

GOVERNMENT ALLOWANCE INDEXES SECTION

STATISTICS CANADA

COMPUTATION OF LIVING COST DIFFERENTIAL ALLOWANCE INDEXES

ISOLATED POSTS AND GOVERNMENT HOUSING DIRECTIVE

GENERAL

The Government Allowance Indexes Section, Statistics Canada, is responsible for the computation of indexes of comparative retail prices and living costs and their recommendation to Treasury Board to support the operation of the Isolated Posts and Government Housing Directive (IPGHD). The IPGHD applies to Canadian Government employees, serving at approximately 325 locations in Canada that have been designated as "isolated" under this Directive.

Statistics Canada has no responsibility for the basic policies on which the IPGHD is based, the criteria for determining whether a location is classified as isolated, or the absolute dollar amounts of allowances. These considerations are the responsibility of the Treasury Board Secretariat acting within the framework of ongoing employer - employee, National Joint Council consultations. Statistics Canada's role is to provide general statistical advice to the Treasury Board Secretariat and National Joint Council as required, and to support the day-to-day administration of that particular benefit called the Living Cost Differential Allowance (LCD). It is suggested that this paper be read in conjunction with the Isolated Post and Government Housing Directive (IPGHD) itself.

Members of the Canadian Forces should note that although this paper is written in the specific context of the IPGHD, it has equal application to parallel provisions of the Queen's Regulations and Orders for The Canadian Forces.

NATURE AND PURPOSES OF LCD INDEXES

LCD indexes express the relationship at a given point in time between retail prices of a sample range of goods and services at an isolated post and their prices in one of 7 Canadian "base-cities". The base-city applying to a given post is the city that is determined to be the major source of supply for the majority of posts within that region.

The IPGHD only recognizes five point ranges for compensation purposes. At all times, base-city retail prices are expressed as 100. The following chart demonstrates, if at a particular isolated post, prices are determined to be between 30.0 and 34.9 percent above those at its base-city, the index will be classified as level `4':

Price Index Differential Ranges	IPGHD Classification
190.0 +	16
185.0 - 189.9	15
180.0 - 184.9	14
175.0 - 179.9	13
170.0 - 174.9	12
165.0 - 169.9	11
160.0 - 164.9	10
155.0 - 159.9	9
150.0 - 154.9	8
145.0 - 149.9	7
140.0 - 144.9	6
135.0 - 139.9	5
130.0 - 134.9	4
125.0 - 129.9	3
120.0 - 124.9	2
115.0 - 119.9	1

LCD indexes are used by the employer as an indicator of the level of financial protection against higher retail price levels that is appropriate for payment to employees at an isolated post. The IPGHD currently provides that a post/base-city differential of 15 per cent or more must exist before an allowance is payable. This 15 percent threshold was adopted in recognition of significant price differentials existing between non-isolated locations in Canada. The amount of the allowance is related to the average Canadian family expenditures on the range of goods and services included in the LCD indexes.

The range of good and services included is limited to those categories outlined in the IPGHD as set out by the National Joint Council Committee on Isolated Posts. The indexes include price comparisons for food consumed at home, food away from home (restaurants), household services and supplies (including communications), personal care services and supplies, non-prescription pharmaceutical products, public transportation, automobile operation and maintenance (including snowmobile and/or boat operation), tobacco and alcoholic beverages, audio/video supplies and reading material; some 250 items forming the sample. Price comparisons for individual items are averaged to reflect their relative importance in the base-city.

Several important components of the typical family budget are not included in LCD measurements. Costs associated with shelter, clothing, furniture and vehicle purchase are not taken into consideration.

It should be emphasized that comparative retail price indexes can only consider the comparable prices of things that "can be priced" and "identifiable with a specific quantity of a good or service". Thus, the physical or environmental factors such as remoteness and population size that are considered in determining whether a post will be classified as isolated are not elements in LCD indexes. Recognition of these factors under the IPGHD is the function of the Environment Allowance.

RETAIL PRICE SURVEYS AT ISOLATED POSTS

Retail price surveys that lead either to the establishment of an LCD index or review of one that already exists, are of two types:

- (a) Prices and supporting survey data are collected through a personal visit to a post by a representative of Statistics Canada; or
- (b) Data are collected by means of mail questionnaires. This approach is usually adopted when there is a Statistics Canada visit to the general area in which a particular post is located but not to the post itself.

