



Gauging Current Conditions: The Economic Outlook and Its Impact on Workers Compensation

The gauges below indicate the economic outlook for the current year and for 2007 for factors that typically impact workers compensation. Each gauge also provides some context for the outlook, relative to a historical average of the previous five years.

Slowing Job Growth May Foster Continued Frequency Declines

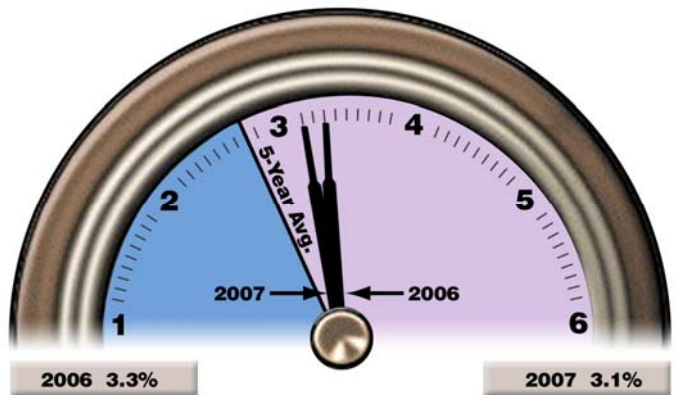
Job growth is expected to slow somewhat in 2007, consistent with what typically occurs in a maturing economic expansion. That slowing may reduce upward pressure on claim frequency to the extent that fewer less trained workers are added to payrolls. The actual direction of claim frequency will depend on the balance between such employment-related effects and a wide range of other forces that have contributed to the ongoing decline in frequency since the early 1990s.



Private Sector Employment Growth Slowing

Continued Wage Gains Suggest Further Increases in Indemnity Severity

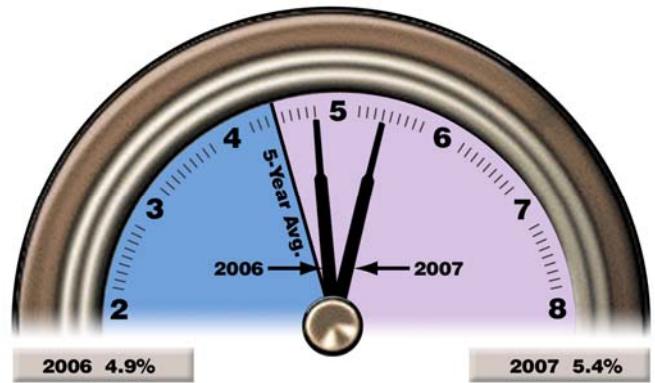
Wage gains are expected to average a bit over 3% this year and next, reflecting tightening labor markets as well as a partial flow-through to workers of the ongoing increases in productivity. The rise in wages suggests further increases in indemnity severity since indemnity benefits are tied to wage growth in most states.



Average Weekly Wages Continue to Rise

The Quickening Pace of Medical Care Prices Suggests Further Increases in Medical Severity

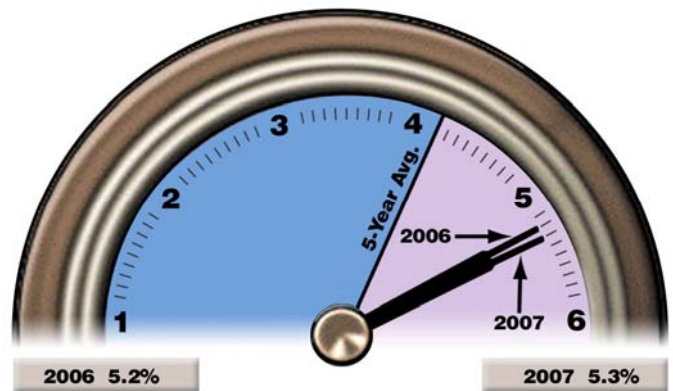
Medical care price inflation shows no signs of abating, with increases in the medical care component of the Consumer Price Index (CPI) expected to average 4.7% in 2006 and 5.5% in 2007. Those increases are likely to be reflected in additional upward pressure on medical severity.



Medical Care Price Increases Continuing

Firming Interest Rates in 2006–2007 Suggest Better News on Investment Income

The Federal Reserve continued to ratchet up short-term rates throughout 2005 and into 2006. Longer-term yields have also begun to move higher. Prospects of continued-but-slowing economic growth suggest a less aggressive stance by the Federal Reserve, although additional upward pressure on rates is likely due to the increasing credit needs of the economy. Higher yields will provide a boost to fixed-income returns on newly invested funds. The effect of higher yields on the stock market is less certain. However, if earnings remain upbeat, higher yields may not stand in the way of carriers achieving realized capital gains on their stock portfolios. (The “gauge” shows the rate of the seven-year Treasury note because the average maturity of Treasury securities held by P&C carriers is roughly seven years.)



Interest Rates Rising

Behind the Gauges

Real Gross Domestic Product (GDP)

Growth in 2006 is expected to be at a healthy pace, at about its long-term average. The US economy is currently benefiting from ongoing productivity gains, an improving outlook abroad (which helps US exports), and still-low inflation and interest rates. Some moderation in growth is forecast for 2007, as rising cost pressures from the ongoing expansion and resulting further increases in interest rates slow growth in consumer spending, housing, and business investment.

This forecast suggests some upward pressure on claim frequency, which tends to rise during periods of economic expansion. Whether frequency will, in fact, turn higher depends on the extent to which such expansion-related pressures will be offset by the ongoing improvements in workplace safety that have contributed to the pervasive decline in frequency since the early 1990s.

