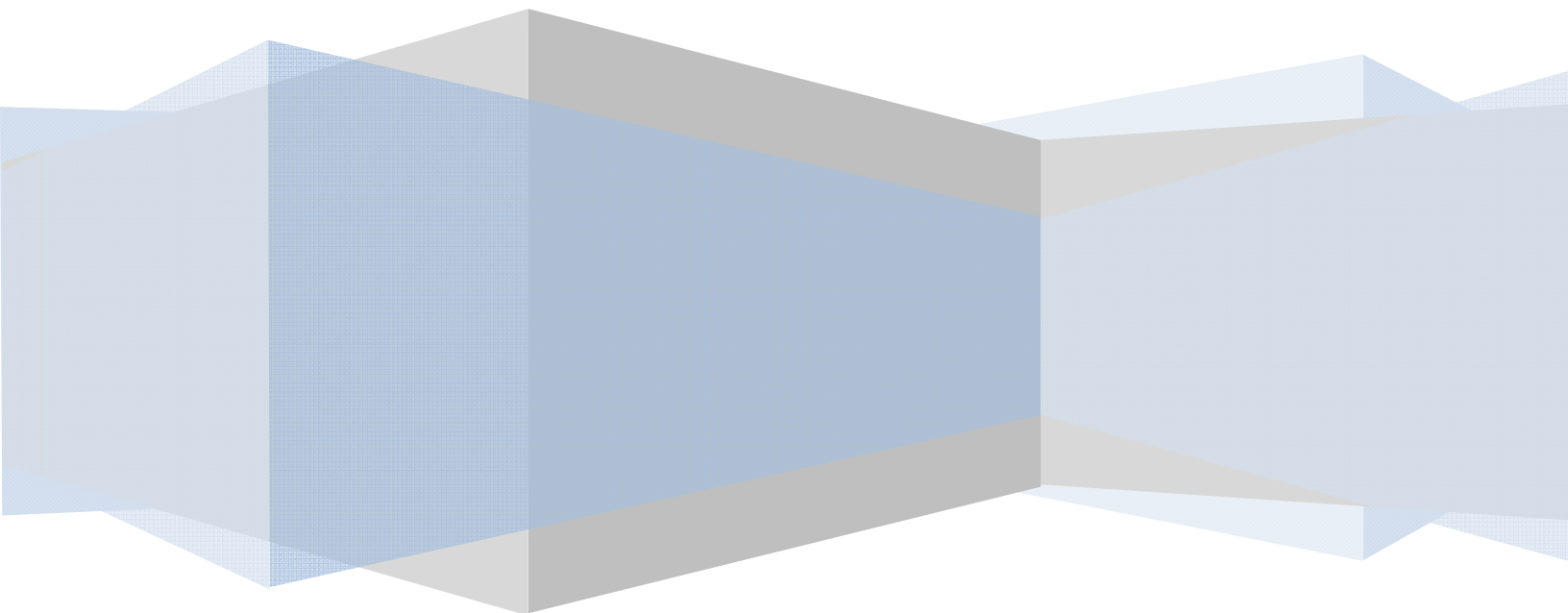


INFORMATION PAPER

Review of Timor-Leste Consumer Price Index (CPI) 2012: Issues for Consideration



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INTRODUCTION

The National Statistics Directorate (NSD) is responsible for national statistics in Timor-Leste. NSD has prepared this Information Paper as a basis for user consultation regarding the review and reweighting of the Timor-Leste Consumer Price Index that is currently taking place.

The Consumer Price Index (CPI) is an important economic indicator. It provides a general measure of changes in prices of consumer goods and services acquired by Timor-Leste households. The CPI is used in the development and analysis of economic policy. The CPI is one of the highest profile statistical series that is published by national statistical offices. To ensure the contemporary relevance of the index, and that it continues to reliably measure price change in accordance with its stated purpose, it is necessary to periodically review and reweight the CPI.

A CPI has been compiled for Dili since December 2001 and for the whole country since June 2003. The weights of the current CPI are based on expenditure data derived from the 2001 Timor-Leste Standard of Living Survey (TLSLS).

It is the intention of the NSD to maintain a program of periodic reviews of the CPI to ensure that it continues to remain relevant and accurate. While an important objective of these CPI reviews is to update item weights, it also provides an opportunity to reassess the scope and coverage of the index and other methodological issues.

