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SESSION 2: PRODUCER PRICE INDEX FOR SERVICES

PRODUCER PRICE INDEX FOR COURIERS AND MESSENGERS

Fred Barzyk
Statistics Canada

1. Introduction

Development of a producer price index for couriers and local messengers was undertaken in June 2003 in Prices Division at Statistics Canada (STC). Currently, the series is in development, with a published set of estimates expected in early 2004.

The index is intended to be a monthly measure of the change in the price of courier and local messenger services to business and government. The geographical scope will cover delivery within Canada as well as deliveries destined for other countries.

Much of the development work to date has been based on the activity data coming from the *2000 Survey of Couriers and Local Messengers Industry*, carried out by Transportation Division at STC. This survey collects information on fiscal year estimates of financial and operating statistics for the Canadian Couriers and Local Messengers industry, classified as industry code *492 Couriers and Messengers* under the North American Industrial Classification System (NAICS). The survey collects a sample of couriers from a survey frame of all known carriers and owner-operators classified to the couriers and local messengers industry

This paper highlights the development work carried out on this index series by summarising the output of the industry, the index and sampling methodologies, quality change issues, and on-going challenges. Preliminary results are also included.

2. Industry output

As mentioned, under the NAICS category *492 Couriers and Messengers*, there are two sub-categories—*4921 Couriers* and *4922 Local Messengers and Local Delivery*. The courier industry comprises establishments primarily engaged in providing air, surface or combined courier delivery services. Courier establishments of the Post Office are included as well. The local messengers and local delivery industry is made up of establishments which provide messenger and delivery services of small parcels within a single urban area. Included are the delivery of: letters and documents, such as legal documents, often by bicycle or on foot; and the delivery of small parcels, such as take-out restaurant meals, alcoholic beverages and groceries, on a fee basis, usually by small truck or van.

Of the two sub-industries, couriers account for the largest portion of activity (80% of revenues for NAICS 492). Together, couriers and local messengers accounted for a 0.23% share of real GDP for all of Canada in 2000. The estimated number of courier establishments for that year was 1,893, much less than the 16,936 establishments belonging to the local messengers and local delivery group. Consequently, the courier industry represents a relatively more concentrated industry when compared to local messengers.

The preliminary results of the *Courier and Messengers Services Price Index (CMSPI)*, are presented in Figure 1. For the period of January to August 2003, the CMSPI was on the rise in the first four months, peaking in April at 101.4 and declining afterward. This largely reflects the movement of the couriers alone. For the local messengers, the index jumps in February to 101.7, and remains there until another increase in July (up to 102.4).

3. Index methodology

The index methodology is based on model pricing. In the case of couriers, a detailed set of price specifications covering geography (i.e. origin and destination of service), type of parcel and type of service are followed from month to month (see Table 1).

In determining the geographical specifications, the postal codes for the city halls of the capital city of each province and territory were used as pick-up and delivery points for the domestic traffic, with the exception of Quebec, Alberta and British Columbia. For these provinces, the postal codes for the city halls of Montreal, Calgary and Vancouver respectively, were used. For the international delivery destinations, New York City was chosen to represent the United States, while Mexico City represents Mexico. The cities of origin for the international delivery comprise Halifax, Montreal, Toronto and Vancouver in order to have regional representation. For local messengers, seven cities were chosen to provide a national index.

Another pricing determinant used by couriers is 'dimensional weight', which is a calculation based on length, height and width. The exact formula for dimensional weight will vary somewhat from company to company. If the calculated dimensional weight is greater than the actual package weight, the client is charged at the higher rate.

In discussions with the industry, it was determined that changes in the price level are uniform across all dimensional weight categories. As well, when prices are changed, they are changed uniformly across all geographies. This has important implications for refining the current set of specifications and collection strategy to be more efficient.

When considering type of service, there are two categories—*overnight or next day*, and *other (two days or more)*. The industry will often refer to these as 'express service' and 'ground service' respectively. For local messengers, prices are collected for two types of service, *delivery time of one hour or less*, and *delivery time of three to four hours*.

Prices are collected monthly and cover delivery services only. They exclude taxes and assessorial charges (such as customs brokerage, third party billing or call tag services) and other charges (e.g., cargo services, pick-up service charges, trace charges). The collection source for couriers is primarily the Internet, where individual company rates or pricing schedules are available for downloading. In some cases, 'rate-finders', or online invoice calculators, are used to obtain price estimates. The pricing algorithm used by the major courier companies consists of a base price and fuel surcharge. Base prices are usually set on an annual basis, while fuel surcharges will fluctuate sub-annually. In the case of local messenger, prices are collected by telephone.

