

Fact Sheet

Published by Applied | Economic | Strategies, LLC

May 17, 2011

Fact Sheet No. 2011-2

Employee Compensation Continues To Grow With Productivity

By D. Mark Wilson

Contention: *During the Great Prosperity of 1947-1977, the basic bargain had ensured that the pay of American workers coincided with their output. In effect, the vast middle class received an increasing share of the benefits of economic growth. But after that point, the two lines began to diverge: Output per hour – a measure of productivity – continued to rise. But real hourly compensation was left in the dust.*

Former Labor Secretary, Robert B. Reich, May 12, 2011

Fact: The Link Between Greater Productivity and Higher Compensation Is Not Broken. As Chart 1 shows, when appropriately adjusting hourly compensation with the same price index that is used with the productivity measure in order to compare apples to apples and not oranges, the increase in real hourly compensation closely tracks the increase in productivity over time.¹ The contention that the “basic bargain” or “social contract” between employees and employers is broken is simply not true.

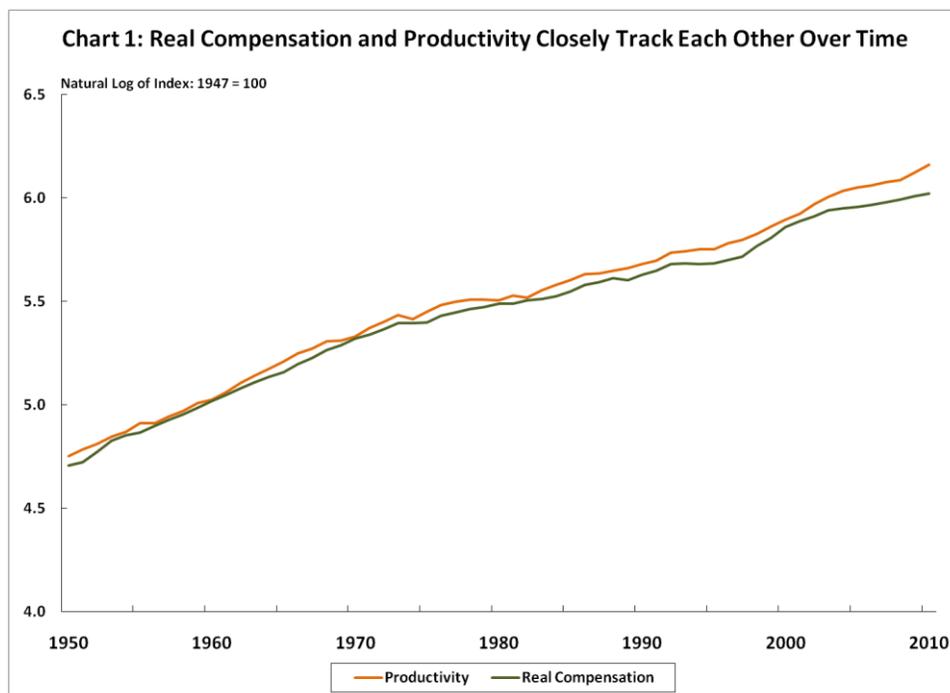
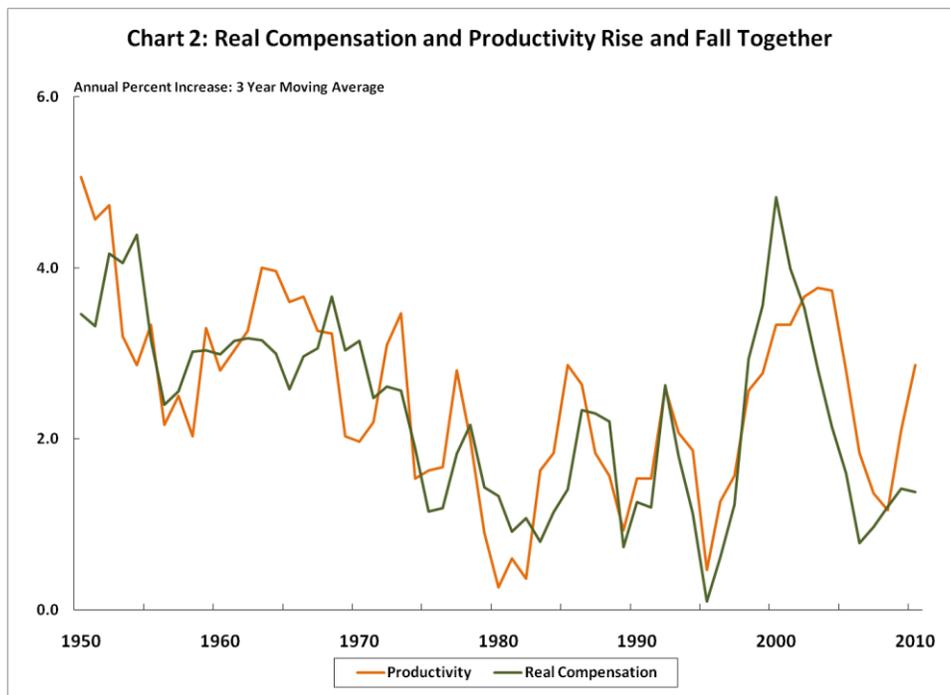