Economic Growth Drivers

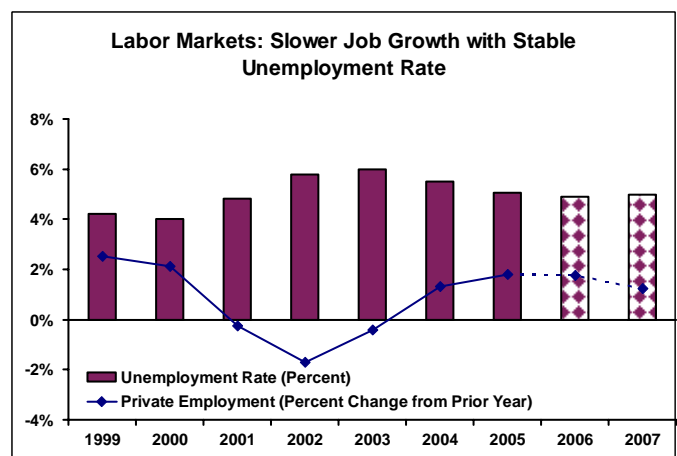
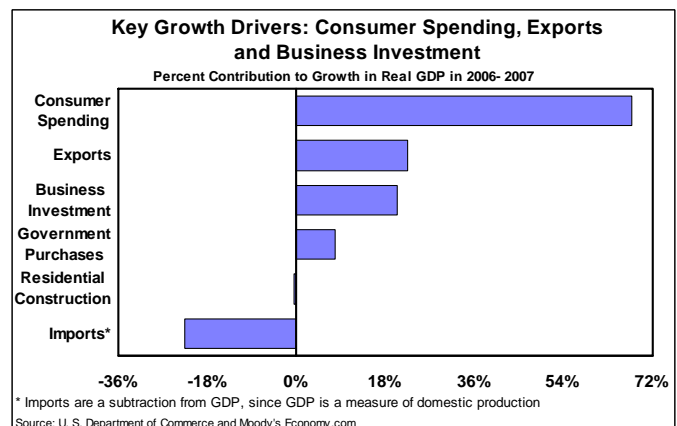
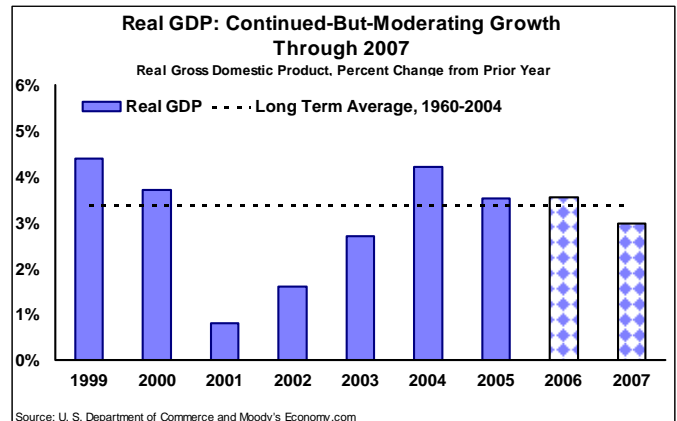
Consumers account for roughly two-thirds of spending in the economy, and they are expected to be the key contributor to growth through 2007. Exports, business investment (in both equipment and structures), and government purchases of goods and services are also expected to provide ongoing support to the expansion. In contrast, residential construction will provide a slight drag, as higher financing costs curtail the demand for new construction. (Both residential and nonresidential construction are key sectors for workers compensation because of their more hazardous nature.)

Continued strong demand for imports will be the largest drag on GDP growth. That is because spending on imports (which is included in consumer spending and business investment) is treated as a negative factor in measuring GDP, since GDP measures *domestic* production.

Labor Markets

Labor markets have tightened recently because healthy job growth (averaging about 200,000 jobs per month in 2005) has contributed to ongoing declines in the unemployment rate. Prospects for 2006 are for more of the same, with some slowing in wage growth (and firming in the unemployment rate) expected in 2007.

All of this suggests that the exposure base for workers compensation will be increasing in the years ahead. Moreover, there may also be some additional upward pressure on both indemnity severity and frequency. Severity may rise as a result of a faster pace of wage gains (reflective of reduced labor-market slack), while frequency may increase as increased numbers of newly hired workers reduce the experience level of the workforce.



Inflation

The Consumer Price Index (CPI) increased 3.4% in 2005, up from 2.7% in 2004. Last year's rise largely reflected the effects of sharply higher oil prices. Excluding the more volatile energy and food sectors, "core inflation" was a still-low 2.1% in 2005 (vs. 1.4% in 2004). Overall price increases are expected to decline somewhat in 2006 (as oil prices back off a bit during the second half) and then ease further in 2007, as slower growth reduces demand pressures.

Less sanguine is the news on medical inflation, where the medical care component of the CPI is expected to increase 4.7% in 2006 and 5.5% in 2007, after a 4.2% rise in 2005. Although not ideally suited as a measure of medical care inflation in workers compensation, the forecasted increases in the medical CPI suggest ongoing upward pressure on medical severity in the years immediately ahead.

