tobacco
Household operation	Alcohol & Tobacco	Housing	Clothing & Footwear	Alcohol & Tobacco	Household Operations	Housing & Utilities
Apparel	Clothing & Textiles	Household Operation	Housing	Transport & Communication	Clothing & Footwear	Household Supplies
Transport	Transport	Transport & Communication	Fuel, Light & Water	Miscellaneous	Transport	Health
Tobacco & Alcohol	Utilities	Transport & Communication	Services		Alcohol Tobacco & Kava	Transport
Miscellaneous	Housing		Miscellaneous		Miscellaneous	Communication
	Education					Education
	Recreation					Miscellaneous
	Household Operation					

Source: Various PICTs NSO offices

Samoa recently rebased their CPI with the intent of breaking down consumption groups along the COICOP⁴. Some observations arose in the process that put to test the applicability of COICOP to some countries such as developing PICTs. It still remains difficult to distinguish expenses on food consumed in restaurants or hotels from purchases for home consumption in source data/diary of expenditures. Consequently it is difficult to make accurate estimates of appropriate weights particularly with regard to the food and non-alcoholic beverages *vis-à-vis* restaurants and hotels expenditure categories. However, PICTs are all moving towards adopting COICOP for their HIES commodity codes-which will still benefit international comparisons.

Similar sentiments of difficulty in identifying expenditure categories are quite apparent in items associated with fishing. Across PICTs, fishing remains an important source of livelihood and most households are engaged for this purpose. The HIES diary reports expenses on fishing lines and hooks. COICOP classifies such expenses as “Recreational” which probably fits well with advanced or developed economies where angling/recreational fishing is common. However, it becomes tricky to consider such expenses as recreational and in most cases they are classified as part of “household operations” or under the “miscellaneous” category. It is therefore, difficult to come up with such a group in some cases given limited availability of necessary products.

One key element of ensuring that there is a wide breakdown of consumption groups is the availability of products that can be sampled and regularly priced. However the sheer size of the economies entails that there are limited products to warrant adoption of a major classification in some of the economies. Availability of some products is so erratic and in most cases may not have readily available substitutes.

⁴ The results of the CPI are yet to be officially released.

Human Resource Constraints

While most PICTs have conducted HIES and accordingly rebased their CPI, their ability to produce good quality indices is hampered by lack of qualified personnel. One common problem is high staff turnover across all PICTs national statistical agencies often with most personnel joining planning/treasury or central banks where remuneration structures are more favourable. Given such high staff turnover, a lot of time is spent on training replacements with limited statistical skills. Developing their skills and confidence takes time, but at the same time a country has to continue producing the CPI and other national statistics. Such new staff with limited experience, are required to collect prices and do the compilation immediately. Skills on how to deal with practical challenges involved in CPI compilations such as missing products, differences in quality of substitutes, timing of price collection etc are inadequate and difficult to nourish in an environment of high staff turnover.

SPC support to CPI activities

Given the various challenges that afflict PICTs in compiling consumer price indices and other economic statistics, SPC has continued to support countries with a goal of enhancing their capacity. A comprehensive program of household income and expenditure surveys (HIES) has been continuously undertaken with support of other technical partners such as the Asian Development Bank and AUSAID in selected countries. Besides providing data for poverty/hardship analysis, the HIES has allowed a number of countries to update their CPI weights and efforts are intensified to improve quality control procedures and standards.

With respect to specific technical assistance to countries, a number of countries are continuously supported in the rebase of the CPI, estimation techniques, sampling and managing the CPI in

general. This assistance comes in form of staff attachments to the SPC, in country technical assistance missions and in other cases, particularly for the smallest island countries, capacity supplementation in which our experts do the actual compilation. Countries seek specific advice on CPI compilation on a need basis and SPC generally responds to such requests.

From a strategic point of view, SPC and the Pacific Islands Forum Secretariat (PIFS) commissioned a “Statistical Benchmarking Study” which has resulted in the development of a Pacific Statistics Strategy (PSS) action plan. The PSS has two five year phases starting 2011. As part of the PSS, SPC will continuously undertake skill audits and help develop economic statistics plans across NSOs so that countries are able to produce a minimum set of high quality economic statistics including CPI. In doing so, SPC will be in a better position to know the changing unique circumstances of each individual country, particularly their skills set and thus subsequent needs.

Conclusion

PICTs are confronted with the reality of being small sized and therefore do not have adequate number of personnel to undertake major statistical functions. While it is important to ensure that international standards and requirements are universally adopted, the sheer size of some countries in the region makes it difficult to do so. In some instances, it is appropriate to adopt measures and tools that can be easily applied and used in individual countries on a sustainable basis. The skill problem compounded by high staff turnover entails that regional and bilateral agencies will continue to play a big role in building statistical capacity of PICTs.

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