A Note on the Incorporation of Hours-Worked Hours Paid-Ratios from the Employment Cost Index into Hours at Work Measures

Beginning with the August 2003 Productivity and Costs news release, measures of hours at work used in the calculation of quarterly productivity measures will incorporate information from the Employment Cost Index (ECI) of the National Compensation Survey to convert hours paid to hours at work. In 2000, The Bureau of Labor Statistics terminated the Hours at Work Survey (HWS) that was also designed for the same purpose. This note explains why the HWS was terminated and the ECI was chosen as a source for a substitute measure, how ECI-based measures differ from the HWS measures, and describes how the news measures were linked to the HWS measures to create a consistent series.

A Short Summary of the Hours at Work Survey

Prior to 1989, the hours measures used to calculate productivity were constructed using the hours paid of employees from the Current Employment Statistics Program (CES) supplemented with hours worked on proprietors and others from the Current Population Survey. The resultant measure was conceptually closer to an hours paid measure of labor input. Productivity measures, however, ideally compare output to the actual resources used. This means that only the hours of workers actively engaged in production should be counted and paid leave should be excluded.

In 1982, the Hours at Work Survey began collection of hours at work and hours paid for non-agricultural establishments. The design of the survey was to construct a ratio of hours worked to hours paid for production and nonsupervisory employees so that hours paid measures from the CES could be adjusted to reflect solely the number of weekly hours employees were actually at work. In 1989, information from the Hours at Work Survey and historical data from other periodic surveys were incorporated into the hours measures used in the quarterly labor productivity measures and annual measures of multifactor productivity.[1]

As early as 1991, some shortcomings in the Hours at Work Survey were becoming apparent. An internal review noted that the survey form was designed to collect data from payroll records, but computer assisted telephone interviews (CATI) of non-respondents to the survey form too often resulted in leave practices for a hypothetical "typical" employee. CATI responses comprised from a third to as much as half of all usable responses. Definitions for production and nonsupervisory employees were not always clear and payroll records for very large establishments and those without computerized records often were not accessible in a form that made reporting easy and accurate. Revisions to the CATI follow-up stopped this practice and only collected data based on payroll records. Revisions to the survey form improved the clarity of instructions and removed unnecessary questions to reduce respondent burden. With the more stringent reporting requirement, however, the response rate declined to just over half of the sample and response analysis surveys continued to show that some respondents had difficulty determining which employees should be included in the report.

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[1] "Hours at Work: A New Base for BLS Productivity Statistics," by Mary Jablonski, Kent Kunze, and Phyllis Flohr Otto, *Monthly Labor Review*, February 1990.

With the decline in response rate, the number of usable responses especially in detailed manufacturing industries fell to unacceptable levels. Industry ratios exhibited increasing volatility and increased variance. As a result, it became difficult to distinguish between underlying shifts and statistically insignificant random variation in the ratios.

An investigation of alternative sources of these data began. The Employment Cost Index (ECI) of the National Compensation Survey is designed to measure the hourly cost of wages and benefits for a set of occupations within establishments. One portion of the hourly costs is the value of paid leave. To determine the value of paid leave, information on work schedules, overtime hours, leave plans, paid holidays and actual sick leave are collected. While the ECI data were not designed for this purpose, ratios of hours at work to hours paid (HWHP) can be constructed from the ECI data as the ratio of the value of paid work time to the sum of the value of paid leave and paid work time.

HWHP ratios from the ECI differ conceptually from those based on the HWS. Ratios from the HWS are designed to measure actual leave taken in a calendar year and compare it to hours paid over the same period. Unpaid leave and unpaid work hours are not reported. The Hours at Work Survey samples non-agricultural establishments to collect information on all production and nonsupervisory employees. Ratios from the ECI represent a combination of actual leave and leave practices. When an occupation within an establishment is initially selected for the ECI, a person-to-person interview is conducted to select an actual incumbent for that occupation and collect information about the pay and benefits that person received. In addition to information about leave practices and paid holidays, information is collected on the actual amount of paid sick leave taken in the last reference period. Depending on the establishment's record keeping, that reference period could be a month, quarter or year. In subsequent interviews, establishments are asked if the pay practices have changed. If they did not, the previous paid leave figures are used. If pay practices did change, information is collected on the changes. Establishments overwhelmingly report that pay practices did not change from one quarter to the next.

