TD Bank Financial Group

# TD Economics

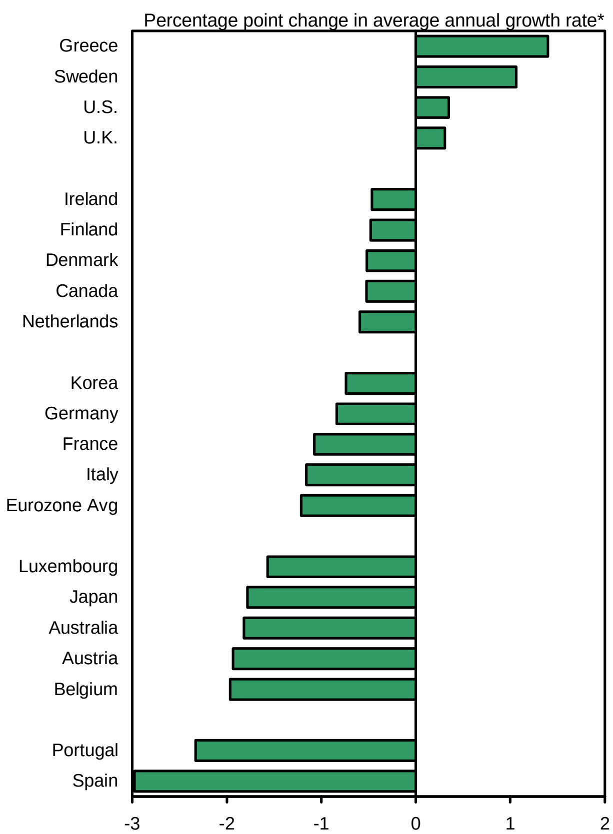
## Special Report

September 6, 2007

# THE ILLUSION OF WITHERING WAGES

Wage growth has slowed noticeably across most advanced nations. On the surface, this is odd given the broad trends of low unemployment and robust economic growth. Coupled with record corporate profits in recent years, this has led to suggestions that workers are losing out. In fact, the historical links between labour markets, productivity, and total compensation – wages and benefits – remain reasonably intact. Falling unemployment rates have benefited wages, but this has been offset by a trend of flagging productivity growth in most advanced nations. Moreover, the perception of faltering wages is further driven by the distribution of compensation between wages and benefits, individuals' choice of working fewer hours to enjoy more leisure time, technological changes in the efficiency of capital investments underway since the 1980s, and just plain bad statistics. Ultimately, it is innovation, not globalization, which is responsible for the changes we see.

**SLOWING REAL WAGE GROWTH: 2000-2006 vs. 1970-1999**




*Average annual growth rate in 2000-2006 minus that in 1970-1999; Source: EU AMECO database.

### HIGHLIGHTS

- **The perception that wages have fallen behind in advanced nations is broadly true, but materially false when compensation is measured more broadly.**
- **While tight labour markets have helped wage growth, this has been offset in several cases by a productivity slowdown in many industrialized economies.**
- **With a larger share of income now paid out in the form of benefits, wages as a share of the economy have fallen, but total compensation has been much steadier.**
- **In those countries that have seen a declining share of national income going to labour and an increasing share going to corporate profits, the evidence suggests this is the result of overprotective labour market regulations that slow the economy's ability to adjust to technological change – not globalization.**

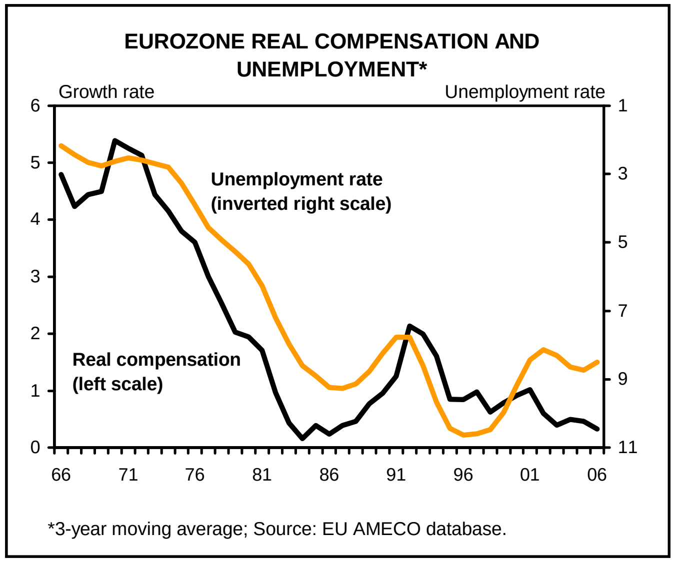
## More jobs means more money

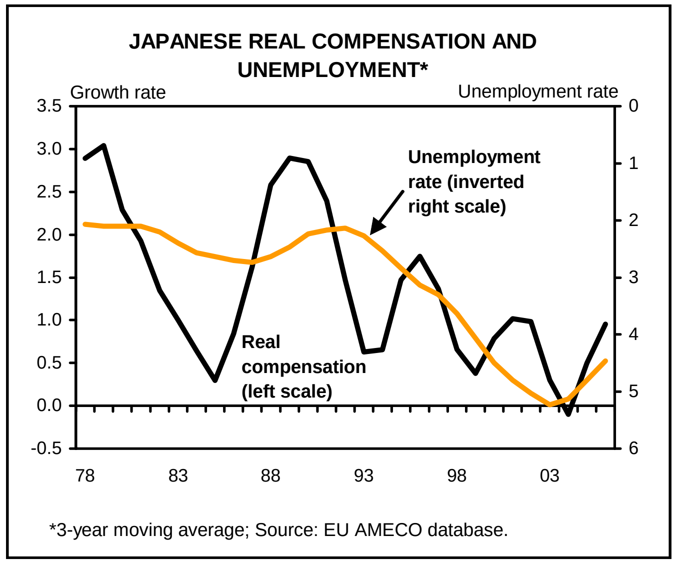
Looking across Canada, the U.S., the Eurozone, and Japan, we see evidence that the connection between labour markets and compensation remains. In general over the last forty years, a one percentage point improvement in the unemployment rate has tended to be associated with a half a percentage point increase in real (inflation-adjusted) compensation in the U.S., with a slightly stronger response in the other economies. While all these regions have seen an improvement in the unemployment rate in recent years, the higher level of compensation growth in the U.S. is partly a reflection of a long-sustained improvement in the level of unemployment since the mid-80s.