The timing of CPI reviews is predominantly dependent on the availability of data from the NSD-conducted Household Income and Expenditure Survey (HIES) - the latest of which was conducted in 2011 (24 January 2011 to 23 January 2012).

The NSD is receiving technical support in this review of the Timor-Leste CPI from the Australian Bureau of Statistics, with financial support from the Australian Agency for International Development (AUSAID). The NSD is very grateful to both agencies for supporting the development of official statistics in Timor-Leste.

NSD is seeking the views of interested parties through a public seminar to be held during the course of the review to enable NSD to hear directly from the community on the usefulness of the CPI and on the proposals contained in this Information Paper. The timing and location of this seminar will be made available in a media release. Interested persons may also express their views directly to the NSD by writing to Direcção Nacional de Estatística, Rua de Caicoli, PO Box 10, Dili, Timor-Leste; or by email to dne@mof.gov.tl

SCOPE OF THE REVIEW

The weighting pattern for the Timor-Leste CPI is now quite out of date and, more generally, the CPI is relatively immature in terms of commodity and geographical coverage; these

issues are the main focus of this particular CPI review. This paper contains information on each of the key issues NSD is considering during the course of this review.

The eight major issues that the NSD has identified in this CPI review are:

1. Conceptual design of the CPI;
2. Compilation frequency of the CPI;
3. Maintaining the relevance of the CPI;
4. Commodity classification;
5. Geographic coverage;
6. Supplementary analytical series;
7. Publication content; and
8. Re-referencing

NSD is seeking the views of interested parties through a public seminar to be held during the course of the review to enable NSD to hear directly from the community on the usefulness of the CPI and on the proposals contained in this Information Paper. The timing and location of this seminar will be made available in a media release. Interested parties may also express their views directly to the NSD by Direcção Nacional de Estatística, Rua de Caicoli, PO Box 10, Dili, Timor-Leste; or by email to dne@mof.gov.tl

ISSUES UNDER CONSIDERATION

1. Conceptual design of the CPI

The Timor-Leste CPI has been designed specifically to provide a general measure of price inflation of goods and services faced by households. It is conceptually based on the *acquisitions* approach for compiling a CPI, measuring changes in the prices of goods and services acquired by households. NSD proposes to maintain the *acquisitions* approach for compiling the Timor-Leste CPI. For details on conceptual approaches to the CPI see Appendix 1.

Using Fixed weights

Measures of price change are determined by initially pricing the price basket in the *price reference period* and repricing the same basket each month or quarter. The measure of price change is obtained by comparing the value of the price basket in each successive period with the value of the basket when measured in the price reference period.

The longer the same weights are used, however, the less representative they become of current consumption patterns, especially in periods of rapid economic and social development and technical change when new kinds of goods and services are continually appearing on the market and old ones disappearing. This may undermine the credibility of an index that purports to measure the rate of change in the total cost of a basket of goods and services typically consumed by households. Such a basket needs to be representative not only of the households covered by the index, but also of expenditure patterns at the time the price changes occur.

The frequency at which the CPI is reweighted is constrained by the main source of expenditure weighting information, the HIES, which has been conducted irregularly. The HIES captures the detailed spending patterns on the full range of goods and services that households purchase. NSD has committed to conducting a rolling HIES that would allow for contemporary household expenditures to be determined and that will offer the potential for more frequent updating of CPI weights. This strategy will ensure that, at any point in time, the weighting patterns and item coverage of the CPI are relevant to user requirements and reflect contemporary economic conditions as well as possible.

From a CPI perspective making the HIES into an ongoing survey will help NSD to respond to evolving purchasing behaviour and help alleviate the situation where rapid turnover in items (such as high technological goods) can lead to serious sample depletion. Reducing the period between re-weighting of the CPI will also help reduce the upper-level substitution bias in the CPI.

Currently the CPI price movements are calculated using a 'variable weights' approach, in which the weights of the main components (termed expenditure classes) tend to change according to the changes in price relatives from period to period. For instance, if the price of an expenditure class increases above the level of the entire basket of goods and services (All groups index) then its relative importance or weight increases. Vice versa, if price movements for an expenditure class are below the All Groups level then its relative importance or weight decreases. The rationale behind using a variable weights approach was to overcome the problem of not having continuing availability of robust expenditure volumes to update the CPI weights.