Interest Rates

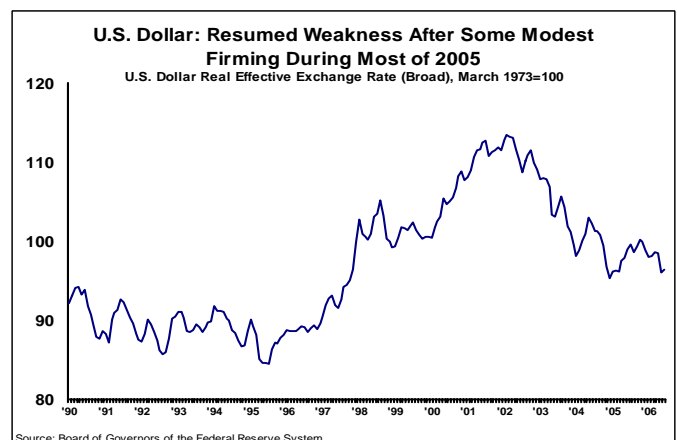
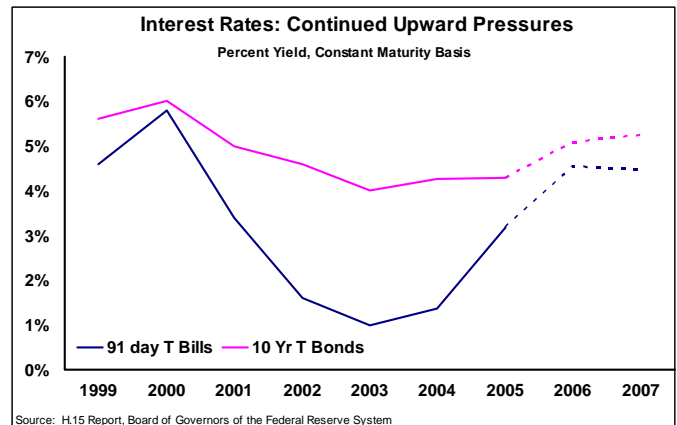
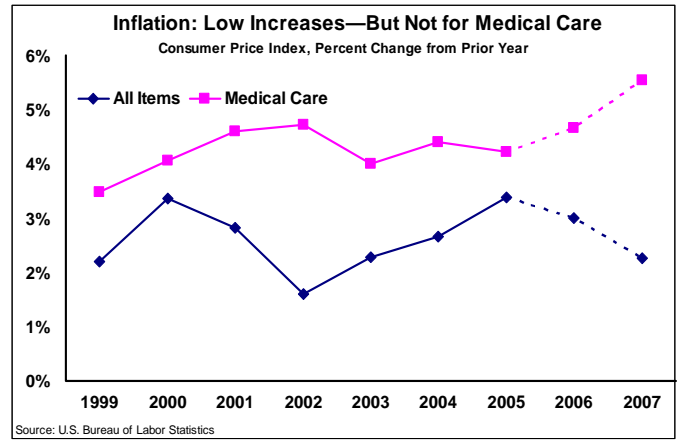
Repeated tightening by the Federal Reserve has led to a sharp rise in short-term interest rates, with the rate on 91-day Treasury bills averaging 3.2% in 2005 vs. 1.0% in 2003 (the rate at the end of May 2006 was 4.9%). In contrast, long-term yields have edged higher, in part reflecting the effect on rates of substantial purchases of US securities from abroad (in no small part a consequence of the massive US trade deficit). Both short- and long-term rates are expected to post further increases this year and next, the result of additional tightening by the Federal Reserve as well as heightened demand for credit from the ongoing expansion.

Rising interest rates will boost investment income of P&C insurers on their new investments. At the same time, however, the market value of long-term securities held in P&C portfolios will be reduced. As noted previously, exposure in the housing sector is also likely to decline because rising mortgage rates curtail residential building activity.

Dollar Exchange Rate

The dollar has weakened recently on foreign exchange markets (shown here on a trade-weighted and inflation-adjusted basis) after some modest but short-lived firming during most of 2005. Subsequent dollar movements will depend on a number of factors, including differences in anticipated rates of return as well as shifting mixes of assets and liabilities in portfolios abroad.

From a workers compensation perspective, changes in the dollar's value are likely to most directly impact exposure in trade-intensive manufacturing industries. In addition, to the extent that changes in foreign asset holdings impact US interest rates, that will also affect prospects for overall economic growth and employment.



Implications

What is the outlook for manufacturing? This paper presents a close look at employment, output, and productivity trends in this important sector, along with implications for workers compensation.

Ever go shopping, look at the label of origin and wonder, “is anything made here anymore?” Judging from the stories in the media, the US manufacturing sector has been largely outsourced, with productive facilities and jobs going to lower-cost nations in Asia, especially China.

The actual situation, as with most economic matters, is not always what the headlines suggest. As shown in Exhibit 1, although manufacturing employment has been weakening since 1980, manufacturing output has been trending decidedly higher, rising at a 2.6% average annual rate. Indeed, after some sluggishness in 2001–2003, related to the last recession and the initially slow pace of the current expansion, manufacturing output recently has been rising at an average annual rate of nearly 4.5%.

Viewed another way, even as the share of manufacturing employment has declined, from 25% in 1980 to 13% in 2005, manufacturing output as a share of real GDP has remained relatively steady—averaging 14% in the 1980s and 13% so far into the current decade.

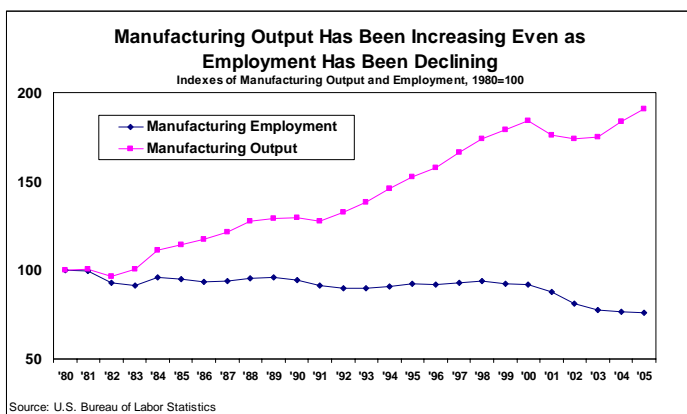


Exhibit 1

Moreover, as shown in Exhibit 2, the United States continues to be the leader in global manufacturing, with roughly a quarter of the world’s total manufacturing output. Significantly, its share has held steady over time: 24.9% in 1982, 24.4% in 1994, and 23.8% in 2004. The large increases in manufacturing share seen in China and, to a lesser extent, Korea, have largely been at the expense of other economies, particularly Japan, Germany, and France.