Staff from the Office of Compensation and Working Conditions and the Office of Productivity and Technology investigated the use of ECI-based ratios for productivity measurement. The research determined that ratios could be developed that reasonably resembled the HWS ratios in concept, scope and quality and the decision was made to terminate the HWS survey.

Comparing Measures from the Hours at Work Survey and the Employment Cost Index

Hours at work ratios from 1988 to 2000 are reported for production and non-supervisory employees.[2] Tables 1 and 2 separately report ratios by SIC industry. For nonfarm industries, the Hours at Work survey ratios are consistently but only slightly higher than the ECI-based ratios. For specific industries, the ratio from the Hours at Work survey is consistently higher in mining, finance, insurance and real estate (FIRE) and the services industry.   The ratios from the two surveys also differ appreciably in communications.

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[2] We are especially grateful to Tom Moehrle for developing and producing the hours at work ratios from the ECI. Anthony Barkume led the original research into how the define and measure hours at work ratios using ECI data.

Table 3 reports the ratio of the HWS to the ECI-based figure and helps focus on the largest differences. Those ratios that differ by more than two percentage points are highlighted in gray. While the Hours at Work Survey reports consistent and higher ratios for mining, the large number of discrepancies in communications appears to be the result of fluctuations in the ratios reported by the HWS. In the Productivity and Cost News release, BLS reports productivity and hours measures for nonfarm business and durable and nondurable manufacturing. At this level the two data sources imply very similar ratios. It is unknown if this implies that most employees use almost all of the leave they earn or if the HWS survey primarily collected leave practices despite its intent to collect actual leave behavior.

One clear difference between the two surveys is in the volatility of the ratios. Annual changes in the ECI based ratios are smaller than changes in the HWS ratios. As noted above, the Employment Cost Index collection methods differ from the Hours at Work Survey. As establishments enter the ECI survey, personal interviews are conducted to measure the amount of annual leave earned, the number of paid holiday and the actual amount of sick leave taken in the recent past for a specific person in a designated occupation. For the remainder of the time an establishment is part of the ECI survey, telephone interviews are conducted. Interviewers ascertain if paid leave plans have changed. If they have, new information is collected. If they have not, the paid leave rate from the initial interview is used. Overwhelmingly, establishments report that their leave plans have not changed for the entire time they are part of the survey. Not surprisingly then, hours at work ratios based on the ECI are quite stable from one period to the next. Ratio changes occur primarily because establishments are rotated into and out of the survey over the course of the year and ratios for entering establishments can differ from exiting establishments. Furthermore, the ECI is designed to report for a fixed mix of occupations. This is desirable for the ECI's goal of measuring a "pure" change in the cost of labor, but does not reflect changes in leave practices due to a shift in the mix of occupations, tenure and work schedules which will usually lead to larger shifts in the hours at work ratio. The Hours at Work Survey (HWS) conducts a retrospective survey mailed to 6000 establishments. In contrast to the ECI, the Hours at Work Survey does not control for shifts in the mix of employment and so it is not surprising that the HWS ratios exhibit larger annual changes. In addition, the declining response rate of the HWS also would be expected to increase the volatility of the ratios.

Tables 4 and 5 report changes in annual ratios for the two surveys. Statistically significant annual changes are highlighted in gray. For the ECI-based figures, the changes are quite small and almost none are significant. For the HWS survey, the changes are consistently larger and more than half of the ratios are significantly different from the previous year. Statistical tests confirm the pattern in these tables that changes in the ECI ratios are significantly smaller. Despite that, long term trends for the two series are very similar. Finally Table 6 confirms that changes in the ratios differ between the two series for some industries, but that these differences cancel out at nonfarm industry level. Significantly different changes in ratios are highlighted in gray and are concentrated in six industries, mining, transportation services, communications, electric, gas and sanitary services, wholesale and retail trade.

Based on these tables, it is clear that ratios of hours at work to hours paid from the ECI are quite similar in level to those from the HWS. Long term trends are also very similar as neither series shows a significant change in the nonfarm ratio between 1988 and 2000.

Incorporation of hours-worked hours-paid ratios from the ECI into the Productivity and Costs hours at work measures

Beginning with data reported in the August 2003 Productivity and Costs news release, hours-worked hours-paid ratios derived from the ECI for the first quarter of 2001 through the first quarter of 2003 are used to develop hours at work measures used in the calculation of productivity and related series. Historical data from the Hours at Work Survey are used for all years prior to 2001. To maximize the continuity of the data, quarterly changes in the ECI ratios are linked to fourth quarter 2000 data from the HWS ratios to move the series forward in time.