NSD is considering discontinuing the 'variable weights' approach to constructing the CPI and instead adopting a fixed weight approach to the CPI basket. The basket is fixed over time – that is, the absolute quantities of goods and services are held constant, as is the quality of those same goods and services. This aligns with international best practice of calculating price relatives as the ratio of the current month's prices to the corresponding prices in the time reference base period, and aggregating with fixed volume weights (the traditional Laspeyres index approach).

NSD proposes to produce a series of short-term fixed-weighted indexes that will be regularly linked together to provide a single continuous measure of price change. Quantities underlying the base period expenditures (the CPI weights) remain fixed between periodic index rebases.

Calculation of price change

CPIs are calculated in steps. In the first step, the elementary aggregate indices are calculated. In the subsequent steps, higher level indices are calculated by aggregating the elementary aggregate indices.

The elementary aggregate is the smallest and relatively homogeneous set of goods or services for which expenditure data are used for CPI purposes. The method of calculating price change at the elementary aggregate level is important to the accuracy of the price index. There are several ways in which the prices, or the price relatives, might be averaged. The three most commonly used formulae are the ratio of arithmetic mean prices (RAP), the geometric mean (GM) and the arithmetic mean of price relatives (APR).

The APR formula is currently used in the Timor-Leste CPI. Research undertaken around the world has shown that the APR approach can be more prone to (upward) bias than the other two methods. NSD is considering changing to the more widely used geometric mean approach to calculate price change at the elementary aggregate level.

The GM formula has become more widely accepted in around the world for compiling consumer price indexes. For example, Canada switched to using GMs in the late 1980s; the United States introduced the GM formula for items making up about 61% of its CPI in January 1999; and Australia began introducing the formula in the December quarter 1998. Furthermore, the GM formula is prescribed by the European Union for calculation of price sample means in its Harmonised Indices of Consumer Prices (HICP)

Diewert (1995) provided a range of seventeen tests developed for equally weighted (or elementary) index formulas. It is beyond the scope of this paper to describe all the tests, however, the mathematical properties of the equally weighted GM have considerable appeal as an elementary index formula. It passes all tests whereas the APR method fails the first three tests.

The GM applies weights such that the expenditure shares of each observation are the same in each period. In other words, the GM formula implicitly assumes households buy less (more) of items that become more (less) expensive relative to the other items in the sample. The other formulas assume equal quantities in both periods (RAP) or equal expenditures in the first period (APR), with quantities being inversely proportional to first period prices. The GM therefore appears to provide a better representation of household purchasing behaviour than the alternative formula in those elementary aggregates where there is likely to be high substitutability in consumption within the price sample.

Where the GM is not appropriate, the relative of arithmetic mean prices (RAP) should be used. The RAP may be used for elementary aggregates that are homogeneous and where consumers have only limited opportunity to substitute or where substitution is not to be reflected in the index. An example of this is electricity supply where it is not possible to switch to another provider.

Treatment of owner-occupied housing

Measuring the costs of owner-occupied housing is a difficult area of the CPI. Ideally, the approach chosen for the measurement of owner-occupied housing should align with the conceptual basis that best satisfies the principal purpose of the CPI.

As explained in Appendix 1, there are various approaches to measuring owner-occupied housing. However, the data requirements for some of these options may be such that it is not feasible to adopt the preferred treatment. Some countries adopt a treatment that is not entirely consistent with the approach adopted for other items in the CPI. Other countries exclude the measurement altogether.

Under the *acquisitions approach*, the required measure is the change in prices for both the net purchase of housing excluding land, and the increase in the volume of housing (including renovations and extensions), plus associated costs incurred in owning a dwelling (e.g. maintenance costs and rates for services).

Under the *outlays approach*, the required measure includes changes in the amount of interest paid on mortgages, and the costs incurred in ensuring the continued supply of services provided by the dwellings (e.g. maintenance costs and rates for services).

When data are unavailable for the preferred measures outlined above, some countries use imputed rent, or rental equivalence, as a proxy for costs of owner-occupied housing. Deriving the weight for rental equivalence requires estimating how much owner-occupiers would have paid in the weighting base period to rent their dwellings. This is not something that owner-occupiers can normally be expected to estimate reliably in a household expenditure survey.