Chart 2 shows that changes in real hourly compensation closely track changes in productivity growth over time. The structural slowdown in both productivity and compensation from 1970 to 1982 is evident, as well as the characteristic business cycle up and down pattern. Clearly, there are periods where compensation grows faster than productivity and vice-versa, but over the long-term the two measures track fairly closely. During the recent recovery productivity has been growing faster than compensation, which is typical of this point in the business cycle.



Although the productivity and compensation trends appear to diverge a bit after 2003 (Chart 1), this is accounted for by the impact of technology on productivity growth and the increasing use of capital compared to the contribution of labor.² Moreover, compensation and productivity trends have diverged at times in the past and have reverted back to their long-run trends. Some of the recent widening of the gap between compensation growth and productivity growth from 2008 to 2010 (Chart 2) reflects the impact of the recession and is unlikely to be sustained.

The Bureau of Labor Statistics also attributes part of the recent divergence to the falling share of output accounted for by employees' compensation³ as technology has transformed the way work is done. From 1995 to 2000, businesses increased their capital services inputs by 6.0 percent per year while the amount of labor hours increased by only 2.2 percent per year.⁴ Then from 2000 to 2007, this trend continued as labor hours increased by just 0.1 percent per year while capital services increased by 3.2 percent per year.⁵ Since 1995, the resulting increase in the amount of technology and capital that goes into producing goods and services relative to the amount of labor that is used has naturally changed the amount of national income that flows to these inputs.

Fact: Skill-biased Technology Is Primarily Responsible for Widening Wage Disparities.

According to the Organization for Economic Co-operation and Development (OECD), since 1985, the widening wage disparities in industrialized countries have come from technological progress and global competition.⁶ The main reason the salaries of higher earners rose faster than those of lower earners over the past two decades in all of the OECD countries was the large shift in demand for high-skilled employees and away from low-skilled labor that resulted from technological progress, innovation, and global competition. The trend was also linked to changes in working hours: While average annual hours worked fell a little on average, those for lower-paid employees declined far more than those for the higher-paid. Moreover, the OECD found that wage disparities are widening not only in the United States, but also in Finland, Sweden, Germany, and Denmark; countries that have much higher tax rates, stronger unions, and more generous social welfare programs.

According to the Congressional Budget Office, “the most important source of widening dispersion in the top half of the wage distribution between 1979 and 2009 was growth in the wages of college graduates compared with those of high school graduates.”⁷ Technological innovations and related organizational changes (skill-biased technological change) are responsible for most of the increased demand for workers with more education and skills. Most importantly, these technologies decreased the relative demand for workers doing routine cognitive work typical of “middle-skilled” jobs and increased the relative demand for highly skilled workers doing more complex analysis.

Specifically, since 1980, the microchip and related technologies have complemented non-routine cognitive work (such as analysis, evaluation, and decision-making), thereby increasing the demand for highly skilled, more educated employees who perform those tasks.⁸ On the other hand, these technologies have reduced the demand for routine cognitive work (such as typing, filing, and repetitive manufacturing processes), thereby holding down demand for employees that perform those tasks; while having little impact on the demand for routine manual work that must be done in a specific location or involves interacting with people (e.g., janitors, waiters, and home health aides).