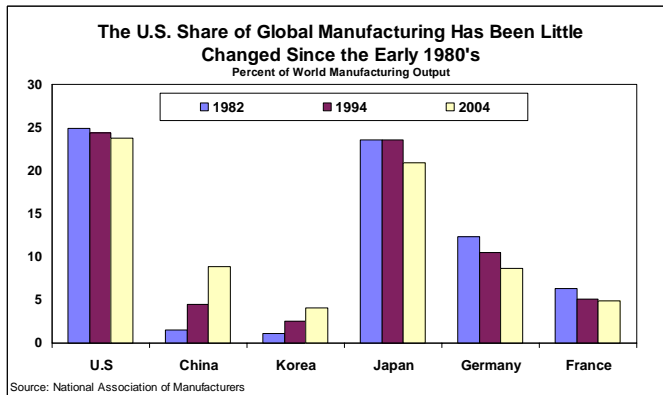


Exhibit 2

This article discusses a number of factors affecting the manufacturing sector¹ and provides implications for workers compensation. The following are key conclusions:

- The much-discussed declines in manufacturing employment are not so much a sign of weakness as they are a reflection of large gains in productivity, which have enabled manufacturers to increase output with fewer workers. The cost savings associated with those productivity gains have helped to restrain inflation and have also been shared with manufacturing workers in the form of higher wages.
- Manufacturers continue to be challenged by intense import competition.ⁱ
- The marked declines in manufacturing employment in the current economic expansion are atypical and may reflect sluggishness in two key drivers of manufacturing—business investment and exports.
- For workers compensation, recent manufacturing job losses (and associated declines in payrolls) indicate reduced exposure in this sector. At the same time, ongoing increases in manufacturing wages imply some upward pressure on indemnity severity. There is also some evidence to suggest that the strong productivity gains in manufacturing may be paying dividends in reducing claim frequency.

Focus on Productivity Growth

Ongoing investment in new plant and equipment, along with continued advances in workplace design and workflow processes, have contributed to substantial improvements in manufacturing productivity (measured in terms of output per hour). As shown in Exhibit 3, these gains have averaged 3.0% a year since 1950, with increases accelerating to a 4.2% annual rise since 1992. That is substantially faster than the 2.2% and 2.4% annual rise in productivity for the nonfarm business sector in those same periods, respectively.

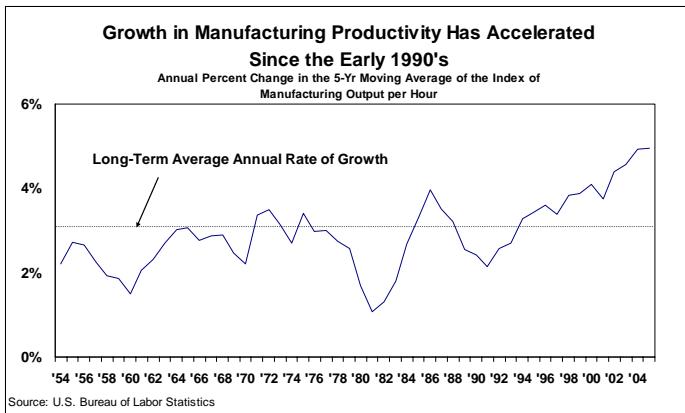


Exhibit 3

Exhibit 4 focuses on the period since 1990, when productivity growth began to accelerate. The chart shows average annual percent changes in the two components of productivity: output and hours worked. Separate breakouts are provided for the durable and nondurable goods sectors of manufacturing. ⁱⁱ

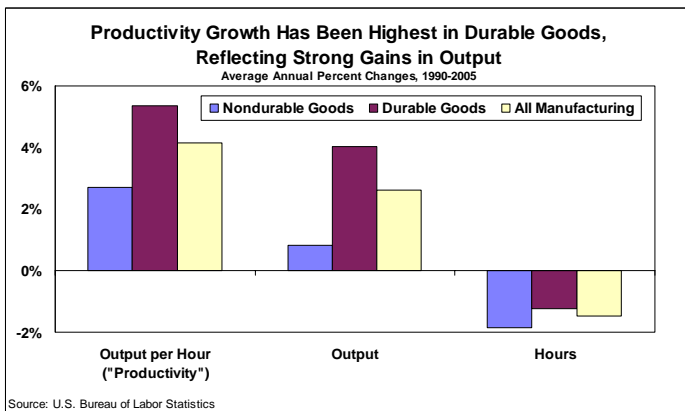


Exhibit 4

- Productivity growth has been nearly twice as fast in the durable goods sector between 1990 and 2005 (5.3% a year vs. 2.7%), reflecting that sector's far stronger gains in output (4.0% a year vs. 0.8%). In contrast, hours worked declined at about the same annual rate in both durable and nondurable goods categories (-1.3% a year vs. -1.8%).
- The relatively strong increases in durable goods output largely reflected double-digit increases in the output of computers and other electronic products, where demand has been growing strongly and where the United States continues to have a substantial manufacturing base. In contrast, the scant gains in nondurable goods output reflected increases in the output of food and chemical products that were mostly offset by declines in the apparel, textiles, and leather goods sectors, where an increasing share of production has shifted to lower-cost producers abroad.

The annual increases in manufacturing productivity over the 1950 to 2005 period imply that an hour of work in manufacturing produced five times as much in 2005 as in 1950. Moreover, focusing on the average 4.2% per year rise in manufacturing productivity between 1992 and 2005 suggests that a worker in 2005 is nearly 75% more productive than was the case 13 years ago. What all of this suggests, of course, is that output gains can be achieved without more workers. ⁱⁱⁱ

Interestingly, increases in manufacturing productivity seen in the United States have been paralleled in other industrialized countries such as Germany, France, Japan, and the United Kingdom. ^{iv} Those countries have also experienced a fall-off in the share of manufacturing employment. In that regard, a recent study by AllianceBernstein estimated that roughly 22 million manufacturing jobs were lost worldwide between 1995 and 2002, a decline of 11%. ^v The US loss in that same period was also 11%.

Increased Competition From Imports

Increased import penetration is also a factor often pointed to as a cause for the decline in manufacturing employment. As shown in Exhibit 5, nonoil imports have been gradually increasing as a share of GDP.

