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Work Completed On Time-Consuming Revision

Don't Shoot The C.P.I. — Whether Bringing Good News Or Bad It's The Best Messenger We've Got

ORIGINS OF THE CONSUMER PRICE INDEX AS WE NOW KNOW IT CAN BE TRACED BACK

to the turn of the century. And, as careers go, the run enjoyed by the CPI can only be described as distinctly checkered; not arising from any activities of its originators but because of the abuse it has had to take. Users in the past have manipulated the CPI any which way to try to prove it would support their cause and blow to smithereens the case of their opponents. Trouble was, the CPI was pretty much a sitting duck in its monthly analysis. An honest attempt to establish an impartial measure the Index nevertheless ended up in something of the same position as the fabled tavern piano-player — the victim of more than the occasional potshot.

Less than perfect — and never claiming to be otherwise — the CPI in its own fashion has, however, risen above its imperfections and built a reputation with the general public in spite of all the detractors. Each month it almost certainly kindles more common-denominator recognition among citizens than any other national index and no element of the country's media can afford to fail to report its swings (yes, there are times it drops). Specifically, these are some of the key ways it influences our lives:

- For a great many workers, collective bargaining agreements include cost of living adjustment (COLA) clauses that result in automatic wage adjustments linked to movements in the CPI
- Various benefits, alimony and child support payments plus many other contractual or regulatory arrangements are frequently tied in some manner to the CPI
- Old age security pensions and family allowances are adjusted each year to take into account the changes in the CPI

- Since 1973, personal income tax exemption levels and brackets have been adjusted in accordance with changes in the CPI, thus directly having an influence on what we pay in income taxes.

THE SIMPLEST WAY OF THINKING ABOUT THE CPI IS TO IMAGINE A WIDE-RANGING

basket of selected goods and services of the kind bought by representative urban households. As prices vary, the total cost of this basket varies. The CPI is simply a measure — expressed in relative terms — of the changes in the cost of this basket as the prices of items in it change.

Value of the CPI basket is assigned the number 100 and the value over time is expressed as a percentage of the cost in the base period (currently 1971=100). For example, if the price of the basket had

increased 77% since 1971 the Index would read 177.0.

In total, nearly 400 items which, in turn, offer further eventual breakdown through some 640 "specifications" are included in the basket.

Family expenditure surveys carried out periodically provide information on spending patterns and are used to determine which goods and services should be designated for pricing in the CPI. Our total basket is divided into the following expenditure categories: food; housing; clothing; transportation; health and personal care; recreation, reading and education; and tobacco and alcohol.

These categories are further sub-divided into groups, sub-groups and finally to the item level. For example, "transportation" includes a "private transportation" and a "public transportation" group and the former is further sub-divided into the "automobile purchase" and "automobile maintenance and operation" sub-groups. Within the latter sub-group are included such items as gasoline, car insurance and parking charges.



The Revisors In review, snapped in the prices division library after many months engaged in revision of Canada's Consumer Price Index. From left to right: research officers Keith Hannett, Liz Fushley, Bohdan Szulc, Pierre Gèneux, Anthea Foster, Hugh Scobie. (See p. 3.)

IN ADDITION TO IDENTIFYING THE ITEMS FOR INCLUSION IN

THE CPI, FAMILY expenditure surveys also define the proportion which average spending on *each* item bears to average total spending for *all* items. This is a very important element in the CPI calculation; a five per cent rise in the price of milk, for instance, would normally have a much greater impact on everyday budgeting than even a 50% increase in the price of pepper. This distribution of expenditures or "weights" is essential so that differing item price movements can be combined in a manner which properly reflects their overall impact on the typical family. Every item in the CPI has its own weight — as used in the past and as it will exist in the CPI revision. A comparison of distributions of weights at the major component level shows:

	Previous 1967 weights	Revision 1974 weights
Food	24.8	21.5
Housing	31.4	34.1
Clothing	11.3	10.1
Transportation	15.2	15.8
Health/Personal Care	4.5	4.0
Recreation/ Reading/ Education	6.9	8.3
Tobacco/Alcohol	6.0	6.2