Moreover, the U.S. education system hasn’t been turning out enough people with the math and science skills needed to operate and repair sophisticated computer-controlled factory equipment, jobs that often pay \$50,000 to \$80,000 a year, plus benefits.⁹ In the most recent comparison of math and science test scores of 15-year-old students by the OECD, American students trailed far behind those from China, Japan, South Korea, Canada and Germany.¹⁰ Significantly, not everyone needs to have a four-year college degree. Large and small U.S. manufacturers of everything from machine tools to chemicals are searching high schools, community colleges and the military for potential hires.¹¹

Conclusion: Although the “basic bargain” or “social contract” between employees and employers is alive and well, the world has dramatically changed over the past 30 years. The use of technology to improve productivity has become a permanent business strategy for managing costs in an increasingly competitive world. However, this does not mean that middle-class job opportunities in the United States are destined to disappear. From 2008 to 2018, service-providing industries are projected to add 14.6 million jobs, or 96 percent of the increase in total employment, and over 65 percent of these jobs provide middle-class incomes.¹² While no one can be certain what the future will bring, as long as America continues to innovate it will certainly create new industries and middle-class job opportunities.

¹ The Bureau of Labor Statistics official measure of real compensation is adjusted for inflation using the consumer price index while productivity is adjusted for inflation using the implicit price deflator from the Bureau of Economic Analysis. The impact of using these two different price indexes is significant and can skew the conclusions drawn from comparing the two measures. See: Susan Fleck, John Glaser, and Shawn Sprague, *The Compensation-Productivity Gap: A Visual Essay*, Bureau of Labor Statistics, *Monthly Labor Review*, January 2011, Chart 4, available at: <http://www.bls.gov/opub/mlr/2011/01/art3full.pdf>. recognizes the impact of using

² Bureau of Labor Statistics, *Multifactor Productivity Trends – 2009*, Table B, March 30, 2011, available at: www.bls.gov/news.release/pdf/prod3.pdf. According to the BLS, of the 2.6 percent growth rate in private nonfarm business labor productivity for the 2000-2007 period, 1.0 percent can be attributed to the contribution of capital intensity and 1.4 percent can be attributed to multifactor productivity which measures the joint influences of technological change, efficiency improvements, returns to scale, reallocation of resources, and other factors on economic growth, allowing for the effects of capital and labor.

³ Susan Fleck, John Glaser, and Shawn Sprague, *The Compensation-Productivity Gap: A Visual Essay*, Bureau of Labor Statistics, *Monthly Labor Review*, January 2011, Chart 5.

⁴ Bureau of Labor Statistics, *Multifactor Productivity Trends – 2009*, Table A, March 30, 2011.

⁵ *Id.* From 1995 to 2010, the increasing use of technology (capital) caused labor’s share of nonfarm business output to fall from 62 percent to 58 percent. This increase in technology and capital also resulted in the owners of capital earning an increasing share of national income in the United States

⁶ Organization for Economic Co-operation and Development, *Growing Income Inequality In OECD Countries: What Drives It and How Can Policy Tackle It?*, May 2, 2011, available at: <http://www.oecd.org/dataoecd/32/20/47723414.pdf>.

⁷ Congressional Budget Office, *Changes in the Distribution of Workers’ Hourly Wages Between 1979 and 2009*, February 16, 2011, available at: <http://www.cbo.gov/ftpdocs/120xx/doc12051/02-16-WageDispersion.pdf>

⁸ *Id.*

⁹ James R. Hagerty, *Help Wanted on the Factory Floor*, *Wall Street Journal*, May 6, 2011, available at: <http://finance.yahoo.com/career-work/article/112693/help-wanted-factory-floor-wsj>.

¹⁰ *Id.*

¹¹ *Id.*

¹² Bureau of Labor Statistics, *Table 1.6 Occupational Employment and Job Openings Data, 2008-18, and Worker Characteristics, 2008*, available at: http://www.bls.gov/emp/ep_table_106.htm.