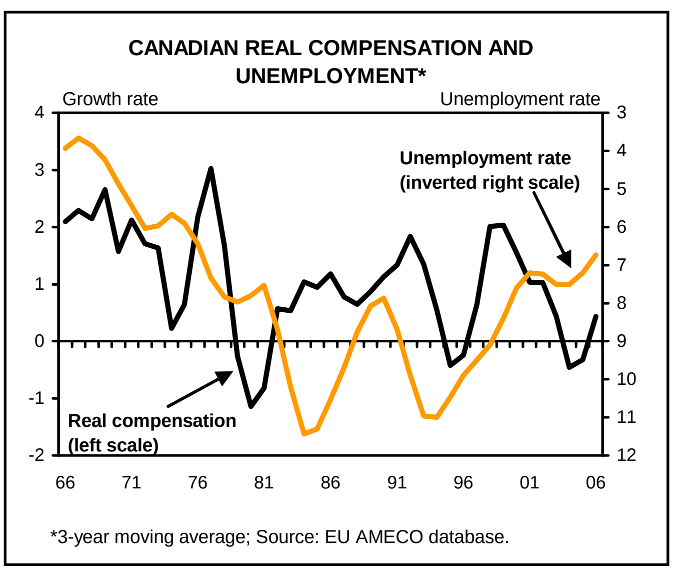
Cyclical pressures and strong lags have kept the connection more tenuous over shorter time horizons. For example, recent improvements in the unemployment rate in Canada and the Eurozone have not seen as strong a response from wages as in the past. This comes on the heels of experiences earlier this decade, however, that saw compensation growth exceeding that suggested by the looser nature of the local labour markets.

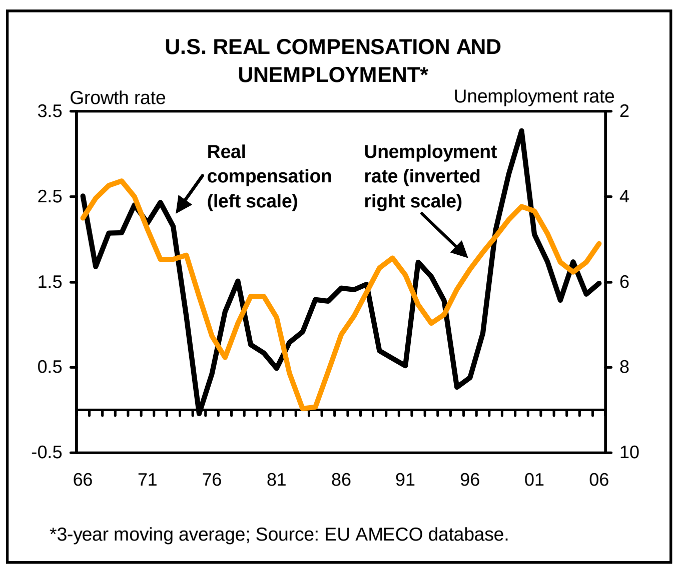
## A better economy means more wages

Some of the connection between wages and unemployment is a reflection of the improved bargaining power of workers to demand higher wages in times of a scarcer supply of out-of-work individuals. But, more fundamentally, the lower unemployment rate is a reflection of general economic strength. When GDP growth is strong, these returns are passed along to workers in the form of more jobs and more income. By this metric, the connection be-



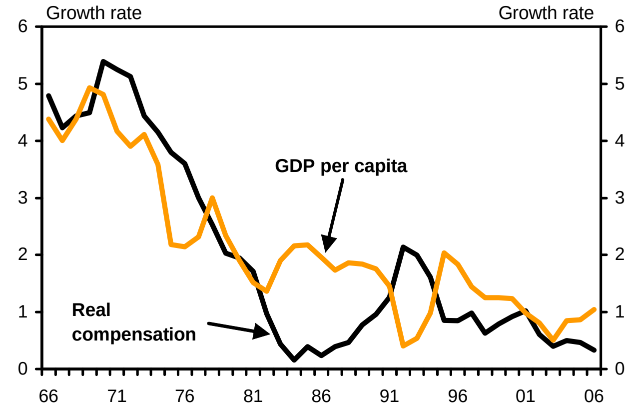
tween the growth of real compensation and that of real GDP per capita has remained very tight over time. Just as with unemployment, there is some appearance that the growth rate of GDP per capita has outstripped that of wages in recent years, but outside of Japan, there is little appearance this wedge is out of the ordinary given past deviations.