In particular, rental equivalence causes a problem where the overall size of the private rental market is small or if rented housing is of a different type than owner-occupied housing in terms of general quality, age, size and location. In Timor-Leste, payable rent is an urban phenomenon - it basically does not exist in regional areas.

The 2011 HIES has provided an 'imputed rent' estimate, however, it is the NSD view that a construct like imputed rent does not belong in an *acquisitions-based* CPI. NSD does not support the use of measuring owner-occupied housing in the CPI until robust data requirements for this measure are available.

NSD view

The principal purpose of the Timor-Leste CPI should remain as a general measure of household price inflation, and as such the CPI will continue to be designed as an 'Acquisitions' index and therefore imputed rent for owner occupied dwellings will continue to be excluded from the index. The CPI will be constructed using fixed volume weights between periodic index rebases. The Geometric mean will be used to calculate price change at the elementary aggregate level in most cases.

2. Compilation frequency of the CPI

The International Monetary Fund (IMF) *General Data Dissemination System* (GDDS) specifies that IMF member countries should produce monthly CPIs (however the GDDS also provides some flexibility to ensure that it is appropriate to the circumstances of individual countries). One benefit generally cited in favour of a monthly CPI is early detection of turning points in the inflation cycle in the economy.

Currently the Timor-Leste CPI is compiled on a quarterly basis and the Dili CPI is compiled on a monthly basis. This approach was established due to operational difficulties associated with pricing in regional areas. Prices are collected each month in Dili and each quarter in regional areas. In the latter case, because the prices are collected by the Dili CPI staff travelling to regional areas, pricing is undertaken in a different month of the quarter in these regions in order to spread the workloads. Then, complex adjustments are made to the regional data using Dili monthly price movements as indicator series to backcast and forward cast the reported data to convert them from a monthly to a quarterly basis, before calculating quarterly averages.

To overcome this cumbersome process NSD is investigating the feasibility of compiling a monthly National CPI without incurring any additional costs to the CPI program and without

compromising the quality of the CPI. As part of the CPI review, NSD will examine ways of rationalising its current price collection activity based on analysis of price movement differentiation between urban and regional areas.

Production of a monthly National CPI may result in seasonal factors becoming more relevant in interpreting price change, whereas in a quarterly series, the seasonality may be somewhat 'smoothed'.

Publishing issues

Due to the absence of monthly National CPI data to date, it will not be possible to compile *annual, National* inflation rates on a monthly basis until twelve months of data are available for the new series (as the annual inflation rate is calculated as the ratio of the current month over the corresponding month of the previous year).

In the meantime, however, it should be possible to continue to publish annual inflation rates for Dili district and quarterly *annual, National* inflation rates on a quarterly basis at the 'All groups' level. The appeal of this option is that all available data sets can be published from the time of introduction of the Series 2 CPI.

A less preferred option for NSD is to lag the introduction of Series 2 CPI by one year, that is, compile the new CPI, but continue to publish the existing series for the first twelve months.

NSD view

The NSD proposes to compile a monthly National index and publish an annual inflation rate on a quarterly basis until twelve months of new series data are available, and thereafter on a monthly basis. The monthly Dili index, including annual inflation rates calculated on a monthly basis, will continue to be available.

3. Maintaining the relevance of the CPI

Updating CPI weights

The lack of reliable and up-to-date data on household expenditure has been felt for some time in Timor-Leste. It is clear that the 2001 based CPI weights are no longer representative of current household consumption patterns. In recent years, there has been a shift in relative consumption towards commodities such as Telecommunication devices and transport. Such structural shifts should be reflected in a rebased CPI. The rebased CPI will be referred to as 'Series 2 CPI'.

The starting point for compiling weights for the new series CPI will be the results of the 2011 HIES, which obtained information on the spending habits of Timorese households throughout 2011. The 2011 HIES results are based on the complete sample of 4,800 households, which covers all of Timor-Leste over the period 24 January 2011 to 23 January 2012. The HIES results represent the expenditure patterns of Timor-Leste households in aggregate.

NSD considers 2011 a 'normal' year - free from major economic upheavals and major government policy changes and sees no need to make any adjustments to the HIES results. Hence, the weights for all published components of the National and Dili indexes for the Series 2 CPI will be based solely on 2011 HIES expenditure results.