In either case, a survey has two distinct parts. The:

Consumer Information Schedule (Individual)

This is a questionnaire completed by a representative sample of government employees at the isolated post. Its purpose is to enable Statistics Canada to form a picture of typical post market and purchasing patterns in terms of the kinds of goods and services that are available and where employees are obtaining them. Each respondent is asked to identify normal supply sources for groups of items and if purchases are commonly made from "outside" suppliers, to describe the normal shipping arrangements and carriers' charges that apply. Each individual also is asked, as a resident of the community, to comment on personal experience with local marketing conditions and to describe the procedures he or she follows to adapt buying habits to meet them.

Coordinator's Report (Pricing Schedule)

The Coordinator's report is completed either by a Statistics Canada representative (visit survey), or by the senior officer of a government department represented at the post (a mail survey). The most important element of this report is the Pricing Schedule completed for those retail establishments at the post where employees have reported making purchases.

At larger posts this will involve price collection in several retail outlets while at others one or two stores may represent the complete local market. In extreme cases no local retail stores exist at all. The extent of the local market will of course normally determine the extent of pricing from other locations from which post supplies are obtained. No two locations are identical in this respect. Each must be studied on the basis of the prevailing practices and local market factors reported to Statistics Canada.

The balance of the Coordinator's Report consists of notes and general information about the post that help to explain and clarify any conditions exerting an unusual influence on post living costs.

POST VISITS

Since as many surveys as possible are conducted in conjunction with a Statistics Canada officer's visit, it may be useful to describe the general pattern of these visits.

General plans of impending visits are formulated approximately one year in advance, at which time the Treasury Board Secretariat is notified and asked to comment in the light of policies or plans of which Statistics Canada may not be aware. Employing departments are then notified of the geographic areas that will be covered and the approximate time period during which surveys and visits will be undertaken. Departments are asked to advise Statistics Canada of the numbers of their employees at the posts in question, the names, telephone numbers and functions of their senior post officers, and subsequently to advise their regional officials of full visit details. Employees at regional and post levels are asked to cooperate with Statistics Canada's representatives and to render any forms of assistance in the conduct of the survey that the employing department has agreed to provide.

On arrival at an isolated post, the Survey Officer contacts senior departmental personnel, followed in most instances by a meeting with as many post personnel (and their families) as can be arranged. The purpose of the visit and the survey procedures are explained with particular emphasis being placed on the importance of individual questionnaires (refer to previous page) which are then distributed. A general question and answer period usually follows.

The general discussions frequently range over the whole of the IPD going far beyond those elements for which Statistics Canada has any direct responsibility. This being so, the meetings serve a distinctly dual purpose. On the one hand they greatly assist the Statistics Canada representative in gathering relevant information that can be considered when analyzing measurable price differentials and, it is hoped, they promote better understanding of Statistics Canada's role and of the quality, objectivity and impartiality of the statistical measurements produced. Secondly, they are a forum whereby general concerns and problems associated with life in remote places can be aired with someone who represents "Ottawa". (The Survey Officer may be the only person with whom some employees have ever spoken to who has a general familiarity with the overall purposes and objectives of the IPD). As a result, Statistics Canada is able to fill an on-going advisory role to the Treasury Board, National Joint Council and employing departments that is a sort of by-product of its visits program and specific responsibilities.

Having gathered local retail prices and other survey data, the Survey Officer then proceeds to the base city (see Nature and Purposes of LCD Indexes). The Survey Officer visits representative base-city retail outlets to obtain the prices to which those at the isolated post will be compared. This is a major undertaking since it involves collecting prices in at least one of each major supermarket chain in the city, certain major department stores, and a number of retailers carrying items of particular importance in the north; snowmobile parts for instance. Visits are also paid to mail order firms, transportation companies and wholesalers serving the area under study to confirm prices, shipping tariffs and general market intelligence. At this point, the survey is ready to be processed.

SURVEY PROCESSING AND ANALYSIS

The initial clerical task in processing a survey is to check or make the necessary conversions to ensure that all post and base-city prices represent the same quantities or container sizes and, as far as possible, identical brands. At the same time, data on all Consumer Information Schedules are brought together to form average post buying patterns and in particular to establish the ratios of local purchases to goods "imported" from other than on-site retailers. Freight, packing, handling and other charges, if applicable, are added to the supplier's base price to establish the final "landed cost" to the employee in the case of "imported" items.