The Productivity and Costs news release reports quarterly hours at work and productivity measures for business, nonfarm business, nonfinancial corporations, manufacturing, and durable and nondurable manufacturing. Hours at work ratios are applied at approximately the 1-digit SIC level outside of manufacturing and for durable and non-durable manufacturing industries within manufacturing. Historical ratios from the HWS have been converted to the North American Industrial Classification system (NAICS) for business and nonfarm business. Nonfinancial corporations and manufacturing data will be converted to the NAICS system in January 2004. This conversion had a trivial effect on the nonfarm business measure of hours at work prior to 2001.

Ratios derived from the ECI have been developed on both an SIC and NAICS basis. Each ECI-based industry series was linked to the HWS series in the fourth quarter of 2000. Outside of manufacturing, hours at work ratios from the ECI are based on all employees since the HWS ratio for nonsupervisory employees was applied to all employees. Within manufacturing, separate ratios from the ECI were linked for production and non-production workers. Again, this is consistent with the HWS treatment of applying different ratios to the two groups. Quarterly changes in the ECI-based ratios from the fourth quarter of 2000 to the first quarter of 2003 have been appended to the fourth quarter level of the ratio from the HWS survey. Data for the second quarter of 2003 are not yet available and the ratios are held constant at their first quarter value. This is consistent with previous treatment of the HWS ratios that have been held constant since the fourth quarter of 2000 when the survey was terminated. The impact on aggregate hours at work from extending the data through the first quarter of 2003 is minor as the nonfarm business ratio for all employees has shifted from .929 in the fourth quarter of 2001 to .927 in the first quarter of 2003 (Table 7).

Because the HWS uses actual leave taken rather than leave practices and moving rather than fixed weights and because of differences in sampling methods by occupation, industry and work schedule, the level of the hours-worked hours paid ratio from the HWS is preferred. Hence, the decision was made to link changes in the ECI-based data to the HWS level of the hours at work ratio rather than the reverse.

Nevertheless, the ECI based ratios have some advantages over the HWS ratios especially as an extension to the historical HWS series. First, ECI-based ratios are available quarterly and will be incorporated much more quickly into the Productivity and Cost release. For example, it is expected that hours at work ratios for the second quarter of 2003 will be made available in September and incorporated into the preliminary measures of the Productivity and Cost news release in November 2003. Previously, hours at work ratios from the HWS for 2000 were incorporated into the measures in February 2002.

Second, the HWS survey covered only production and nonsupervisory workers in nonagricultural establishments. Ratios for nonproduction and supervisory workers were not available. Instead, the ratio for production and nonsupervisory workers was applied to all nonfarm employees outside of manufacturing and an adjusted ratio was used in manufacturing based on EEEC data.[3] The ECI-based data covers all workers, providing better quality data on nonproduction and supervisory workers[4].

Third, the annual HWS ratios were converted to quarterly data using a Denton interpolative method, while no corresponding procedure is needed for the quarterly ECI-based ratios. Accordingly, it is expected that quarterly movements from the ECI better reflect quarterly changes in economic behavior.

Finally, the ECI-based ratios are developed from a larger sample than the HWS-based ratios. The ECI currently samples about 37000 occupations within 8500 private establishments while the HWS samples from less than 6000 establishments. Given the higher response rate and very comparable ratios to the Hours at Work survey, the ECI provides a high quality data source for converting hours paid to hours at work.

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[3] See Jablonski, Kunze, and Otto for a description of how ratios were developed for nonproduction workers.
[4] Future research will examine if information from the ECI-based ratios can be used to adjust historical data for nonproduction and supervisory workers prior to 2001.