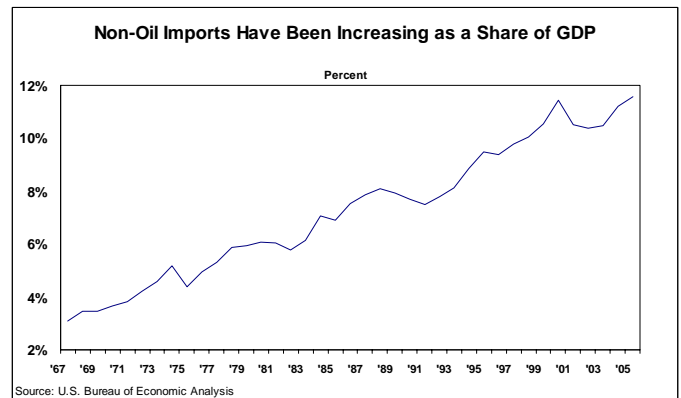


Exhibit 5

The process of free trade among nations necessarily involves a shift in production toward those products that a nation can produce more efficiently relative to other countries. It follows that the production of labor-intensive products, such as apparel, would gradually migrate to lower-cost producers abroad ^{vi} and that jobs associated with apparel manufacturing in the United States would decline accordingly. That certainly has been the case, with employment in apparel manufacturing declining from roughly 930,000 in 1990 to nearly 260,000 in 2005—a decline of more than 70%. ^{vii}

To be sure, such job losses are painful, most especially to those regions and workers affected. However, a primary reason why the US economy has consistently grown more

rapidly than other major industrial countries—with a far lower unemployment rate—is that the US economy is able to rapidly adjust to structural changes occurring both domestically and internationally. Moreover, consumers clearly benefit from the lower prices on many imported products—resulting in an increase in their standard of living. History makes it clear that putting up protectionist barriers provides but a short-term solution and only delays the adjustment process that will inevitably be required.

Recent Trends in Manufacturing Employment and Payrolls

In addition to the longer-term secular forces described above, the manufacturing sector is also being affected by short-term factors relating to the business cycle. Here the current situation is not a pretty picture.

Recent Trends in Employment

Manufacturing is among the most cyclically sensitive sectors of the economy. As shown in Exhibit 6, manufacturing employment tends to decline during recessions (shown by the vertical shading in the chart) and to rebound in expansions. The downward trajectory of manufacturing jobs in the current expansion—now beginning its fifth year—stands in marked contrast to prior experience.

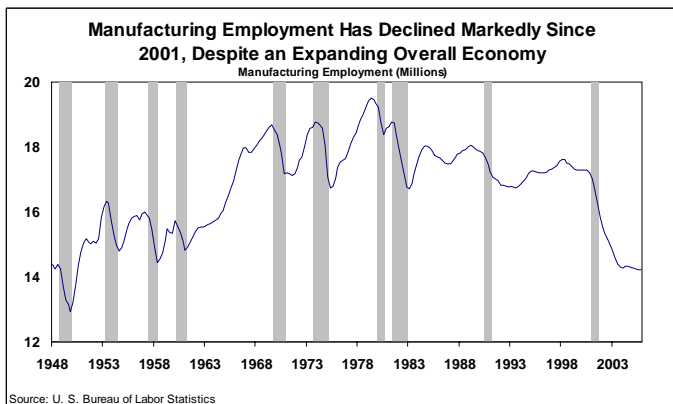


Exhibit 6

- Instead of the average 7% improvement registered at this same stage of prior long-lived expansions (measured from the starting point of each expansion), manufacturing employment has posted a 10% decline since the start of the current expansion (in the fourth quarter of 2001) through the fourth quarter of 2005. Indeed, it has declined nearly 20% from its “local” peak in the first quarter of 1998.
- Job declines have occurred in both durable and nondurable goods sectors since the start of the current expansion (with losses of 9% and 11%, respectively). Industries that are shrinking in size because of intense competition from low-cost producers abroad, e.g., textiles, apparel, and leather products, showed especially large employment declines of nearly 30% on a combined basis. However, large job declines were also posted in

industries demonstrating large increases in both productivity and output, such as the computer and electronic products industry, where employment declined 20% since the start of the current economic expansion.

- Put another way, some 3.4 million manufacturing jobs have been lost since the 1st quarter of 1998, with 1.6 million lost since the start of the current expansion. In contrast, jobs in all other private sectors of the economy increased 4.3 million since the upturn began.
- Some easing in manufacturing job losses has become evident recently, but a fundamental turnaround has yet to show up in the data.

Although the recent loss in manufacturing jobs undoubtedly reflects the ongoing impacts of both productivity gains and import competition, the marked weakness seen recently may also result from the lack of normal vigor in two manufacturing intensive sectors—business investment and exports.

That is shown in Exhibit 7, which compares the percent change in business investment and exports from the end of the last recession to the fourth quarter of 2005 (a total of 16 quarters) to similar percent changes in four long-lived expansions—that is from the recession’s end to 16 quarters thereafter.

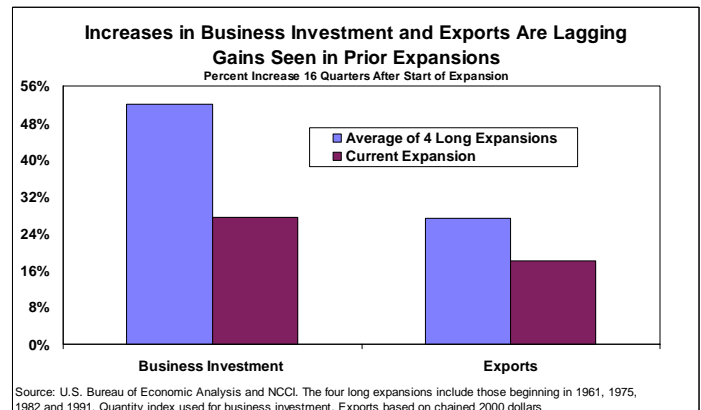


Exhibit 7

- Business investment typically picks up strongly once an economic expansion gains momentum as businesses recognize a need to increase productive capacity to meet current and expected increases in demand. The current expansion was 16 quarters “old” as of the fourth quarter of 2005, and at that stage in prior long-lived expansions, business investment was up an average of 52% (measured from the end of the immediately prior recession). In contrast, such spending is up just 28% in the current expansion. Part of the lag may well reflect excessive investment in information and telecommunications technology that occurred during the late 1990s that may still be depressing gains in the capital goods sector.

