

The Australian Bureau of Statistics (ABS) has utilised its Wage Price Index (WPI) data to construct or supplement Producer Price Indexes (PPIs) for selected service industry classes.

For specialised services where repeated transaction prices are not available on a consistent basis and which cannot be priced to constant quality, the OECD SPPI manual recognises the use of time based pricing methods.

## Key service industry characteristics for pricing methods based on wage rates:

Wage costs are a significant input cost

- Wage costs are a key price determining factor for some industries.
- Ratio of wages and salaries to sales and service income must be sufficiently high enough to be a key determinant in pricing.

Services provided are diverse and unique

- The ideal pricing method is directly collecting repeated transaction prices from businesses.
- Where services are specialised, collecting consistent and comparable transactions is not viable.
- Examples include legal or engineering consulting, where services are tailored on a case by case basis

Services which are priced using an hourly charge out rate

- Certain services are priced using an hourly charge out rate.
- A charge out rate is composed of the labour cost and the firms overheads + a profit margin (which is generally a relatively constant mark up on costs).
- Changes in wage rates are a key factor in determining the charge out rate.

## Methodology and Compilation

### Data Source

- WPI collect hourly rates of pay and hours worked information relating to a fixed set of jobs from a sample of businesses.
- Each quarter the WPI team provide a dataset of matched job samples (approximately 2,300 obs) for selected ANZSIC classes.

### Processing

- Wage data is converted into price relatives, and then aggregated to class level prices indexes using geometric mean.
- WPI data processed by a SAS program which edits and applies quality measures within 1-2 hours of receipt.
- The calculated price indexes are then input into price aggregation system to contribute to the higher level price indexes.

### Compilation

- Wage price based indexes were constructed for 21 classes representing a range of service industries.
- The classes were selected based on prices being linked to wages, and sufficient job and unit samples being available in the wage price dataset.
- Results were analysed and recommendations for implementation presented. Wage based price indexes are currently being implemented for 7 ANZSIC classes.
- Other remain under review

### Advantages

- Significant increase in PPI sample size at close to zero cost
- Reduced variability in PPI output
- Data already edited by WPI
- WPI samples have good State and size range coverage
- Reduces provider burden by stopping overlap between the two surveys or by retiring PPI providers
- A confrontation source for PPI

### Disadvantages

- Pricing methods based on working time do not account for changes in productivity
- Changes in utilisation rates may change charge out rates (but not necessarily prices)
- Changes in company margins are not reflected in the price index
- Pricing methods based on working time generally exhibit positive bias over time