Table 1. Employment Cost Index ratios of hours at work to hours paid for production and non-supervisory workers

Year	Nonfarm Industries	Mining	Construc-tion	Non-durables	Durables	Trans-portation services	Commu-nications	Electric and gas service	Wholesale Trade	Retail Trade	FIRE	Services
1988	0.925	0.915	0.968	0.915	0.910	0.909	0.882	0.879	0.921	0.952	0.907	0.919
1989	0.925	0.919	0.967	0.915	0.910	0.910	0.881	0.878	0.920	0.952	0.905	0.920
1990	0.926	0.936	0.966	0.921	0.910	0.909	0.879	0.877	0.924	0.953	0.904	0.920
1991	0.926	0.928	0.965	0.920	0.909	0.908	0.880	0.877	0.926	0.954	0.904	0.920
1992	0.928	0.926	0.968	0.920	0.908	0.908	0.886	0.883	0.925	0.954	0.906	0.926
1993	0.929	0.930	0.968	0.920	0.906	0.910	0.883	0.884	0.926	0.956	0.910	0.926
1994	0.930	0.912	0.968	0.918	0.912	0.916	0.883	0.883	0.928	0.959	0.910	0.926
1995	0.931	0.910	0.967	0.917	0.913	0.921	0.883	0.884	0.931	0.960	0.909	0.927
1996	0.932	0.908	0.966	0.914	0.913	0.922	0.896	0.883	0.932	0.961	0.909	0.926
1997	0.932	0.918	0.969	0.916	0.914	0.922	0.903	0.881	0.930	0.961	0.910	0.927
1998	0.930	0.917	0.970	0.918	0.915	0.923	0.897	0.882	0.929	0.961	0.910	0.928
1999	0.933	0.912	0.969	0.920	0.916	0.924	0.896	0.880	0.929	0.960	0.911	0.927
2000	0.932	0.907	0.968	0.920	0.914	0.927	0.891	0.882	0.926	0.960	0.909	0.926

Source: Developed by the Office of Compensation and Working Conditions
    for the Office of Productivity and Technology, Bureau of Labor Statistics, U.S. Department of Labor

Table 2. Hours at Work Survey ratios of hours at work to hours paid for production and non-supervisory workers

Year	Nonfarm Industries	Mining	Construc-tion	Non-durables	Durables	Trans-portation services	Commu-nications	Electric and gas service	Wholesale Trade	Retail Trade	FIRE	Services
1988	0.931	0.926	0.978	0.918	0.918	0.918	0.879	0.855	0.947	0.948	0.909	0.926
1989	0.938	0.935	0.987	0.923	0.917	0.916	0.890	0.888	0.942	0.965	0.913	0.936
1990	0.935	0.940	0.977	0.924	0.914	0.917	0.885	0.878	0.932	0.951	0.908	0.943
1991	0.930	0.931	0.981	0.918	0.910	0.903	0.882	0.882	0.926	0.951	0.904	0.937
1992	0.931	0.927	0.978	0.921	0.913	0.910	0.877	0.886	0.939	0.951	0.910	0.932
1993	0.933	0.937	0.976	0.922	0.918	0.889	0.894	0.884	0.920	0.954	0.919	0.937
1994	0.933	0.922	0.975	0.921	0.916	0.901	0.898	0.872	0.932	0.959	0.913	0.933
1995	0.938	0.941	0.975	0.923	0.914	0.926	0.912	0.895	0.942	0.958	0.920	0.939
1996	0.932	0.942	0.965	0.922	0.915	0.924	0.887	0.884	0.924	0.952	0.914	0.932
1997	0.934	0.932	0.971	0.921	0.914	0.911	0.882	0.896	0.923	0.959	0.932	0.933
1998	0.934	0.933	0.965	0.913	0.911	0.915	0.879	0.887	0.943	0.943	0.921	0.945
1999	0.937	0.941	0.967	0.925	0.918	0.930	0.932	0.899	0.930	0.955	0.928	0.934
2000	0.934	0.939	0.971	0.920	0.914	0.921	0.916	0.885	0.937	0.943	0.912	0.941

Source: Bureau of Labor Statistics, U.S. Department of Labor

Table 3. Ratio of HWS to ECI hours at work ratios for production and non-supervisory workers