## The productivity panacea

The last, and most important, driver of real compensation growth is labour productivity. Economists sing the praises of productivity – a measure of the increase in output given no change in input costs – because it has four major benefits for the economy. First, since productivity growth is analogous to doing more with less, the result is lower production costs. Because of this, companies are able to reduce the price and/or increase the quality of their merchandise. Second, cheaper prices save consumers money, allowing them to save or buy more goods and services. Third, since firms are generally able to increase their production faster than they can inspire consumers to increase their spending, productivity frees up part of the labour force to go to work in other sectors of the economy. And last – and most important for the present discussion – workers in industries with strong productivity growth often see their pay increase, as a result of productivity's twinfold effect of cutting the firms costs while simultaneously increasing its sales.

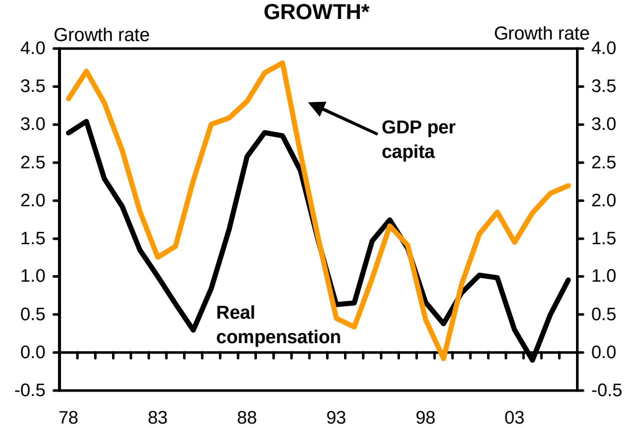
Although there has been some concern that worker compensation has failed to keep pace with recent gains in productivity, in fact, the correlation has remained rather tight

EUROZONE REAL COMPENSATION AND GDP GROWTH*



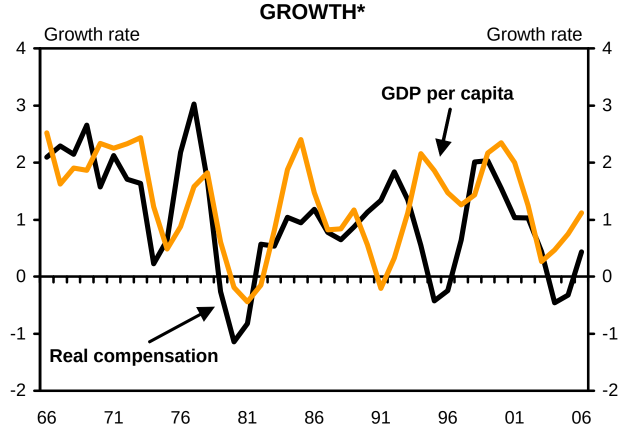

*3-year moving average; Source: EU AMECO database.

JAPANESE REAL COMPENSATION AND GDP GROWTH*



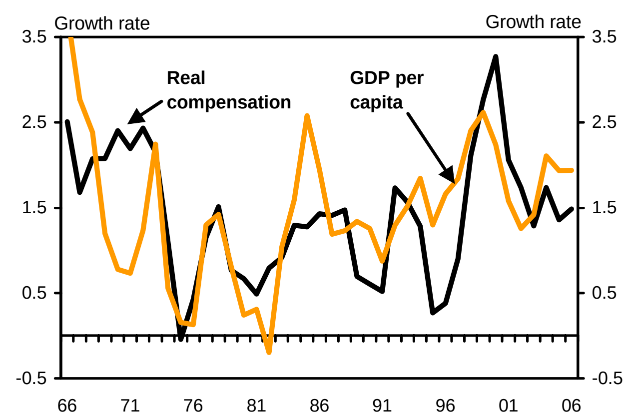

*3-year moving average; Source: EU AMECO database.

CANADIAN REAL COMPENSATION AND GDP GROWTH*




*3-year moving average; Source: EU AMECO database.

U.S. REAL COMPENSATION AND GDP GROWTH*

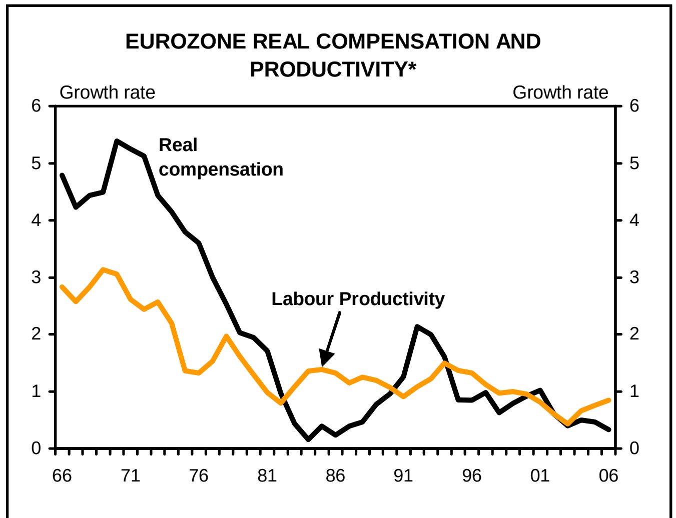



*3-year moving average; Source: EU AMECO database.