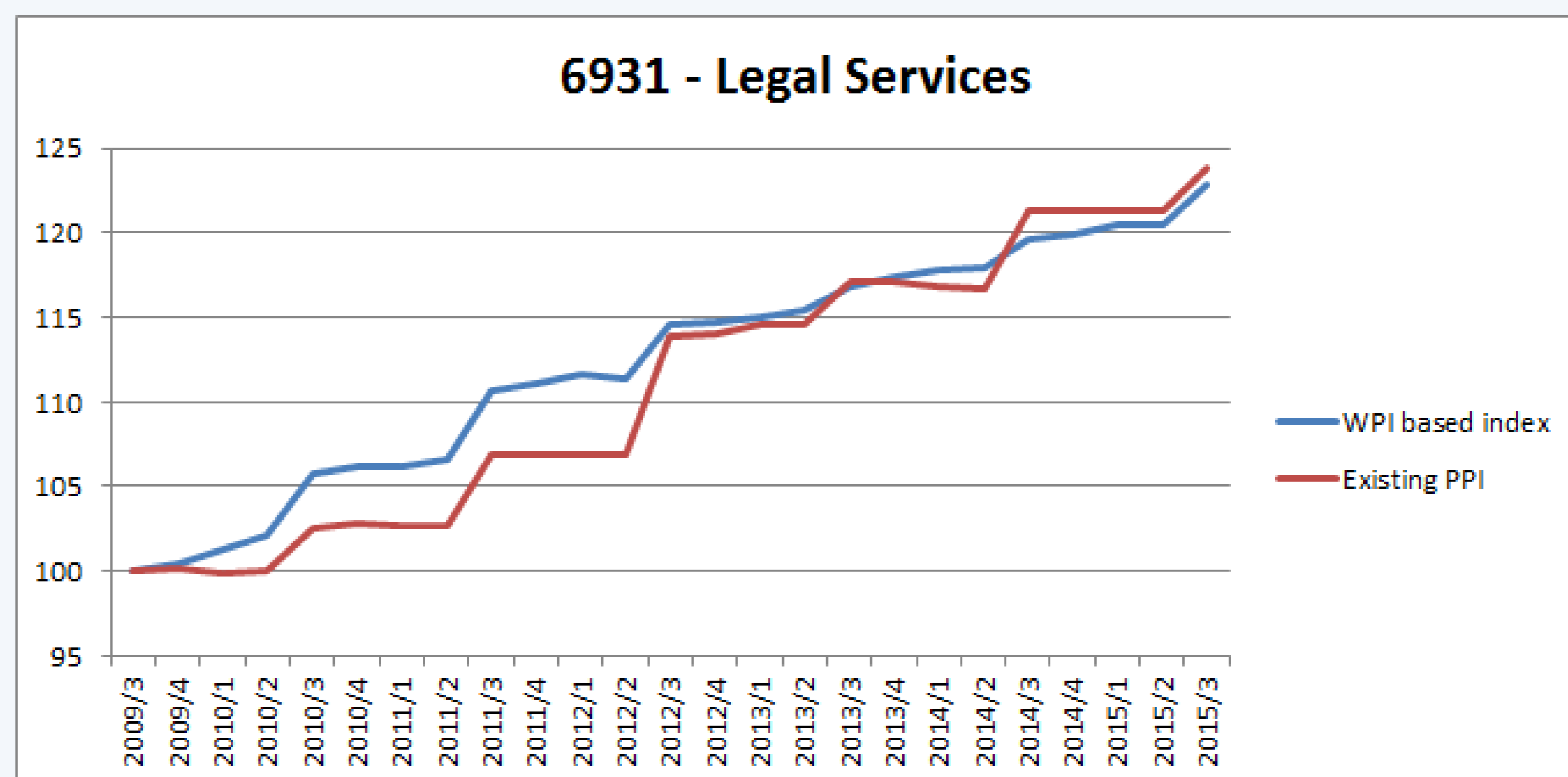
Class	Implementation
Other Mining Support Services	Full: no previous PPIs
Non-residential Building construction	Under review
Other Heavy and Civil Engineering Construction	Partial: supplement
Site Preparation Services	Under review
Concreting Services	Under review
Electrical Services	Under review
Air-Conditioning and Heating Services	Under review
Carpentry Services	Under review
Scientific Research Services	Full: replacement
Engineering Design and Consulting Services	Partial: supplement
Legal Services	Full: replacement
Accounting Services	Confrontation source
Management Advice and Consulting Services	Partial: supplement
Computer Systems Design and Related Services	Under review
Employment Placement and Recruitment	Full: use aggregate WPI
Labour Supply Services	Partial: Under review
Office Administrative services	Partial: under development
Building and Other Industrial Cleaning Services	Partial: supplement
Automotive Body, Paint and Interior Repair	Partial: Under review
Other Automotive Repair and Maintenance	Partial: Under review
Hairdressing and Beauty	Not required – use CPI proxy

Review and implementation of WPI based indexes was on a **Class by Class basis**, depending on suitability

## Results:

- Wage based price indexes showed good correlation with PPIs that already use wage based information and/or charge out rates in their calculation.
- Where the larger WPI sample overlapped with the PPI sample, units were retired from the PPI collection whilst at the same time increasing the overall sample.
- For the Legal Services example below, the PPI currently collected is an hourly charge out rate. The PPI and wage price based index track well and show annual increases in Sept qtr. The PPI has 11 respondents and 60 samples whereas the WPI has 20 respondents and 140 job samples.

### Legal Services



**Conclusion:** WPI based indexes can be used to provide full or partial coverage of a range of industries at the Class level, as well as providing a confrontation source against existing PPI indexes.