Year	Nonfarm Industries	Mining	Construc-tion	Non-durables	Durables	Trans-portation services	Commu-nications	Electric and gas service	Wholesale Trade	Retail Trade	FIRE	Services
1988	1.0063	1.0126	1.0105	1.0037	1.0083	1.0103	0.9970	0.9730	1.0287	0.9959	1.0027	1.0079
1989	1.0137	1.0170	1.0209	1.0090	1.0077	1.0063	1.0107	1.0118	1.0241	1.0139	1.0084	1.0173
1990	1.0096	1.0041	1.0114	1.0032	1.0047	1.0092	1.0065	1.0017	1.0085	0.9983	1.0044	1.0250
1991	1.0039	1.0037	1.0162	0.9976	1.0007	0.9946	1.0025	1.0057	0.9996	0.9973	1.0004	1.0179
1992	1.0030	1.0014	1.0108	1.0016	1.0055	1.0027	0.9904	1.0039	1.0147	0.9964	1.0040	1.0067
1993	1.0043	1.0072	1.0083	1.0020	1.0131	0.9766	1.0121	1.0005	0.9937	0.9979	1.0102	1.0119
1994	1.0028	1.0115	1.0074	1.0035	1.0045	0.9832	1.0169	0.9870	1.0044	0.9997	1.0034	1.0075
1995	1.0070	1.0336	1.0078	1.0070	1.0016	1.0049	1.0329	1.0125	1.0113	0.9978	1.0120	1.0131
1996	1.0005	1.0370	0.9986	1.0085	1.0025	1.0022	0.9895	1.0016	0.9911	0.9911	1.0057	1.0062
1997	1.0017	1.0155	1.0017	1.0053	0.9995	0.9882	0.9765	1.0169	0.9922	0.9984	1.0247	1.0065
1998	1.0040	1.0174	0.9949	0.9945	0.9956	0.9908	0.9798	1.0061	1.0156	0.9817	1.0121	1.0186
1999	1.0043	1.0320	0.9979	1.0048	1.0025	1.0062	1.0400	1.0214	1.0008	0.9947	1.0184	1.0073
2000	1.0021	1.0351	1.0036	1.0005	0.9997	0.9941	1.0282	1.0038	1.0123	0.9819	1.0029	1.0157

Source: Bureau of Labor Statistics, U.S. Department of Labor

Table 4. Annual Change in ECI hours at work ratios for production and non-supervisory workers

Year	Nonfarm Industries	Mining	Construc-tion	Non-durables	Durables	Trans-portation services	Commu-nications	Electric and gas service	Wholesale Trade	Retail Trade	FIRE	Services
1989	0.000	0.005	-0.001	0.000	0.000	0.002	-0.001	-0.001	-0.001	0.000	-0.001	0.001
1990	0.001	0.017	-0.001	0.006	0.000	-0.002	-0.001	-0.001	0.004	0.001	-0.001	0.000
1991	0.000	-0.009	-0.001	-0.001	0.000	-0.001	0.001	0.000	0.002	0.001	0.000	0.000
1992	0.002	-0.002	0.002	-0.001	-0.002	0.000	0.006	0.006	-0.001	0.000	0.002	0.006
1993	0.001	0.005	0.000	0.001	-0.001	0.003	-0.002	0.001	0.000	0.002	0.004	0.000
1994	0.001	-0.019	0.000	-0.002	0.006	0.006	0.000	0.000	0.002	0.003	0.000	0.000
1995	0.001	-0.001	0.000	-0.001	0.001	0.005	0.000	0.001	0.004	0.001	-0.001	0.001
1996	0.000	-0.002	-0.001	-0.002	0.000	0.001	0.014	-0.001	0.001	0.000	0.000	-0.001
1997	0.001	0.009	0.003	0.002	0.002	0.000	0.007	-0.001	-0.002	0.000	0.001	0.001
1998	-0.002	-0.001	0.001	0.002	0.001	0.002	-0.006	0.001	-0.002	0.000	0.000	0.001
1999	0.003	-0.005	-0.001	0.002	0.001	0.001	-0.001	-0.002	0.001	0.000	0.001	-0.001
2000	-0.001	-0.005	-0.001	-0.001	-0.001	0.002	-0.005	0.002	-0.003	0.000	-0.002	-0.001

Source: Bureau of Labor Statistics, U.S. Department of Labor

Table 5. Annual Change in HWS hours at work ratios for production and non-supervisory workers

