Labour Productivity Measures, National (Quarterly) – Estimation

Labour productivity, hourly compensation and unit labour cost are expressed as indexes derived from three variables: chain-weighted output, hours worked and labour compensation for all workers. The estimation method employed to arrive at these ratios varies according to the level of aggregation (whole economy or industry).

Quarterly output for the whole economy is a final demand Fisher chain-weighted GDP at market prices. It is conceptually similar to the one used for the aggregate business sector, albeit with differences in terms of coverage. The business sector GDP excludes non-commercial activities and the rental value of owner-occupied dwellings.

Quarterly output by industry is the Fisher chain-weighted value added at basic prices following the North American Industry Classification Systems (NAICS).

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.

Quarterly data on hours worked result from the product of the number of jobs and the average number of hours worked, each of which is constructed following different methods. Data on jobs result from a series of adjustments that account for multiple job-holders, unpaid absentees, etc. performed on the employment series collected by the LFS. The same source of information is used to compile the data on average hours worked.

To arrive at an estimate of jobs that covers the whole economy, the number of jobs constructed from the LFS is augmented by those in armed forces and native administrations. The data on average hours per person obtained from the LFS are corrected for the bias that arises from holidays and special events.

The number of jobs for the business sector results from the difference between the estimates obtained for the total economy and those of the non-business sector. The latter is comprised of the government sector and the non-profit institutions serving household. Data on jobs for the government sector and non profit institutions servicing households are obtained, respectively, from the labour statistics program of the Public Institutions Division and a combination of the SEPH and LFS.

Data on jobs and hours worked by industry for paid workers are constructed from LFS and SEPH. The data on jobs and average hours worked for other

categories of workers are compiled from the LFS. The data on jobs and average hours worked constructed at the industry level are then benchmarked to those obtained for the aggregate business sector.

Quarterly data on labour income for paid workers (wages and salaries and supplementary labour income) for the two-digit industry groupings are obtained from the labour income program of the Income and Expenditures Accounts Division. A more detailed industry breakdown is derived for these data using SEPH industry detail. The data for the construction sector are then adjusted to reflect own-account construction treatment in the Input-Output Tables. This adjustment ensures consistency between data on jobs and hours worked with those on output, wages and salaries. The imputed labour income data of self employed workers are then added to labour income of paid workers to arrive at labour compensation, a notion more adequate for productivity analysis.

Finally, the quarterly indexes of jobs, hours worked and labour compensation are benchmarked to the corresponding annual indexes produced by the provincial program of the CPA (see record number 5103). The benchmarking process takes place in two steps, during the release of the first quarter for the whole economy and during the third quarter for the industries of the business sector.