MEASURING IMPACTS OF PRICE CHANGES ON LARGE GROUPINGS OF URBAN FAMILIES

means movements must be monitored where the action is. This calls for a great deal of sampling of supermarkets, specialty shops, department stores, garages, dentists' offices, hairdressers — retailers and service agencies of all types. Bus, rail and air fares, hydro and gas rates, telephone charges and property taxes are collected from the appropriate local or regional utilities and government offices. Rent fluctuations are obtained from a monthly survey of thousands of households in urban areas. Underpinning the CPI is a total of well over 100,000 individual price quotations collected each month in over 50 cities. Pricing cycles start in the latter part of each month and extend to the middle of the following month for most items, including food, clothing, pharmaceuticals and gasoline. Some are priced less frequently: for



Consumer prices section chief Peter Devries keeps prices division director Bernie Lynch and assistant director Denis Desjardins closely informed on every step of the CPI revision.

haircuts and dry cleaning, checks are normally made quarterly; for property taxes, annually. Such goods and services, however, will be priced in any given month when all the signs are that significant price changes may come before the next regularly scheduled pricing.

FOLLOWING RIGID SCREENING OF ALL STATISTICS ENTERING THE CPI CALCULATION

comes the massive undertaking of actually computing them. Simply put, the procedure consists of developing for each item a separate measurement of price change since the base period. The resulting item price indexes are then weighted and aggregated to a total.

For technical reasons item price indexes are calculated in two steps. First, the percentage change is calculated between the average price of the item in the current month and its average price in the preceding month. This one-month price movement must then be linked with the total price movement which has taken place between the CPI's base reference period and the preceding month.

This calculation process is performed at the city-item level. The national calculation for an item involves combining price movements for all cities bearing in mind each city's relative importance for this item in relation to each other.

After each item's separate price index has been calculated they are then aggregated using their respective weights. For example, once the fresh milk index has been computed it's aggregated with other items to arrive at the dairy products index; this index is in turn weighted with other food-at-home index aggregates to yield the total food at home index. Further weighted aggregations eventually result in the all-items CPI.

THE CONSTANT BASKET OF GOODS AND SERVICES IS WHAT THE CPI

AIMS TO MONITOR for price change. For this reason, efforts are made to ensure that identical or equivalent items are priced in successive time periods. However, products may be improved, downgraded, packaged differently — altered in all manner of ways. In the circumstances, the price index-maker must evaluate the effect of quality change separately from price change to arrive at a "pure price" change. Introducing this element into any price index construction is an extremely complex step.

IN GETTING THE CPI IN PERSPECTIVE IT SHOULD BE EMPHASIZED WHAT THE INDEX

is not — it cannot, strictly speaking, be regarded as a cost of living index. No country in the world produces a cost of living index. A cost of living index would include income taxes in the "basket". It would need to take account of the substitutions consumers make in the face of spiralling prices. Consumers may decide to buy more poultry products and less beef when beef prices are the faster rising. Relatively short-run shifts in spending patterns are not taken into account in the CPI although longer-term ones are reflected through the process of revisions.

The CPI is designed to provide a broad measure of the changes in retail prices that urban consumers encounter. It shouldn't be expected to reflect exactly any one family's experience. Families within a group may have different spending patterns and certainly not purchase every single item in the lengthy list of CPI goods and services.

SIXTY MONTHS OF CPIs REPROCESSED BY THE SYSTEMS/OPERATIONS UNIT TO GET REVISION

Since very early 1975, the Prices Division of Statistics Canada has been heavily engaged in the Consumer Price Index revision.

A CPI revision can best be described as a review of the CPI existing at the time with the objective of improving it.

All aspects are considered: the updating of expenditure weights in use, population coverage, geographical coverage, the introduction of new items for pricing, frequency of pricing, the sample of outlets from which prices are collected, review of concepts, review of Index methodologies, the re-design of publications and the development of systems and procedures for implementing changes.



Queen's Grad Heads Systems

One principal figure involved in the CPI revision has been Gerry Fiori, head of the Systems and Operations Unit of the Prices Division. Gerry, 27, a graduate of Queen's University, joined the division in early 1975.

Gerry's main responsibility is for the regular on-going production of the CPI, an onerous task in itself.

But apart from this, and his contributions to the methodological and conceptual projects associated with the revision, Gerry has been heavily involved in implementing the systems developed for the processing of prices and indexes.

Midsummer Night Indexes

On most nights during last summer and this fall, Gerry could be seen in Statistics Canada's computer room poring over the tabulations generated by the system.

By the time the revision was introduced, Gerry and his assistant, Jana Tomcik, had reprocessed nearly 60 months of CPIs.