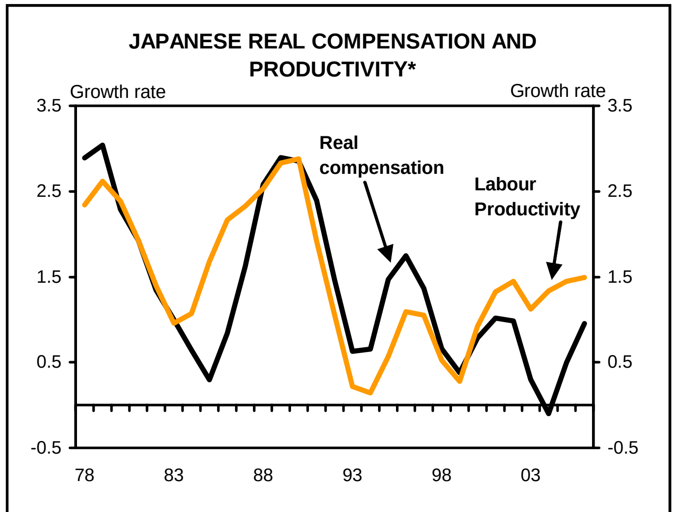
in North America and Europe. A trend increase in productivity in the United States since the 90s has been met with a trend increase in compensation there. But across most OECD economies, productivity growth did not enjoy such an increase, and so income growth has been more muted. Lagging wage growth in Japan has been attributed to the lingering effects of deflation in the economy and mixed expectations of whether the current burst of economic growth there can be sustained. But, the Bank of Japan's current penchant for raising interest rates in the midst of ongoing, mild deflation looks more reasonable given indicators such as this signaling further Japanese wage gains – and the potential for increased purchasing power and inflation – to come.

### Is productivity being rewarded?

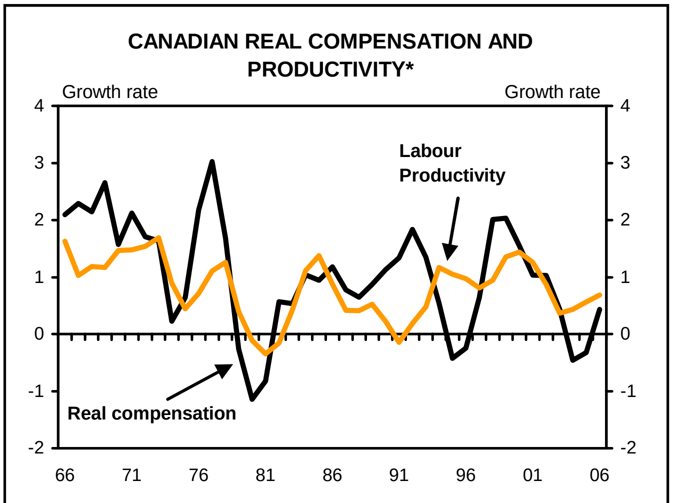
None of this should discount the fact that there is certainly a fairly universal sense among global workers that income has failed to keep pace with effort. So we next move on to address why this perception may exist. Given the previous discussion, there is little evidence that any of the fundamental relationships that drive wages have broken down. But, are workers' incomes translating into increasing purchasing power – i.e. how quickly are incomes rising relative to the prices of goods and services that workers are spending their incomes on? If your salary increases by three per cent, but the prices of everything you purchase have increased by five per cent, you will feel worse off in spite of your raise. The previous discussion accounted for this by using real compensation – total compensation adjusted for changes in inflation – but it turns out all meas-



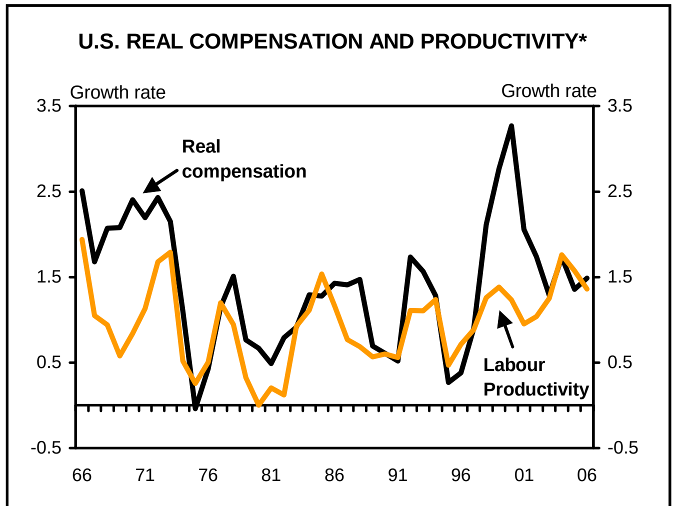
*3-year moving average; Source: EU AMECO database.



*3-year moving average; Source: EU AMECO database.



*3-year moving average; Source: EU AMECO database.



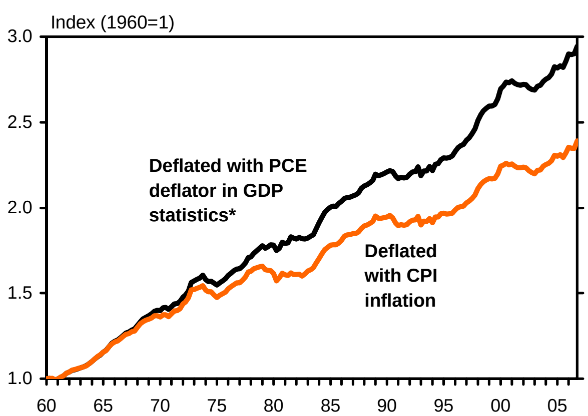
*3-year moving average; Source: EU AMECO database.

ures of inflation are not created equal. While individuals' incomes have definitely risen relative to inflation across every advanced nation, it turns out the magnitude – especially for the U.S. – hangs on which measure of consumer prices one uses.

In the below chart, the increases in U.S. personal income since 1960 are adjusted for consumer prices as measured by the headline CPI series and the personal consumption expenditures (PCE) measure used to calculate U.S. real GDP. While the series are virtually identical for the first 20 years, there has been an ever-widening gap since the 1980s. Relative to PCE inflation, individual's purchasing power is nearly 20 per cent higher than using CPI inflation – obviously no small difference. But which inflation measure is better?