4. Weights and sampling

As mentioned, weights are derived mainly from the micro-data obtained through the *2000 Survey of Couriers and Local Messengers Industry*. In the case of couriers, cut-off sampling is used, with the top five companies in Canada being selected to represent the industry. They alone account for 70 to 80% of the operating revenue generated by the courier industry. The weighting and aggregation structure for couriers is presented in Figure 2. For each company, at the lowest level, the geometric mean is calculated for the price relatives for the letter, the 1 kg and 3 kg packages. Next, the shares of revenues based on the type of service (*overnight/next day* versus *other*) are used to aggregate up to the domestic and international destination levels, and then these series are combined to produce the price index for each company. At the company level, the re-calculated shares for each company are used to produce the final price index series for couriers. The re-calculated company shares reflect the relatives shares of total operating revenues for *only the top five companies*.

For local messengers, cut-off sampling was also used, with the larger establishments in several cities being chosen in order to represent each geographic region—the regions being Atlantic Canada, Quebec, Ontario, Western Canada, and British Columbia and the Territories. In terms of aggregation, the structure is much simpler than for couriers. For each local messenger, the geometric mean of price relatives for the two types of service is calculated (*delivery time of one hour or less*, and *delivery time of three to four hours*) to produce a company-level index. The geometric mean for all companies within a region is then calculated and regional weights are applied to arrive at a national index.

Finally, the shares of total operating revenue from delivery services are used to combine the price index for couriers and the price index for local messengers to arrive at the overall index for NAICS *492 Couriers and Messengers*.

5. Issues in maintaining constant quality

Producing a constant quality price index is easier to do for this industry because the characteristics (i.e. specifications and features) of the service being priced are kept constant over time. Any changes in quality that might arise from a change in the terms or characteristics of the service offered will be assessed judgementally (i.e. on a case-by-case basis). For example, some courier companies have a coverage amount included in their service to provide for the loss or damage of goods while in transport. Changing the provision (either the amount or terms) amounts to a change in quality, which would be incorporated in the index. Typically for this industry, changes to the service features are rare and minor.

6. Price measurement challenges

Given the level of development so far, work remains on several aspects of the index. Research is being carried out on 'account pricing', that is the different treatment business clients receive upon signing a contract with a courier company. From the results to date, account pricing makes comparability difficult, since the effective prices that account holders pay will vary according to a number of conditions set out in the contract (e.g. expected number of parcels sent in a year).

Further research into the pricing behaviour of the industry may lead to efficiencies in the collection of price data. For instance, some local messengers change their pricing quarterly or even less often, implying that resources saved in collecting less frequently could be used to expand the sample. Finally, obtaining more detailed information about what types of parcels are sent can help improve the precision of the index.

Table 1 - Description of Pricing Specifications

Specification	Details
1. Geography	1. Province/territory to province/territory 2. Region (East, Quebec, Ontario and West) to the United States and Mexico
2. Type of Parcel Using Dimensional Weight	1. Business letter 2. 1 kg box 3. 3 kg box
3. Type of Service	1. Next day/overnight 2. Two days or more

Figure 1 - Courier and Messengers Services Price Indexes (January 2003=100)