At the same time, the staff of the development and analysis unit—under the joint direction of Anthea Foster and Bohdan Szulc—were conducting the analysis of the weight changes and the reprocessed CPI results.

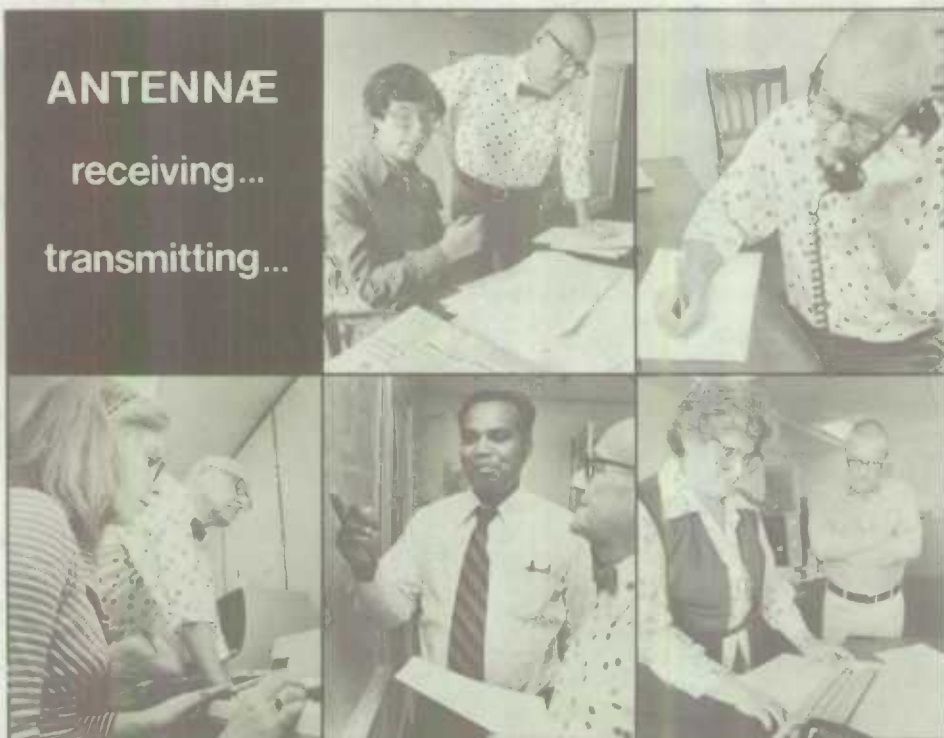


Bohdan Szulc and Anthea Foster put the finishing touches to their draft of the CPI Revision Reference Paper, a document describing the changes in concepts and procedures incorporated in the revising of the Consumer Price Index. Main features resulting from the revision itself are: the 1967 (1969 within Food) expenditure patterns previously in use have been updated to reflect 1974 purchasing habits; consistent with the wide use of the CPI as an escalator of wages and transfer payments, the population coverage to which the CPI weights relate has been expanded to include all urban households living in cities with a population of 30,000 or more to increase coverage from 40% to 70% of all households; the number of cities included in the CPI calculation increases from 34 to 59; the national and city CPIs to be published simultaneously, doing away with an eight-day lag between the publication dates; number of items being priced increases from approximately 325 to 400. The net result of the additional items and expanded city coverage will take the total annual number of prices entering the CPI calculation from 1 million to 1.4 million.

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Monitoring of the public prints has fast been proved an unusually good provider of tips on what price change trends are likely to show up in the Consumer Price Indexes of the months to come. A valuable supplementary service to the prices division's formal research, Sandra Shadlock's incoming flow of information from the business and financial columns stands in opposite juxtaposition to the work of inquiry officer Doug Dexter, who monitors the monitress between sessions of answering phone calls. In any given month, the CPI is guaranteed to spawn hundreds of queries. Scores are handled by Dexter. A municipal administrator calling for the latest price increases for the purchase and operation of automobiles takes Doug first to CANSIM, the Canadian Socio-Economic Information Management System, Statistics Canada's databank. Fellow officer Suzanne Lavoie uses specialist keyboard training to retrieve the data Doug seeks but it's also wise to get the thinking of the boss, information and current analysis unit head Dr. Harold Harnarine, on what additional avenues might yield pertinent data. Responses containing the material requested go out by phone, mail, telex or facsimile. With Vancouver City Hall alerted to stand by for a transmission, Angela Coffie at the Ottawa telecopier puts a speedy final touch to this particular round of activity for Doug Dexter.