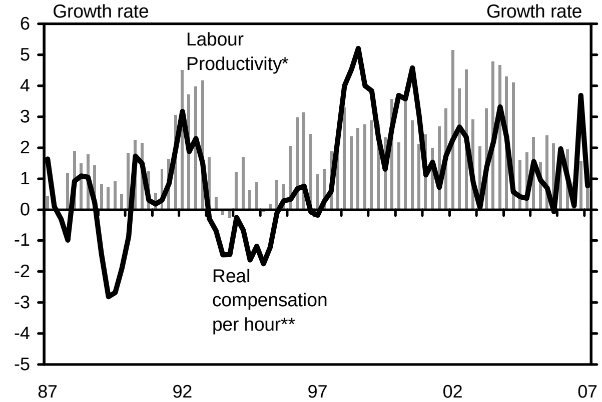
There are two major differences between the two series that suggest PCE inflation is the more appropriate metric. First, there is an important difference in the statistical methods used to measure each. The basket of goods people purchase is constantly changing to reflect changing tastes and changing prices. These changes make a statistician's job difficult, however, in finding an accurate benchmark of inflation ***as it relates to what people actually purchase at any given time***. While the PCE deflator measures the average change in prices for all goods and services actually purchased in the economy in each year, effectively allowing consumers' choices to change year after year, measures of U.S. CPI inflation keep the reference basket of goods and services individuals purchase fixed over a longer period. This means the process of

U.S. REAL PERSONAL INCOME



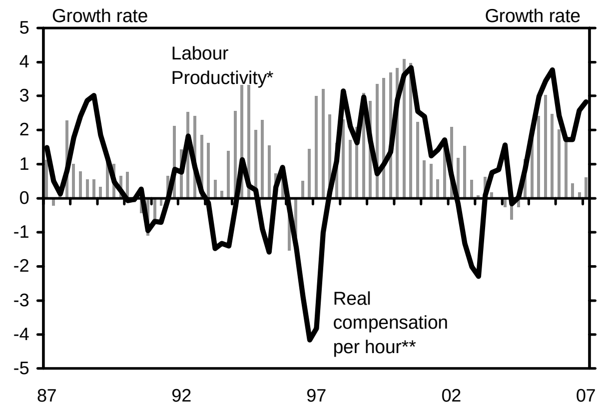

*Consumer spending as recorded in GDP; Source: Bureau of Labor Statistics, National Bureau of Economic Research, Haver Analytics.

U.S. BUSINESS SECTOR PRODUCTIVITY AND COMPENSATION




*Output per hour worked; **Deflated with CPI.
Source: U.S. Bureau of Labor Statistics and Haver Analytics.

CANADIAN BUSINESS SECTOR PRODUCTIVITY AND COMPENSATION

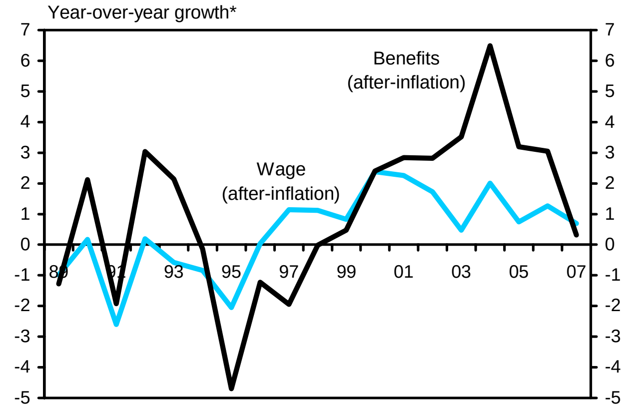



*Output per hour worked; **Deflated with CPI.
Source: U.S. Bureau of Labor Statistics and Haver Analytics.

substituting cheaper goods for more expensive ones over time is not captured as well – implying an upward bias in CPI inflation over time. Studies of consumer purchasing power that use CPI inflation may therefore be skewed because of this statistical bias. Incidentally, this is one reason the PCE deflator, and not CPI inflation, is the Federal Reserve's preferred measure of inflation.

The second major difference in the two series may also be a factor in driving perceptions in the U.S. While both series attempt to accurately reflect a consumer's basket of goods and services, CPI inflation is a better measure of goods and services ***purchased by a consumer*** while PCE inflation is a better measure of consumer goods and services – ***irregardless of who purchased them***. To understand the difference, think about health expenses. In many

U.S. WAGE AND BENEFIT GROWTH




*Q1-over-Q1; Source: Bureau of Labor Statistics and Haver Analytics.

cases, these are not actually paid for directly out of consumers' pockets but are provided through work-related benefits. These expenses are generally not included in CPI inflation but are included in PCE inflation – where health expenditures have three times as much weight in the calculations as the latter. The second major weighting difference is regarding housing, which has a 40% weight in the CPI consumer basket and just half that for the PCE basket. In fact, the way housing is represented has been shown to bias CPI inflation up by nearly a quarter of a percentage point. (For more on the upward bias in CPI inflation, see TD Economics Special Report *Is U.S. CPI Under-estimating Inflation?* here: http://www.td.com/economics/special/bc0505_cpi.pdf)[1]