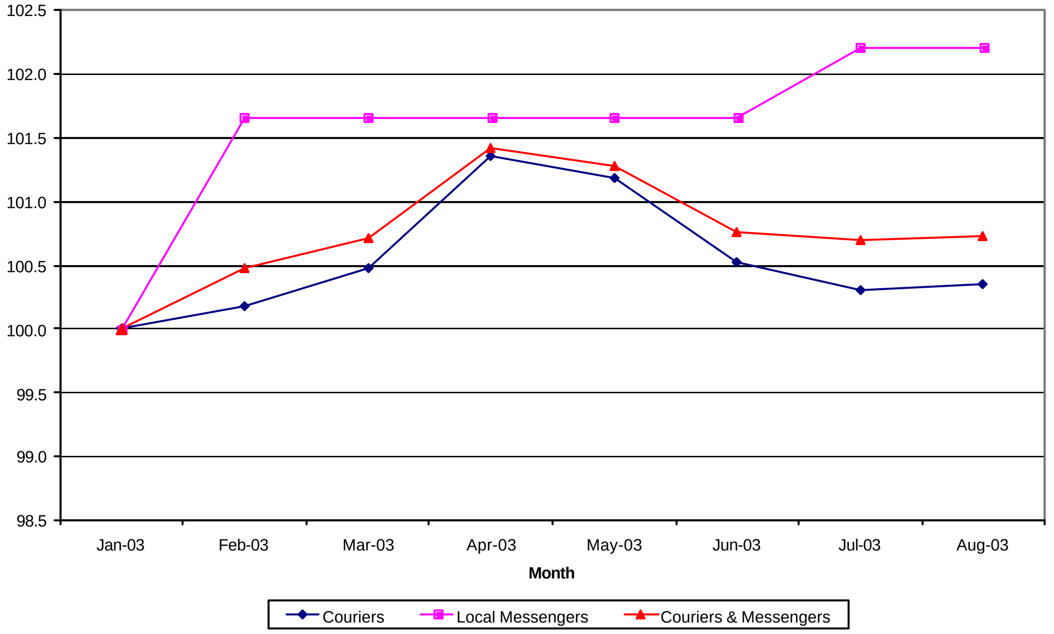
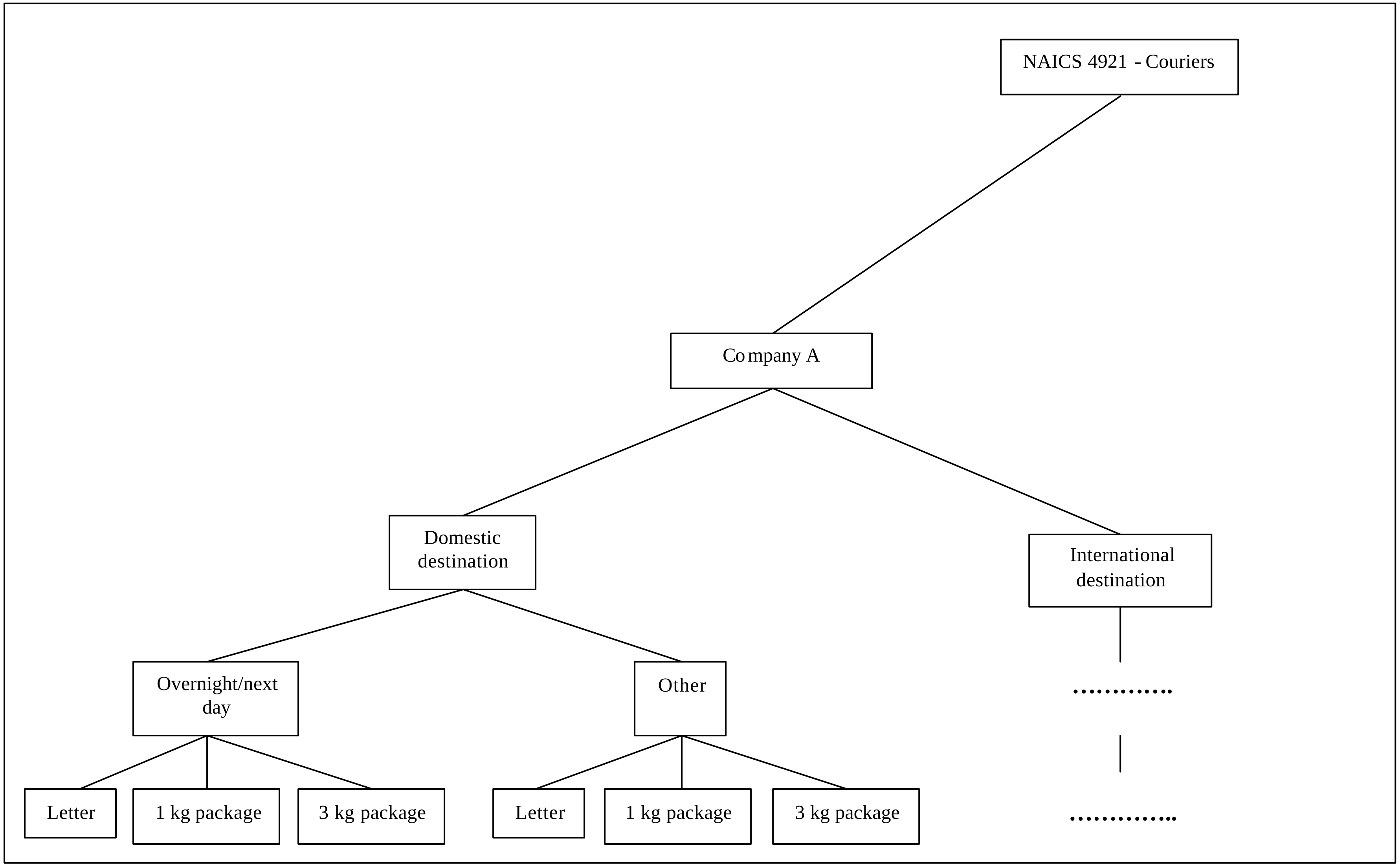


Figure 2 – Aggregation Structure for the Courier Service Price Index



NAICS 4921 - Couriers
Company A
Domestic destination
International destination
Overnight/next day
Other
Letter
1 kg package
3 kg package
Letter
1 kg package
3 kg package
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