Currently there are insufficient retail trade data to determine more precise expenditure levels for lower level components of the index (rice, bread, footwear, etc.) and HIES expenditures will also be used for lower level weighting purposes. In the future, additional information may be able to be obtained from production and trade statistics, or from government, producers, marketing bodies and individual enterprises to assist in weighting for lower level components of the CPI.

Weighting patterns are likely to be quite different between urban and regional areas. Most notable differences are expected to be with the following areas; food purchased at sit-down and take away premises; housing expenses (rent, electricity etc.); schooling costs; household durable goods; and motor vehicles.

The weights in the new series CPI will relate to expenditures in 2011, revalued using price movements in the CPI, to the 'link' period prices to maintain fixed 2011 quantities. Any new components will be revalued using parent index movements.

New weights will take effect in the index from the first month after the link period (i.e. January 2013 if the link period is December 2012).

Pricing strategies

As household disposable incomes have increased, consumers are tending to purchase relatively more of their commodities from supermarkets than from traditional markets. As part of the CPI review, NSD will examine the mix of outlet types used in the CPI and will update product specifications to reflect contemporary purchasing patterns.

Consideration has to be given as to how best to collect prices in terms of efficiency, accuracy and representation of consumers' purchasing patterns. NSD will look at various options to streamline price collection activities.

NSD staff often experience practical difficulties pricing in traditional market places. Sellers may well be selling the same goods or services to different purchasers at different prices. Some sellers may not display any prices, all prices being negotiated. In many local or informal markets, especially in rural areas in developing countries, it is customary for the price paid to be determined by a process of bargaining between the buyers and the sellers. The prices paid may vary from one transaction to another depending on the bargaining skills of the buyers and sellers who frequent such markets. Close attention needs to be given in the pricing survey to deal with this circumstance. One option is to utilise outlets that consistently display prices to enhance the quality of the CPI.

It is assumed, for urban areas, that expenditure was incurred in the same region. Away from these areas, however, the same assumptions could not be made – some items may well be purchased on infrequent visits to urban areas. This presents a significant practical problem in establishing reliable price samples in regional areas. It therefore makes sense that the bulk of the price collection effort be directed at locations where most transactions take place and where reliable price estimates can be collected, rather than using population density as the basis for a CPI pricing strategy.

NSD considers it would be attractive in principle to construct consumer price indices and purchasing power parities from the same basic set of price data. Purchasing power parities consist of inter country comparisons of prices for a basket of goods and services that is both representative of, and comparable between, the countries involved. In practice, the scope for this may be limited because of the differing objectives of the two exercises. In particular, the additional need for prices collected in the context of purchasing power parities to be comparable between countries will generally result in a more tightly defined basket compared with that likely to be available and used for a consumer price index. NSD will explore the feasibility of collecting prices for international comparative specifications in Timor-Leste.

Quality adjustment

The objective of the CPI is to measure “pure” price change over time, so ideally, identical goods and services should be priced from one period to the next. This is called pricing to constant quality. However, in practice new products appear on the market frequently and replace older products. These new products have different attributes (or quality). For price index purposes it is necessary to measure these changes in quality, and to remove change in price attributable purely to the change in quality from movement in the price.

NSD supports the principle of quality adjustment in the CPI. To date, the need for quality adjustment has been sparse due to the low attrition rate in the ranges of products offered for sale in Timor-Leste outlets. NSD adopts a symmetrical approach to quality adjustment, adjusting for both improvements *and* degradation in quality.

The quality adjustment process is sometimes subject to criticism. The argument against the use of pricing to constant quality is that it reduces some price movements. Hence, the quality treatment of some items in the CPI does not reflect common perceptions of consumer price changes that can be seen in shelf prices.

NSD views

NSD proposes the following:

- *The rebased CPI will be referred to as 'Series 2 CPI'.*
- *Series 2 CPI weights will be based on 2011 expenditures obtained from the 2011 HIES.*
- *NSD will look at various options to streamline price collection activities.*
- *NSD supports the principle of quality adjustment in the CPI.*

4. Commodity classification

The classification system upon which any CPI is built provides the structure essential for many stages of CPI compilation. Most obviously, it provides the weighting and aggregation structure, but it also provides the scheme for stratification of products in the sampling

frame, at least down to a certain level of detail, and it dictates the range of sub-indices available for publication.