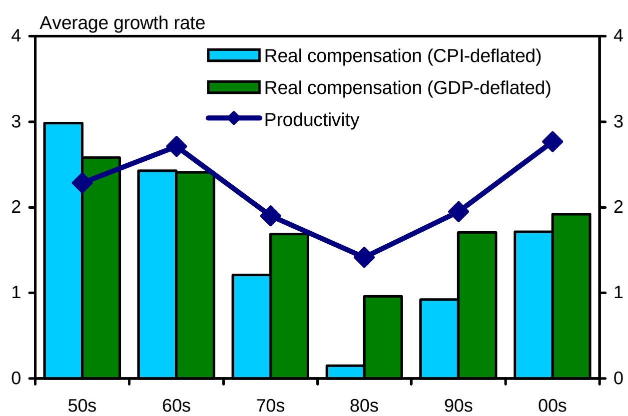
**Who benefits from benefits?**

So there is an argument to be made that consumers could feel like they are not seeing the same gains because the purchasing power of the money in their wallets has not increased as much as that of their total compensation. In fact, evidence in the U.S. shows that not only has the rate of growth of real wages there been trending up for the last two decades, but since 2000, the growth of inflation-adjusted benefits has been 3 to 4 times greater than that of wages. Now this could mean an expansion in the coverage of benefits, an increase in the costs of existing benefits, or more likely, a combination of both. While the spiraling cost of health care costs in the U.S. has been a topic of discussion for some time, this is an issue to some extent around the world. From the firm's perspective, they are generally indifferent between wages and benefits, as long as the total compensation is the same.

In most cases, benefits growth tends to be greatest when employment conditions are weakest. So during the recessions of 1991 and 2001, U.S. manufacturing lost jobs and service sector employment stagnated, but the growth in employment benefits was at its peak. As the economy recovers, employment and wage growth tends to increase at the expense of benefits. What was unique about recent developments was first, how long it took for employment growth in the U.S. to recover, and second, the scale and duration of strong gains in benefits. This appears to be the primary driver keeping wage growth muted, not globalization and competition with low-cost labour centres. While the lower growth rate of wages and benefits in the manufacturing sector relative to the service sector over the last decade could suggest some impact from globalization (as the goods sector faces more direct competition from trade than services), it is equally possible this is a reflection of the fact that benefits for manufacturing workers remained constant over the 1987-1997 period while they averaged nearly a 1% annual decline for service-sector workers. Not only that, the fact that both real wages and benefits for both manufacturing workers and service workers have grown faster in the last decade than the decade prior could easily insinuate we need more globalization, not less. (For more on changes in the labour market over the last decade, see the box entitled *The Global Labour Restructuring*.)

But benefits need not be tangible pay, but job flexibility,

U.S. PRODUCTIVITY AND COMPENSATION




Source: Bureau of Labor Statistics and Bureau of Economic Analysis.

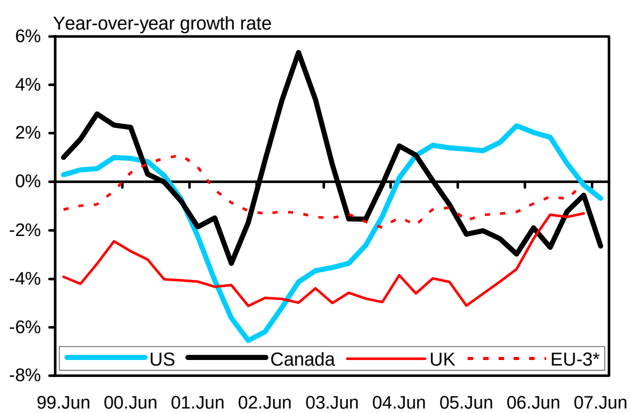
## The Global Labour Restructuring

No industrialized nation has seen a quicker transition to service-sector employment than Britain. On a year-over-year basis, manufacturing employment has not grown since 1998. But because of the strong service sector economy, the U.K. is now one of the fastest growing economies in Western Europe. Throughout Europe, regional integration has led to structural changes which have simultaneously lowered unemployment and increased hours worked – thereby temporarily lowering productivity but increasing the prospects for future economic growth.

Overall, the global job market is characterized by a constant churning, rather than persistent decline of manufacturing jobs and rise of service sector employment. Research by the U.S. Department of Labor in 2000 looked at the reemployment experience of workers who had held their previous job for at least three years before being laid off due to plant closings, restructurings, or insufficient work. What they found was that one-half of manufacturing, construction, and retail trade workers found a new job in the same field, which was a considerably better success rate than among transportation and wholesale trade workers.

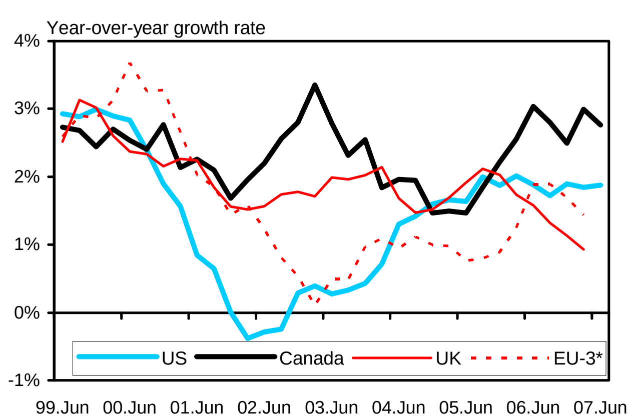
Meanwhile, Canada's job market restructuring has been more muted than its G-7 peers. Over the last decade, Canada has had the fastest pace of manufacturing, construction, and service sector employment – and is the only G-7 nation to have seen growth in all three sectors. Because of this, Canada is the only G-7 nation that employs more manufacturing workers now than it did two decades ago. However, some of this is the result of the fact that Canada has the strongest population growth rate, as well, so there are just more people and more workers in the economy. Even more impressively then, after accounting for the differing growth of each nation's population, the rate of contraction of the Canadian manufacturing sector over the last five and ten years has been smaller than elsewhere. Additionally, Canada has simultaneously enjoyed one of the fastest expansions of population-adjusted employment in both the construction and service sectors.