A comparative price index is then computed beginning at the individual item, and building up through commodity groupings to a composite number.

At this point the Survey Officer reviews the entire index calculation with responsibility for assessing the statistical reasonableness of the prices that have been compared. Decisions are made on the basis of clarifying comments from individual respondents, the experience growing out of visits to posts, alternative price data from other posts in the general area, and any other evidence available to the Survey Officer that is reliable and current. When the Survey Officer is satisfied that the index reflects the best possible price and living cost comparison, results are recommended to the Treasury Board. Subject to subsequent requests for clarification by the Treasury Board, Statistics Canada has at this point discharged its responsibility, until the next survey is scheduled.

SOME GENERAL COMMENTS

Statistics Canada's role and responsibility for supporting the Isolated Posts Directive is easy to misunderstand by employees and departmental employers alike. Some of the problems brought to the attention of Survey Officers during visits are statistical in nature, while others are concerned with other components of the total IPD package. Although employees are naturally primarily concerned with the end-effect on their paycheck, those who are concerned with the IPD may benefit if some of the following points were given wider consideration.

1. The IPD provides for an **Environment Allowance** in recognition of the physical and social factors that render a location an unattractive place to work and live according to generally accepted criteria. A location must qualify for Environment Allowance to be classified as "isolated" and to be considered for the other benefits that the IPD provides, including the Living Cost Differential.

While there is clearly a high correlation between remoteness of a location and higher retail prices, it does not follow that two locations qualifying for the same level of Environment Allowance will have the same local price levels. Under the present formula employed for classifying posts for Environment Allowance, the existence of a barge shipping season, a winter road, or subsidized freight rates for example, are not considered to lessen a location's isolation. Yet the existence of these can have a marked lowering effect on prices compared to those similarly located or even less isolated location not having those advantages. It follows that entitlement to the Living Cost Differential depends upon actual and measurable price differentials, not on those factors for which compensation is provided by the Environment Allowance.

This distinction represents one of the fundamental concepts on which the IPD is based.

2. The comparative price indexes described in this paper represent a "best estimate" of the percentage by which prices for a specific range of goods and services at an isolated location differ from those for the same items at the base city. The following examples are intended to show the effect of price changes on an existing relationship:
 - (a) Suppose that an LCD index for an isolated post has been determined to be 125 (Base-City = 100) following a survey. Assume that one year later, prices have increased at both the isolated post and the base-city by 6 per cent. The new relationship could be expressed as 132.5 (Base-City = 106) which represents exactly the same differential as before, i.e. $132.5/106 = 1.25$. Despite the fact that absolute prices are now higher at both locations, their relative difference in price levels has not changed because prices increased at the same rate in both locations.
 - (b) Suppose that an item is priced at \$1.50 in the base-city and is 40 per cent higher than at an isolated post; that is \$2.10. Subsequently, the price at the base city increases by 40 cents and at the isolated post by 45 cents. The new differential is now 34 per cent ($\$2.55 / \1.90×100). In this case, absolute prices have increased in both locations with the greater increase at the isolated post. In addition, the percentage of differential arises through prices increasing at different rates. Whether the differential narrows or broadens depends on the difference between the magnitudes of the price changes and the relationship of the original price levels. In other words, 40 cents is a greater percentage increase on \$1.50 than 45 cents is on \$2.10.

It is only in circumstances of the kind described in (b) above that price changes will alter an LCD index once it has been established.

3. The problems of effecting comprehensive and exact measurements of comparative prices between locations (and thus attempting to chart differences in "what it costs to live") are such, that despite longstanding efforts of economists and statisticians throughout the world, wholly satisfactory solutions are yet to be found. Since it has thus far proved impossible to develop a comprehensive measure of comparative living costs between major Canadian cities, Montreal and Toronto for example, it should not be surprising that the more difficult comparisons between isolated communities and large metropolitan centres can fall short of absolute precision. So as not to mislead users and to avoid implication of a degree of accuracy that cannot be achieved, Statistics Canada's agreed commitment from the outset of its involvement in the IPD allowance system, has been to classify posts into 5 point index ranges according to relative retail price and living conditions.