Your C.P.I. Front Line Trooper Must Decipher Whole Gamut of Production Line Terminology

EDMONTON — Chances are most people overhearing the phrase "nine iron" would jump to the conclusion the subject under discussion is golf. If the speaker were a Supervisor of Prices you'd likely be wrong — for a Prices Division employee the term can be a measurement of thickness in the shoe trade.

Knowing this kind of term is grist to the mill for your average "infantryman" (or woman) in the front lines of pricing analysis. The life and times of the Prices' Supervisor is like a perpetual reconnaissance, always observing and never mixing his apples with his oranges as it were. A technical term, wrongly deciphered, could literally lead to such confusion.

There's absolutely no question, therefore, that the production line codes of items involved in the price collection for the Consumer Price Index have to be broken and, compared with five or 10 years ago, the market place has become a rapidly changing scene in styles, consumer demands, prices and marketing techniques.

It's imperative that we maintain daily contact with knowledgeable people in the retail trade.

Market intelligence received on a daily basis includes such things as the reasons for a sharp increase in beef prices, why a certain style of garment is no longer being found on the shelves and what metrication packaging trends can be foreseen in the coming pricing periods.

Interviewers "Quality Controlled"

The supervisor of prices assembles data from his team of project managers and field interviewers.

This information is forwarded to Ottawa by the supervisors of regional offices.

It provides the analysts with a picture of the price movements and reasons for them, other changes having a bearing on the marketplace and recommendations for modifications to specifications of items being priced.

A variation in the course of a typical day could include reviewing quality control records of field interviewers, analysing current expenditures, attending management meetings and conferring with Prices management on courses of action.

"Crossovers" Separate Sounds

Training of field personnel occupies a great deal of a supervisor's time due to the vast number of details involved with the price collection of hundreds of items in the CPI.

Understanding the complexity of technical terms associated with these items runs

the gamut from being able to identify a "yoke" on a garment; knowing that "nine iron" is a measurement of leather sole thickness, each iron being 1/48 of an inch; and remembering a "crossover" is an electronic circuit to separate sounds.

Training is a continual process also

because new features and terms are being introduced every day.

The CPI has an impact on nearly all Canadians. Helping to tie it all accurately together each month makes the role of a pricing supervisor a meaningful and very rewarding one.

By John Leach

Pricing Supervisor

Edmonton Regional Office

However, When Index Goes Out Through User Advisory Services Get Set For Forceful Reaction — Plus A Word Of Happiness

By Gerry Finn

Regional Advisor

User Advisory Services

TORONTO — One of the most predictable events on our calendar is the continuous stream of inquiries on the day the Consumer Price Index is released.

The day begins with a brief (three-page) telecopier transmission from the Prices Division at about 8:00 a.m.

This synopsis is usually sufficient to answer the bulk of all the CPI-related calls received during the day.

The Toronto reference centre has five inquiries people on duty every day to answer the 200-300 requests which is a normal load.

On a CPI release day the volume doubles.

For example, when the CPI for July 1978 was released on August 15, 1978, the inquiries officers answered 275 inquiries on the Index alone.

Many of the callers are regulars each month and they are in unions, insurance companies, manufacturing plants, educational institutions, accounting firms, legal offices and the media.

The majority of the callers know what they want and spend only a few seconds on the telephone.

A little longer is required if the request is for the CPI on a 1961 and 1949 base or some other twist.

Officer Veracity, Virtue Queried

Individuals call for personal reasons to see how the change will affect their rent, wages or legal agreement.

One woman calls regularly to determine how her alimony payments will be affected and literally cries about her divorce.

Others respond appropriately with ouch! or hooray! or even 'damn government lies'. Frequently, even the virtue of our inquiries officers is questioned.

One who must have been an Argonaut fan called and asked for the CFL Index.

Questions are not received only on the release day, however, and they are not always brief.

Some callers or visitors want advice on which index to use in a contract or things to consider in escalation clauses.

Users are constantly being educated in the differences between percentage points and index points or how to calculate a percentage change. Currently, concern is being expressed about the announced reweighting of the index and how this will affect labour and other types of contracts.

CPI Kind of "Takes Over"

The CPI rates as our number one subject. It is popular all month long. But no day compares with the release day.

As a matter of fact, the release day becomes almost the exclusive preserve of the CPI — we find it difficult to answer an inquiry on a different subject and *not* give the user the CPI anyway.