**EMPLOYMENT IN MANUFACTURING**




*Germany, France, and Italy; Source: Statistics Canada, Bureau of Labor Statistics, Office for National Statistics, Haver Analytics.

**EMPLOYMENT IN SERVICES**




*Germany, France, and Italy; Source: Statistics Canada, Bureau of Labor Statistics, Office for National Statistics, Haver Analytics.

AVERAGE ANNUAL GROWTH IN EMPLOYMENT (Population-adjusted*)

| | 1970-1986 | 1987-1996 | 1997-06 Decade | 97-01 | 02-06 |
|---|---|---|---|---|---|
| MANUFACTURING | | | | | |
| US | -0.9 | -1.0 | -1.5 | -1.4 | -1.6 |
| Canada | … | -1.5 | -0.6 | -0.1 | -1.0 |
| UK | … | -1.6 | -3.5 | -2.8 | -4.2 |
| EU-3** | … | … | -1.0 | -0.4 | -1.5 |
| Japan | -0.9 | -0.4 | -2.2 | -3.3 | -1.2 |
| CONSTRUCTION | | | | | |
| US | 0.8 | 0.0 | 2.0 | 2.6 | 1.5 |
| Canada | … | -1.1 | 3.5 | 2.2 | 4.7 |
| UK | … | -1.3 | 1.8 | 1.7 | 2.0 |
| EU-3** | … | … | -0.9 | -1.3 | -0.4 |
| Japan | 0.8 | 2.2 | -2.3 | -1.9 | -2.8 |
| SERVICES | | | | | |
| US | 1.7 | 1.1 | 0.6 | 0.9 | 0.2 |
| Canada | … | 0.2 | 1.4 | 1.5 | 1.3 |
| UK | … | 1.1 | 1.4 | 1.8 | 1.1 |
| EU-3** | … | … | 1.4 | 2.1 | 0.7 |
| Japan | 1.1 | 1.3 | 0.8 | 0.7 | 0.8 |

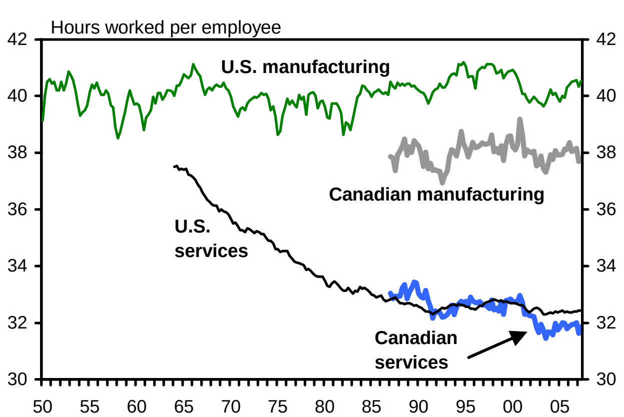
*Growth rate in employment minus total population growth.
**Germany, France, and Italy.
Source: National statistical agencies and Haver Analytics.

as well. As incomes rise, individuals and families increasingly value the quality and length of their free time over a marginal increase in their pay. This factor has been more of a long-term driver than a recent phenomenon, but certainly the fact that manufacturing workers on average work just as many hours now as they did after World War II – 25 per cent more hours than a service sector worker – is responsible for the growth of service sector employment. Job flexibility and reduced hours, something not as easily available in a manufacturing setting, is an example of a non-wage benefit increasingly important in high-income economies.

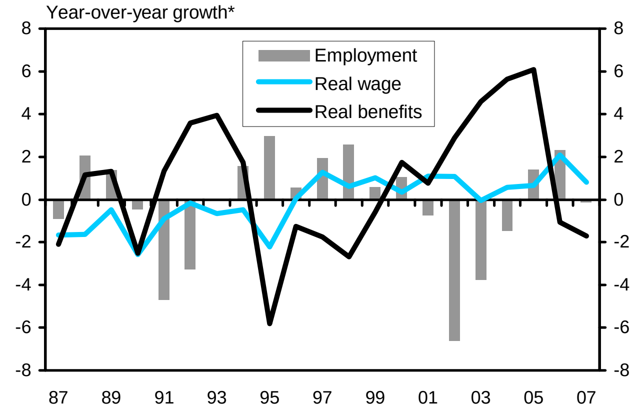
### Labour, capital, and technology

So, while wages and salaries in the U.S. have been declining recently as a per cent of GDP, total compensation has maintained a relatively constant share of the U.S. economy. So at least in the U.S., labour's share of the economy – with the remainder accounted for by corporate profits – has not deteriorated. The same cannot be said across all advanced countries, however. The last puzzle which might explain the perception of withering wages is the declining share of compensation and rising share of corporate profits in the economy of many advanced nations.[2]

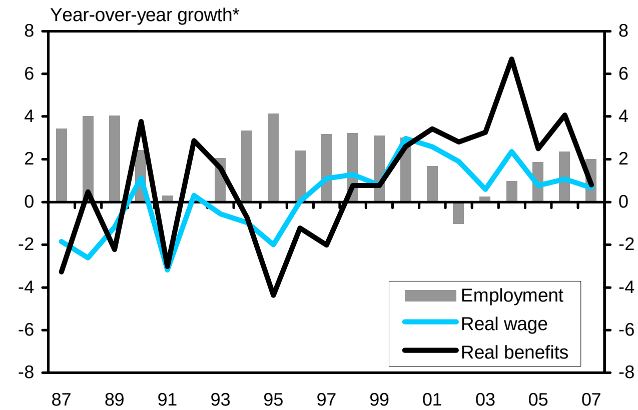
While this puzzle is much more of an open topic for ongoing research and debate, what we do know suggests that, once again, technological changes underway since the 1980s, and not globalization, are at play. Across OECD nations, after rising since the 1950s, compensation's share




*Output per hour worked;
Source: U.S. Bureau of Labor Statistics and Haver Analytics.