- Exports, meanwhile, are typically up 27% at this stage of an expansion, as a strongly growing US economy pulls up growth rates abroad (and hence, increases overseas demand for US goods). In the current expansion, however, US exports are up only 18%. Part of the reason for the recent weakness may relate to weak growth in Europe and Japan, which is affecting the demand for US goods (some 25% of US manufacturing exports are to Europe and 6% to Japan). Although growth in Europe remains weak, there are signs of a revival in Japan, where GDP growth posted a strong 5.5% annualized rise in the fourth quarter of 2005 and forecasts point to healthy growth in both 2006 and 2007.

Recent Trends in Manufacturing Payrolls

The weakness in manufacturing employment is also evident in manufacturing payrolls. Exhibit 8 compares an index of average weekly payrolls in manufacturing to similar indexes for the service-producing sector (which includes all non-goods-producing industries)^{viii} and the construction sector. The manufacturing index dropped following a high in 2000, with some recovery recently. In marked contrast, since 2000, payrolls in the service-producing and construction sectors increased at an average annual rate of 3.5% and 2.8%, respectively.

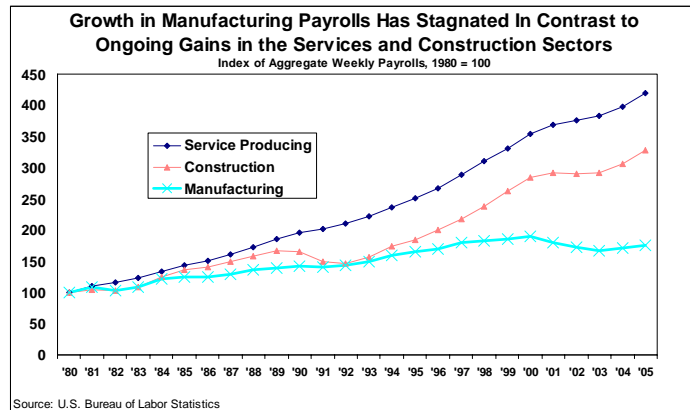


Exhibit 8

Even as aggregate payrolls in manufacturing have changed little since 2000, weekly earnings of manufacturing workers have continued to trend higher (see Exhibit 9). Since 2000, average weekly earnings in manufacturing have increased 2.7% a year, a bit faster than the 2.5% increase for the private sector as a whole and roughly in line with inflation (real average weekly earnings in manufacturing increased 0.2% a year between 2000 and 2005). Some of the rise in workers' earnings most likely reflects a pass through of a portion of the rise in revenues per worker generated by the rapid increases in productivity.^{ix}

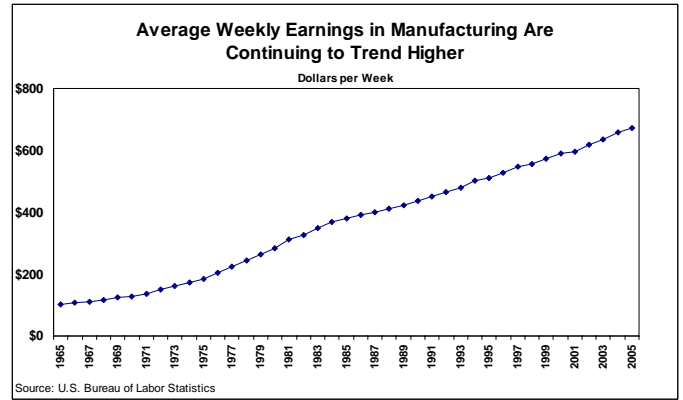


Exhibit 9

Interestingly, the rise in average wages in manufacturing does not appear to reflect the changes in the mix of jobs between low-wage and high-wage sectors. For example, while low-wage jobs in the apparel and textile sectors declined as a share of employment between 1990 and 2005, the share of jobs in the high-wage computer sector also declined.^x In contrast, the share of jobs in the food industry (which pays below-average wages) increased, as did the share of employment in chemicals and transportation equipment manufacturing, where wages are above average. Other manufacturing sectors showed similarly mixed results in terms of the relationship between changes in employment share and wages.

Implications for Workers Compensation

These various developments in the manufacturing sector have significant implications for key workers compensation indicators of exposure, frequency, and severity.

Exposure

Similar to the pattern seen in the US Bureau of Labor Statistics (BLS) data for aggregate weekly payrolls in manufacturing, NCCI data for manufacturing payrolls also peaked in Policy Year 2000 (Exhibit 10). The share of manufacturing exposure to total exposure declined from 14% in 1992 to 10% in 2003.^{xi} The flattish trend of manufacturing payrolls since 2000, combined with recent scant growth in real wages, may impact growth in wage-adjusted premium in the years immediately ahead.