In determining the composition of the CPI basket (and item weights), the objective is to reflect the contemporary experiences of households. NSD acknowledges that the CPI commodity classification used to categorise the goods and services in the CPI should be updated to ensure it reflects contemporary wording and groupings. In doing so, one of the issues to consider is the extent to which the current classification could be aligned with the United Nations Classification of Individual Consumption According to Purpose (COICOP).

COICOP

COICOP was primarily developed to fit into the United Nations System of National Accounts but was also intended for use in CPIs. COICOP classifies household consumption expenditures by grouping together the various goods and services that are deemed to fulfil particular purposes. Many countries, including Australia and Indonesia, have primarily based their CPI classification on COICOP.

On the whole, COICOP is regarded as a desirable classification for use in a CPI; however there are a few areas of COICOP that do not fit well within a CPI classification. 'Restaurant' and 'take away' meals is an example of where the purpose of a good or service can lead to differences between COICOP and CPI. The COICOP division 'Restaurants and Hotels' covers several different services – food, alcohol and accommodation. However for CPI purposes, restaurant and take away meals are recognised as substitutes for eating at home, so both at-home and restaurant meals are included in the 'Food' group.

Alignment to COICOP would be beneficial for two main reasons. Firstly COICOP's design will provide a coherent structure for the CPI to aid in the measurement of household price inflation on an acquisitions basis. Second, it will enable greater international comparability.

CPI structure changes

The alignment to COICOP would result in considerable re-naming and some re-ordering of the items in the current index.

Alignment to COICOP is likely to result in the following types of series changes:

- some new series to be formed from splitting and/or combining existing series;
- some series will continue with minor compositional change;
- some series will be renamed and/or moved in the new series classification (these series will be linked to the previous series equivalent); and
- some existing series will no longer be available in the new series.

At the Group level the coverage of household expenditure will remain largely the same as the previous series, although NSD is proposing that two existing groups 'Education and Recreation' and 'Communication and Transport' be split out to create four separate groups.

Therefore, Series 2 CPI would consist of ten broad groups (up from eight groups in Series 1). A comparison with COICOP at the group level is provided in Appendix 2.

Changes in the coverage of the CPI basket will also affect weighting patterns.

NSD view

NSD supports alignment of the CPI commodity classification to COICOP to ensure it reflects contemporary wording and groupings, and to enable greater international comparability.

5. Geographic coverage

Geographical coverage may refer either to the geographical coverage of expenditures or the coverage of price collection. Ideally these two should coincide, whether the CPI is intended to be a national or a regional index. Decisions about geographical coverage in terms of urban versus rural coverage will depend on population distribution and the extent to which expenditure patterns and the movements of prices tend to differ between urban and rural areas.

In many countries, prices are collected in urban areas only since their movements are considered to be representative of the price movements in rural areas. The following countries cover urban households only (expenditure weights and prices): Australia, Mexico, Republic of Korea, Turkey, and United States. Most other developed countries tend to use weights covering urban and rural households, although in nearly every case price collection takes place in urban areas only. If price movements in urban and rural areas are felt to be sufficiently different, then there is a case to collect prices in rural areas if resources are available.

The difficulty with weighting regional areas is that it is unlikely that expenditure data will be available with the necessary split between expenditure within and expenditure outside the region of residence. HIES does not record point of purchase information.

Although there is a large (and growing) difference between urban Timor-Leste (particularly Dili) and rural parts of the country, NSD is of the view that the CPI reference population be the same as HIES – all resident households in Timor-Leste.

The expenditures used to weight the Series 2 CPI basket will be derived from 184,652 households in Timor-Leste of which 47,723 (25.8%) were considered urban and 136,929 were rural.

It should be noted that expenditures of resident expatriate households are included in the HIES. Nevertheless, these households are a concern since some of them constitute “outliers” because of spending levels and patterns different from the remaining population. Whether or not such households included in the HIES sample have a noticeable effect is not known, but they were included because they are undeniably part of the resident population. Some Timorese households are also displaying a more opulent lifestyle, for example households that repatriated from abroad.

