

## **Labour Productivity Measures, Provinces and Territories (Annual)** **- Estimation -**

There is no unique labour statistics program at Statistics Canada that provides measures of hours worked consistent both conceptually and with respect to coverage with the CSNA. The CPA fill this void. Although the labour statistics produced by the CPA are the result of the integration of data from a variety of surveys and statistical programs, they can be reconciled with the aggregate series produced by the LFS.

Data on hours worked by category of jobs and by industry for each province and territory constructed by the CPA are derived from the product of the number of jobs and the average number of hours worked per job estimated on the basis of two different, albeit, complementary approaches.

At the aggregate level, data on jobs and hours worked per job for each province and territory and by category of workers (paid workers, self-employed with paid help and self-employed without help) are derived mainly from the LFS after some adjustments for multiple job holders and unpaid absentees. To make the coverage of labour input consistent with that of GDP, the LFS data are supplemented with Census data to estimate the interprovincial flows, the SEPH data to estimate the northern territories and native reserves, the labour statistics program of the Public Institution Division to estimate armed forces established in Canada, civil employees and armed forces operating outside Canada. The combination of these data sources provides the benchmark on jobs and hours worked.

Data on jobs and hours per job necessary to construct hours worked by industry, by province and territory and by category of jobs are obtained from a variety of surveys. The data sources for jobs vary depending of the category of jobs. The primary source for paid workers is SEPH, supplemented by LFS for industries that are not part of SEPH coverage (agriculture, fishing and trapping, religious organizations and private households) or for which SEPH is not entirely reliable (construction, retail trade, food and accommodation). For the self-employed, the information on jobs result from a combination of LFS for major industry groupings and the Census of population for the industry detail.

Data on average hours up to a four-digit industry level are obtained from LFS. In case where LFS does not provide a sufficient level of industry detail, the additional industry breakdown is obtained from SEPH. The information of which is benchmarked to the corresponding LFS industry grouping.

The result of this process is a matrix with integrated information on jobs and hours worked. The respective wages and salaries from LFS and SEPH are appended to the matrix to derive average wages and salaries and hourly wage rates that will be compared to those constructed implicitly by dividing wages and salaries from the Input-Output table by the number of jobs and hours worked of this matrix.

The comparison between these implicit rates with those available from the surveys makes it possible to adjust or to correct, if necessary, the allocation of jobs and hours worked by industry as well as their growth over time. In general, adjustments to this allocation are made when large discrepancies are observed for wages and salaries between the surveys and the input-output tables. These adjustments are substantiated with evidence on start up or shut down of businesses, layoffs, strikes, and power outages that lead to irregular jobs patterns as well as retroactive payments of wages and salaries, annual bonuses and severance which drive large and sudden changes in wages and salaries. Once the reconciliation with input-output wages and salaries is completed, the number of jobs and hours worked are benchmarked to the aggregate level.

The CPA constructs data on labour compensation, a concept that better captures the value of labour services provided by all workers. Labour compensation is comprised of labour income of paid workers (wages and salaries and supplementary labour income) compiled by the Input-Output Tables and labour income of self-employed imputed by the CPA (see Imputation above).

The data on jobs, hours worked and compensation are not only available by industry but also for major sectors of the CSNEA. Data for the non-business sector are derived from the information provided by the labour statistics program of Public Institutions on government jobs while those for non-profit institutions serving households are partially imputed. Data for the business sector are obtained as the difference between the aggregate series that constitute the benchmark and those for non-business.

For more details, see additional documentation and see "Annual Measures of the Volume of Work Consistent with the SNA: the Canadian Experience", Methodology Paper Series: National Accounts, Catalogue No. 11F0026MIE2005005.