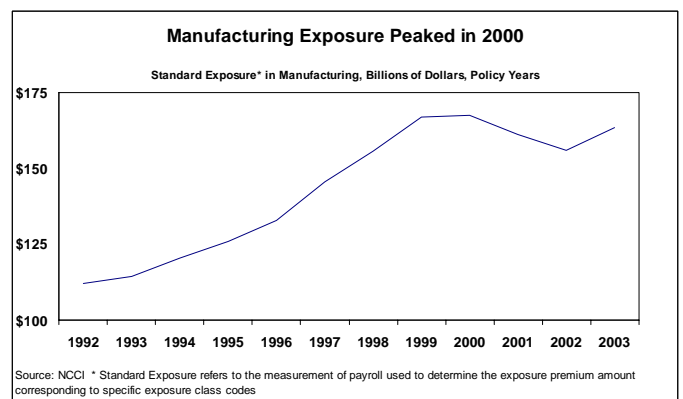


Exhibit 10

The secular forces affecting manufacturing employment suggest that manufacturing exposure will likely continue to decline as a percent of the total. However, there may be some business-cycle-related variation around that trend, with expansions bringing with them above-trend increases in manufacturing exposure and recessions resulting in below-trend readings.

Consistent with the declining share of manufacturing payrolls implied in Exhibit 8, the share of lost-time claims in manufacturing to total claims has also been trending lower. That is seen in Exhibit 11. BLS data for manufacturing injuries and illnesses shows a similar pattern, with the share declining from 27% in 1992 to 18% in 2004.

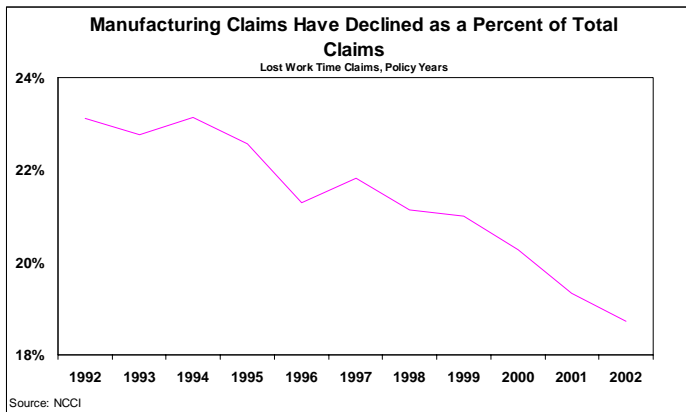


Exhibit 11

Claim Frequency

The accelerating increases in productivity growth during the 1990s and into the current decade provide a partial explanation for the protracted declines in claim frequency that have been occurring during that period. Simply put, the globalization of the US economy put enormous pressure on US manufacturers to become more competitive and efficient by investing in more up-to-date machinery and reengineering work-flow processes. One important result of those efforts was in terms of improved workplace safety. These “spillover” effects have been documented in prior NCCI research, which includes anecdotal reports from companies ranging from Wal-Mart to Toyota.^{xii}

Interestingly, it appears that frequency in manufacturing has been gradually converging to that seen in other sectors. That’s evident in BLS data on workplace injuries.^{xiii} As shown in Exhibit 12, the gap between the incidence rates for manufacturing and all other private industry sectors has narrowed appreciably, especially through 2003.

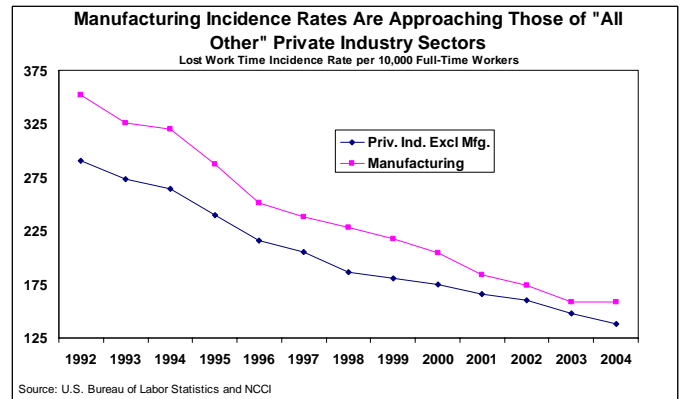


Exhibit 12

Severity

The upward trend in manufacturing wage rates shown in Exhibit 9 suggests ongoing increases in indemnity severity. Some upward pressure on both indemnity and medical severity is also suggested by the decline in incidence rates shown in Exhibit 13. Those latter effects are not immediately apparent, but they flow from the results of recent NCCI research into the declines in claim frequency.

That research, using NCCI’s *Workers Compensation Statistical Plan* data to analyze the reduction in claim frequency for the period 1999 through 2003,^{xiv} found that the decline in frequency for overall claims was greatest among smaller claims and least among larger claims. Specifically, there was a 34% decline in claims less than \$2,000 (in 2003 dollars) and a much lower decline of only 7% in claims of more than \$50,000 (Exhibit 13).

Since the share of relatively minor claims was dropping, the average severity of remaining claims increased. Indeed, according to the study, for indemnity “... the uneven changes in injury rates by size of claim accounted for approximately 40% of the severity increase over the 1999–2003 time,” while for medical, “the uneven frequency decline accounted for approximately 20% of the severity increase....”^{xv}

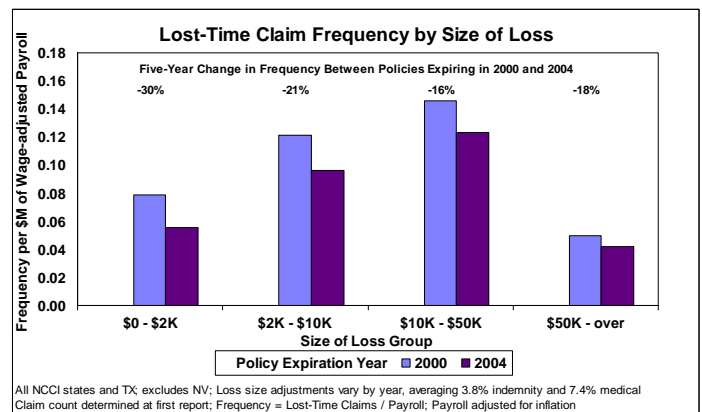


Exhibit 13

All of this suggests that further declines in incidence rates—for both manufacturing and overall—are likely to place upward pressure on indemnity and medical severity, simply because less costly injuries and illnesses are declining as a share of the total. Indeed, recent BLS data confirms this effect; the median days away from work due to a lost-time injury or illness has increased from six days in 1992 to eight days in 2004, the latest period for which data is available.