HIES also includes estimation of expenditure for self-cultivated foods, which is a significant aspect of regional life in Timor-Leste. The extent to which it is desirable to include imputed expenditures within the scope of a CPI depends partly on the main purpose of the index. If the CPI is intended to be a measure of consumer inflation, it can be argued that only monetary expenditures should be included. However, in many developing countries home-produced food is like a second currency - this is true for Timor-Leste.

NSD prefers to publish CPI weights that align with HIES results to avoid confusion among users. Excluding expenditure for self-cultivated foods would understate the reliance on food in regional areas (by having a lower weight).

NSD views

The CPI reference population should be the same as HIES – all resident households in Timor-Leste. Resident expatriate households' expenditures will be included in the weights. Expenditure for self-cultivated foods will be included in the weights.

6. Supplementary analytical series

The analytical series 'All groups excluding housing' will continue to be published, consistent with international recommendations for CPIs. This is because housing is treated differently in country CPIs and valid international comparisons of consumer inflation need to take this into account.

Tradable and Non-tradable index

The relatively recent depreciation of the US dollar has resulted in higher import prices for commodities imported and paid for in other currencies, for example from Indonesia. A concern of policy makers and analysts is the extent to which price change is attributable to domestic market factors versus international factors.

In an open economy it is generally accepted that while the prices of some items are determined by domestic considerations, prices of other items are largely determined by prices on the world market. Those items whose prices are largely determined on the world market are referred to as *Tradables* while all other items are *Non-tradables*.

The compilation of price indexes that decompose the CPI into tradable and non-tradable items is seen as being of particular use in analysing domestically sourced versus internationally sourced price pressures.

NSD view

NSD is of the view that it would be useful to produce a tradable and non-tradable expenditure class based series, which would show how international and domestic price movements are impacting on movements in consumer prices.

7. Publication content

Convention holds that price indexes are presented through the use of index numbers. Movements in indexes from one period to another can be expressed either as changes in index points or as percentage changes.

NSD currently publishes the following tables (in PDF format) on the DNE website:

- index numbers of key components
- percentage changes (month on month, quarter on quarter, annual change).

NSD will continue publishing these tables for Series 2 CPI.

NSD is considering publishing points contributions of CPI components to assist users analyse the key drivers of the CPI price movements.

NSD will review the current presentation layout to accommodate any changes. To provide users with advance notice of the changes that will be incorporated, a mock-up of the revised format will be reproduced in a further Information Paper to be released prior to the introduction of the new series CPI.

NSD will explore options to provide CPI data in electronic form (e.g. Excel) to allow users to place the data directly into their spreadsheets/databases. This may take the form of a time series.

NSD will publish an electronic version of the Series 1 and Series 2 weighting patterns, and a correspondence between the 2011 HIES and the Series 2 CPI Expenditure classes.

NSD currently publishes average Dili prices data for items included in the CPI. The average prices published are presented for the purposes of making price comparisons for individual items at a single point in time. NSD is concerned that users may compare item prices over time (i.e. as a temporal measure like the CPI). This is inappropriate as the specifications and quality of items priced may change from period to period.

NSD is reviewing publishing this information given concerns that the data may be used for purposes beyond their scope.

NSD view

NSD is considering publishing points contribution tables to assist users analyse the key drivers of the CPI. NSD intends to make CPI data available as a time series in a downloadable format. NSD proposes to discontinue publishing average prices for Dili.

8. Re-referencing

The current base of the Timor-Leste and Dili CPI is December 2001. Although there is no technical requirement to undertake re-referencing at this time (for instance because of loss of index precision), NSD would like to make the base period more contemporary by re-referencing the CPI to coincide with the introduction of the new series. A reference base of a single month is proposed.

Re-referencing should not be confused with rebasing. Re-referencing results in the index numbers for each index series being reset to 100.0. Re-referencing does not change the relative price movements between periods for previously published data.

NEXT STEPS

NSD is seeking user and other stakeholder views on the proposals set out in this Information paper. Based on this feedback, and the ongoing technical work taking place, final decisions will be made on the issues under consideration.

A further Information Paper will be released in January 2013 setting out the decisions that have been made. That Information Paper will also set out the weights for the Series 2 CPI and will provide a mock-up of the new publication.

The first release of the Series 2 CPI will be in February 2013, containing data for reference month January 2013.