Year	Nonfarm Industries	Mining	Construc-tion	Non-durables	Durables	Trans-portation services	Commu-nications	Electric and gas service	Wholesale Trade	Retail Trade	FIRE	Services
1989	0.007	0.009	0.009	0.005	-0.001	-0.002	0.011	0.033	-0.005	0.017	0.004	0.010
1990	-0.003	0.005	-0.010	0.001	-0.003	0.001	-0.005	-0.010	-0.010	-0.014	-0.005	0.007
1991	-0.005	-0.009	0.004	-0.006	-0.004	-0.014	-0.003	0.004	-0.006	0.000	-0.004	-0.006
1992	0.001	-0.004	-0.003	0.003	0.003	0.007	-0.005	0.004	0.013	0.000	0.006	-0.005
1993	0.002	0.010	-0.002	0.001	0.005	-0.021	0.017	-0.002	-0.019	0.003	0.009	0.005
1994	0.000	-0.015	-0.001	-0.001	-0.002	0.012	0.004	-0.012	0.012	0.005	-0.006	-0.004
1995	0.005	0.019	0.000	0.002	-0.002	0.025	0.014	0.023	0.010	-0.001	0.007	0.006
1996	-0.006	0.001	-0.010	-0.001	0.001	-0.002	-0.025	-0.011	-0.018	-0.006	-0.006	-0.007
1997	0.002	-0.010	0.006	-0.001	-0.001	-0.013	-0.005	0.012	-0.001	0.007	0.018	0.001
1998	0.000	0.001	-0.006	-0.008	-0.003	0.004	-0.003	-0.009	0.020	-0.016	-0.011	0.012
1999	0.003	0.008	0.002	0.012	0.007	0.015	0.053	0.012	-0.013	0.012	0.007	-0.011
2000	-0.003	-0.002	0.004	-0.005	-0.004	-0.009	-0.016	-0.014	0.007	-0.012	-0.016	0.007

Source: Bureau of Labor Statistics, U.S. Department of Labor

Table 6. Difference between HWS and ECI in annual changes in hours at work ratios for production and non-supervisory workers

Year	Nonfarm Industries	Mining	Construction	Non-durables	Durables	Transportation services	Communications	Electric and gas service	Wholesale Trade	Retail Trade	FIRE	Services
1988												
1989	0.007	0.004	0.010	0.005	-0.001	-0.004	0.012	0.034	-0.004	0.017	0.005	0.009
1990	-0.004	-0.012	-0.009	-0.005	-0.003	0.003	-0.004	-0.009	-0.014	-0.015	-0.004	0.007
1991	-0.005	0.000	0.005	-0.005	-0.004	-0.013	-0.004	0.004	-0.008	-0.001	-0.004	-0.006
1992	-0.001	-0.002	-0.005	0.004	0.004	0.007	-0.011	-0.002	0.014	-0.001	0.003	-0.010
1993	0.001	0.005	-0.002	0.000	0.007	-0.024	0.019	-0.003	-0.019	0.001	0.006	0.005
1994	-0.001	0.004	-0.001	0.001	-0.008	0.006	0.004	-0.012	0.010	0.002	-0.006	-0.004
1995	0.004	0.020	0.000	0.003	-0.003	0.020	0.014	0.022	0.006	-0.002	0.008	0.005
1996	-0.006	0.003	-0.009	0.001	0.001	-0.003	-0.039	-0.010	-0.019	-0.006	-0.006	-0.006
1997	0.001	-0.019	0.003	-0.003	-0.003	-0.013	-0.012	0.013	0.001	0.007	0.017	0.000
1998	0.002	0.002	-0.007	-0.010	-0.004	0.002	0.003	-0.010	0.022	-0.016	-0.011	0.011
1999	0.000	0.013	0.003	0.009	0.006	0.014	0.054	0.013	-0.014	0.013	0.006	-0.011
2000	-0.002	0.003	0.006	-0.004	-0.003	-0.011	-0.011	-0.015	0.011	-0.012	-0.014	0.008

Source: Bureau of Labor Statistics, U.S. Department of Labor

Table 7. Ratios of hours at work to hours paid for all employees by NAICS sector, 2000 -2003

	2000 IV	2001 I	2001 II	2001 III	2001 IV	2002 I	2002 II	2002 III	2002 IV	2003 I
All Private Industries	0.929	0.927	0.928	0.928	0.927	0.927	0.927	0.927	0.927	0.927
Durable Mfg.	0.910	0.908	0.908	0.907	0.907	0.908	0.908	0.908	0.908	0.907
Non-durable Mfg.	0.917	0.915	0.915	0.915	0.913	0.914	0.913	0.912	0.911	0.911
All Non-manufacturing	0.933	0.931	0.932	0.931	0.931	0.931	0.931	0.931	0.930	0.931

Source: Bureau of Labor Statistics, U.S. Department of Labor

Note: Hours-worked hours-paid ratios reported in this table are from the Employment Cost Index and are aggregated using employment weights. Ratios used in the calculation of productivity measures are developed from the same data but at a more detailed industry level. Resultant higher level ratios are aggregated using hours weights and may differ very slightly from those contained in this table.