Key Takeaway Items

The key conclusions of this analysis are as follows:

- Contrary to media reports, the US manufacturing sector continues to be a major component of the US and global economy. In that regard, manufacturing output has grown steadily and manufacturing's share of both US GDP and world output has changed little (even after more than two decades of intense globalization).

- In light of this growth in manufacturing output, the secular decline in manufacturing employment largely reflects rapid gains in manufacturing productivity and increased import penetration. NCCI research indicates that frequency declines are associated with increases in productivity.
- The decline in manufacturing jobs so far in this expansion is most atypical and may partly reflect weak export markets and lackluster gains in capital spending, as compared to prior expansions. Manufacturing wages have continued to rise, however, in part, reflecting a sharing of the gains from rapid productivity growth. The rise in wage rates suggests upward pressure on indemnity severity. Upward pressure on both indemnity and medical severity can also be inferred by recent NCCI research that suggests that the declines in frequency are tending to be concentrated among smaller-sized claims.

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ENDNOTES

ⁱ Part of the job loss in the United States reflects the likelihood that productivity gains abroad have been even greater than those in the United States, resulting in a shift in output to those countries. This especially has been the case in the textile and apparel sectors.

ⁱⁱ The following NAICS three-digit industries are included in the nondurable goods sector: Food Manufacturing (311), Beverage and Tobacco Product Manufacturing (312), Textile Product Mills (314), Apparel Manufacturing (315), Printing and Related Support Activities (323), Petroleum and Coal Products Manufacturing (324), Chemical Manufacturing (325), Plastics and Rubber Products Manufacturing (326). The durable goods sector includes: Wood Product Manufacturing (321), Nonmetallic Mineral Product Manufacturing (327), Primary Metal Manufacturing (331), Fabricated Metal Product Manufacturing (332), Machinery Manufacturing (333), Computer and Electronic Product Manufacturing (334), Electrical Equipment, Appliance, and Component Manufacturing (335), Transportation Equipment Manufacturing (336), Furniture and Related Product Manufacturing (337), Miscellaneous Manufacturing (339).

ⁱⁱⁱ A broader viewpoint is suggested in a recent paper by William Nordhaus at Yale. He suggests that higher productivity growth in the United States has led to lower prices, expanding demand, and *higher* employment—especially for the period since 1998. However, those gains “have been more than offset by more rapid productivity growth and price declines from foreign competitors.” Interestingly, however, research by Joseph Carson at AllianceBernstein indicates that manufacturing employment has also declined in China and other low-cost nations that have also experienced large productivity gains. An evaluation of these various studies is beyond the scope of this paper. Additional details on the Nordhaus study are provided in:

William Nordhaus, “The Sources of the Productivity Rebound and the Manufacturing Employment Puzzle,” *NBER Working Paper Series*, Working Paper 11354, National Bureau of Economic Research, May 2005.

The Carson study is referenced in note vi.

^{iv} Forbes, *op. cit.*, p. 4.

^v Joseph G. Carson, “Manufacturing Payrolls Declining Globally: The Untold Story” *US Weekly Economic Update*, AllianceBernstein, October 10, 2003, p. 3.

^{vi} According to the Economic Research Service of the US Department of Agriculture, 54% of textile and clothing imports into the United States in 2001–2002 originated in Asia (15% from China), 26% were from Latin America, 7% were from Africa, and 12% were from other industrialized nations. About 1% of imports originated in Eastern Europe and the Former Soviet Union.

^{vii} The United States faces stiff price/cost competition from abroad. For products ranging from automobiles to cameras, foreign-based firms are perceived as producing goods of higher quality than domestic manufacturers. Indeed, the United States no longer appears to have the clear advantage in conducting research and development for next-generation products. US firms have been establishing research centers abroad. In this latter connection, see:

Donald H. Dalton and Manuel G. Serapio, Jr., *Globalizing Industrial Research and Development*, US Department of Commerce, Office of Technology Policy, September 1999, pp.7–9, 53–54.

^{viii} Service-producing industries include trade/transportation/utilities, information, financial services, professional and business services, education and health services, leisure and hospitality, and other services.

^{ix} The gains from productivity are typically shared between labor (via higher wages and increased benefits) and capital (via increased profits). In addition, if the increase in output leads to a reduction in prices, the “real” incomes of workers can rise even without an increase in nominal wages. That has typically happened in the agricultural sector, and a similar effect may be occurring in the computer and electronic components sector, where rapid productivity increases have also been accompanied by significant declines in price.

^x As previously noted, the fall-off in textile and apparel jobs reflected large declines in the industry’s output, due largely to import competition. In contrast, the job losses in the computer sector reflected substantial productivity gains, as industry output has been expanding rapidly.

^{xi} These percentages compare with the decline in the share of manufacturing wage disbursement to total disbursement from 24% in 1992 to 15% in 2004. The difference largely reflects the fact that NCCI states do not include a number of major manufacturing states—including California, Michigan, New York, New Jersey, Ohio, Pennsylvania, and Texas—that on a combined basis account for roughly 40% of manufacturing employment.

^{xii} National Council on Compensation Insurance, “Searching for the Factors Driving the Change in Frequency With Special Interest in the Decline of the 1990s,” Presentation to the *Annual Issues Symposium*, Research Breakout Session, May 10, 2002.

^{xiii} The BLS’ measure of frequency is the number of injuries or illnesses resulting in at least one day absent from work after the date of injury per 10,000 full-time equivalent workers.

^{xiv} Tony DiDonato and Delano Brown, “Workers Compensation Claim Frequency Down Again,” *NCCI Research Brief*, Volume 1, June 2005.

^{xv} *ibid.* p. 5.

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