APPENDIX 1 - CONCEPTUAL APPROACHES

There are three alternative approaches for the construction of a CPI:

- the *acquisitions* approach;
- the *outlays* approach; and
- the *cost-of-use* approach.

Each concept is based on a different view of the basket of goods and services (items to be included and their relative importance). Concept selection depends on the principal purpose that the index is intended to serve. The three principal purposes and their respective concepts are listed below.

When measuring *household inflation* (from the CPI perspective) the *acquisitions* approach is considered the most appropriate. A measure of household inflation should relate to the contemporary rate of change in prices of goods and services acquired by households; and only include actual, or market determined prices. The *acquisitions* approach captures this, by measuring changes in the prices of goods and services acquired, or representative of those acquired, in the base period.

In order to determine changes in the *purchasing power of money*, an *outlays* approach would be most appropriate. The *outlays* approach defines the basket in terms of the amounts paid by households during the base period to gain access to consumer goods and services.

The *cost-of-use* approach provides the best indication of *changes in living standards* as it relates to goods and services consumed in the base period, irrespective of when they were acquired or paid for.

In practice, the conceptual distinctions are unimportant for most areas of household consumption. For most goods and services purchased by households, *outlays* and *acquisitions* occur within a relatively short space of time and the price paid by households represents an identical value, making the distinction unimportant.

The two main areas where *acquisitions* and *outlays* approaches provide significantly different results are:

- i. the treatment of owner-occupied housing costs; and
- ii. financial services and the use of credit

Due to the immature nature of the Timor-Leste CPI neither of these two measures is included yet.

APPENDIX 2 - COMPARISON BETWEEN CPI AND COICOP

The major differences between the proposed Series 2 CPI classification and COICOP are:

- The Series 2 'Housing' group excludes imputed rents for owner–occupier housing costs.
- The Series 2 'Food and non–alcoholic beverages' group includes restaurant meals and take away foods. COICOP classifies restaurant meals and take away foods under a separate group 'Restaurants and hotels'.
- The Series 2 'Recreation' group includes international holiday expenses (ie. air travel and hotel accommodation). COICOP classifies air travel in the 'Transportation' group and hotel accommodation in the 'Restaurants and hotels' group.

PROPOSED NEW SERIES CPI GROUPS

1. FOOD AND NON-ALCOHOLIC BEVERAGES
2. ALCOHOL AND TOBACCO
3. CLOTHING AND FOOTWEAR
4. HOUSING
5. FURNISHINGS, HOUSEHOLD EQUIPMENT AND ROUTINE HOUSEHOLD MAINTENANCE
6. HEALTH
7. TRANSPORT
8. COMMUNICATION
9. RECREATION and CULTURE
10. EDUCATION

COICOP GROUPS

1. FOOD AND NON-ALCOHOLIC BEVERAGES
2. ALCOHOLIC BEVERAGES, TOBACCO AND NARCOTICS
3. CLOTHING AND FOOTWEAR
4. HOUSING, WATER, ELECTRICITY, GAS AND OTHER FUELS
5. FURNISHINGS, HOUSEHOLD EQUIPMENT AND ROUTINE HOUSEHOLD MAINTENANCE
6. HEALTH
7. TRANSPORT
8. COMMUNICATION
9. RECREATION and CULTURE
10. EDUCATION
11. RESTAURANTS AND HOTELS
12. MISCELLANEOUS GOODS AND SERVICES

REFERENCES

Australian Bureau of Statistics 2011, *Australian Consumer Price Index: Concepts, Sources and Methods*, 2011 cat. no. 6461.0, December 2011, ABS, Canberra.

Australian Bureau of Statistics 2009, *Information Paper: Issues to be considered during the 16th Series Australian Consumer Price Index Review*, cat. no. 6468.0, December 2009, ABS, Canberra.

Diewert, W. Erwin 1995, *Axiomatic and Economic Approaches to Elementary Price Indexes*, Discussion Paper no. 95-01, The University of British Columbia, Department of Economics.

National Directorate of Statistics 2012, *Timor-Leste Household Income and Expenditure Survey 2011*, Preliminary report, 2012

International Labour Organization, International Monetary Fund, Organisation for Economic Co-operation and Development, Statistical Office of the European Communities, United Nations, The International Bank for Reconstruction and Development, & The World Bank. 2004, *Consumer price index manual: Theory and practice*, Geneva, International Labour Office.