*Q1-over-Q1;
Source: Bureau of Labor Statistics and Haver Analytics.

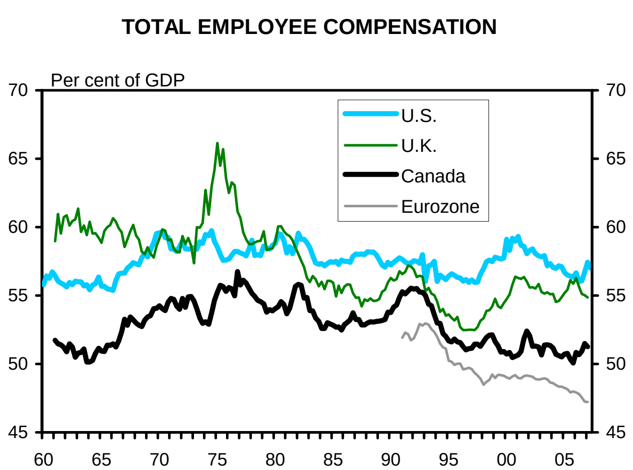



*Q1-over-Q1;
Source: Bureau of Labor Statistics and Haver Analytics.

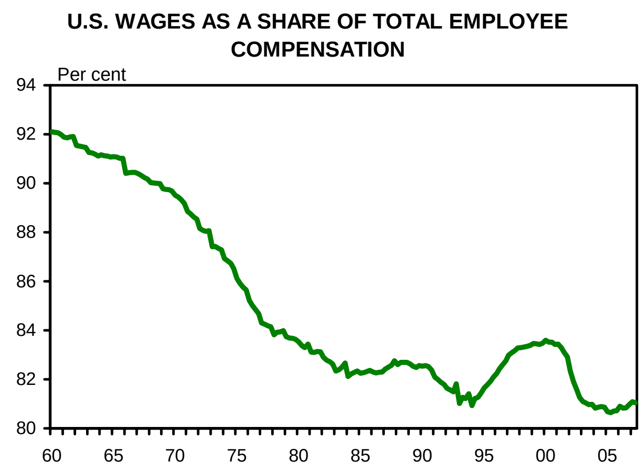
of the economy has fallen on average from a peak near 57 percent in the 1980s to near 50 per cent today. Rather than seeing falling compensation shares in industries/economies most directly in competition with emerging markets or experiencing the most offshored jobs, the largest declines in labour's share have been in service sector industries. In fact, labour's compensation has generally been flat or risen (while profit's share has declined) in most manufacturing industries that globalization would impact the most.

Moreover, those economies with more rigid labour markets and higher employment protection have seen a larger decline in labour's share of the economy, but little to no increase in income inequality. Additionally, we have seen a decreasing share of labour productivity (and increasing share of capital productivity) in the total productivity growth in most advanced economies. Putting all of this together with the fact that the changes began early in the 1980s, well before globalization increased the cross-border flows of trade and investment capital, the evidence points to a much more important role played by information technology. All of the above "symptoms" would be consistent with some change that increased the efficiency of capital investments, as well as the pace of depreciation of that investment. Once again, IT fits the bill. The empirical evidence supports this, as well, with greater declines in labour's share of income derived from industries which have invested more heavily in IT.

With an apparent tradeoff between either decreasing total compensation as a share of GDP or increasing inequality, it is unclear what if anything should be done. With strong growth in benefits and the use of tax-shelter retirement plans like RRSPs, 401k's, etc., the expanded holdings of stocks by individuals means to some extent, people may already be adapting to these changes. By holding stocks, the returns to these capital investments can still ultimately accrue to employees. The fact that in many countries there are now tax savings to both employees and employers to pay out compensation in the form of retirement accounts principally held in stocks may even further encourage these trends we've seen.



Source: National statistical agencies and Haver Analytics.



Source: Bureau of Economic Analysis and Haver Analytics.

## The illusion of withering wages

So once again, it does not appear employees are losing out. Tight labour markets continue to push wages up. Labour productivity continues to be the ultimate driver of compensation, but in many cases, productivity increases in capital investment have overshadowed that of labour. The perception that wages have fallen behind is broadly true, but materially false when compensation is measured more broadly. The expansion of benefits, be they cash-based ones like health insurance coverage and retirement savings plans, or non-cash benefits, such as flexible work schedules and reduced hours, explains how compensation could grow but make individuals feel they have missed out. And, to the extent that some economies have seen a declining share of compensation in national income, this can be mitigated with policies that promote labour market flexibility and skill training so markets can adjust to technological innovations.

***Richard Kelly, Senior Economist***
***416-982-2559***

## Endnotes

[1] These same statistical anomalies have only a negligible impact on Canadian measures of income.

[2] The following draws predominantly on two recent economic papers. BIS Working Paper #231 (July 2007), entitled "The global upward trend in the profit share," by Luci Ellis and Kathryn Smith, and IMF Working Paper 06/294 (December 2006), entitled "Effects of Globalization on Labor's Share in National Income," by Anastasia Guscina.