

# UNITED STATES ECONOMICS FOCUS

10<sup>th</sup> Jun. 2009



## Falling wages would raise deflation threat

- The resilience of average earnings growth offers some hope that a prolonged period of deflation will be avoided. **In today's low inflation environment, however, the surge in unemployment could easily be big enough to push nominal earnings growth into negative territory.** A decline in earnings would make it progressively harder for households to service their considerable debts and, in a worst case scenario, could lead to a long and painful debt-deflation spiral. This threat is good for government bonds and bad for equities.
- **In the majority of previous recessions, high inflation (and the expectation that high inflation would persist) prevented nominal earnings from falling outright. But in today's low inflation environment, this is unlikely to be the case.** This would not be unprecedented. During the low inflation era of the 1920s and 1930s, nominal earnings growth fell some way below zero. We expect average earnings to fall by at least 1% next year.
- **Whether or not a decline in nominal earnings is a big deal largely depends on whether falling wages and prices become ingrained in the public's expectations.** It is of some concern, then, that the Conference Board's measure of consumers' income expectations has recently fallen to its lowest level in its 21-year history.
- **The high level of household indebtedness further increases the risk of a deflationary spiral.** As the value of households' debt is fixed, falling nominal wages would increase the burden of that debt. That could prompt households to rein in their spending further, kick-starting a debt-deflation spiral in which wages and prices fall at an ever faster pace.
- **A look at the experience of Japan shows just how real this risk is.** The increase in the unemployment rate in Japan in the late 1990s pushed nominal earnings growth into negative territory. Due to the interaction between the high levels of debt and the collapse in income and price expectations, nominal earnings have barely risen since.
- **A debt-deflation spiral in the US is not our central scenario. However, the risk is significant and, given the catastrophic nature of such an outcome, it is a risk worth taking seriously. Despite all the green shoots of recovery, a return to sustained economic growth is still far from guaranteed.**

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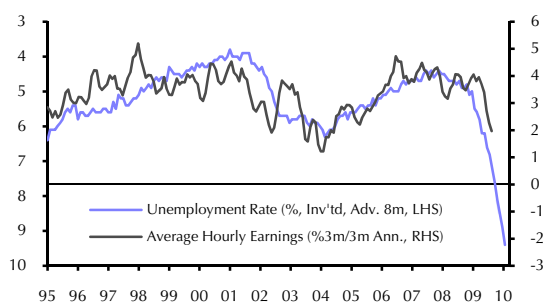
## Falling wages would raise deflation threat

One indicator that has yet to be significantly affected by the recession is average hourly earnings. Even though the unemployment rate has shot up to a 25-year high, nominal average earnings have continued to rise at a fairly healthy clip. Unfortunately, this can't continue and something has to give. In this *Focus*, we argue that it might not be long before nominal earnings growth turns negative, increasing the risk of a long and painful debt-deflation spiral.

### Earnings growth is still strong

It is something of a puzzle that even as employers have rushed to cut headcounts and reduce hours worked, they have continued to remunerate their remaining employees rather well. Over the past few months, however, signs of a more significant moderation in wage growth have finally started to appear. The three-month-on-three-month annualised rate of average hourly earnings growth fell to a five-year low of 2.0% in April. Nevertheless, as Chart 1 shows this moderation still pales into insignificance when set against the much bigger upward shift in the unemployment rate, from its 2007 low of 4.5% to a 25-year high of 9.4% last month.

CHART 1: AVERAGE EARNINGS & UNEMPLOYMENT RATE

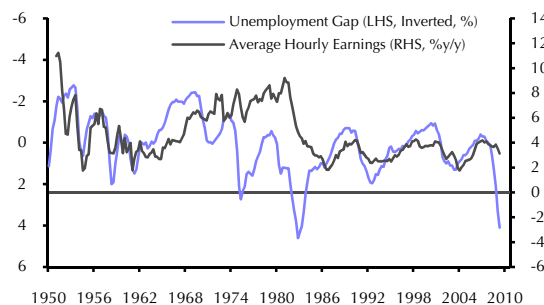


Sources – Thomson Datastream

The resilience of earnings growth looks even more unusual when compared with the amount of spare capacity that has opened up in the labour market. (See Chart 2.) We measure spare labour market capacity using the difference between the

unemployment rate and the so-called natural rate of unemployment (as calculated by the CBO). Since this measure is analogous to the “output gap” we refer to it as the “unemployment gap.”

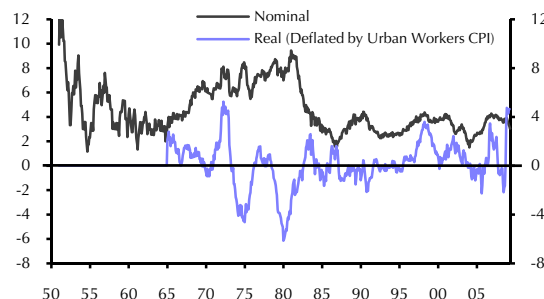
CHART 2: AVERAGE EARNINGS & UNEMPLOYMENT GAP



Sources – Thomson Datastream

This inverse relationship between average earnings growth and the unemployment gap is analogous to the traditional Phillips curve. Following the stagflation in the 1970s and early 1980s, which was caused by the successive spikes in oil prices and overly loose monetary policy, the Phillips curve relationship has re-established itself over the past 20 years. If that relationship continues to hold then average earnings could eventually decline at an annual rate of at least 2%, or even higher if the unemployment rate keeps rising.

CHART 3: NOMINAL & REAL AVERAGE EARNINGS (%Y/Y)



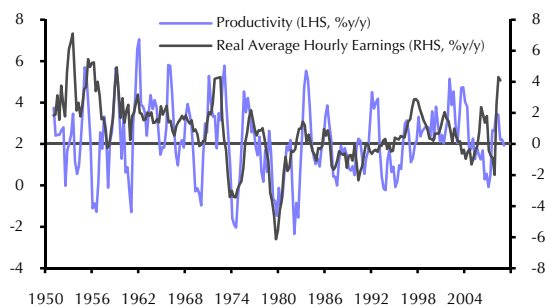
Sources – Thomson Datastream

The recent sharp fall in inflation has meant that *real* earnings growth (deflated by the urban workers CPI measure) has actually picked up. The drop in CPI inflation into negative territory means

that real earnings are now rising at the fastest rate since 1972. (See Chart 3.)

The pick up in real earnings growth is not due to an acceleration in labour productivity growth either. As Chart 4 shows, the 2% increase in productivity over the past year would normally be consistent with an outright stagnation in real earnings. Something doesn't add up.

**CHART 4: REAL AVERAGE EARNINGS & PRODUCTIVITY (%Y/Y)**



Sources – Thomson Datastream

### A history of earnings

Looking at Chart 3 and Table 1, it is not unusual for real earnings growth to fall below zero during a recession. The second column in Table 1 shows the rate of real earnings growth at the start of each recession since World War I. The third column shows the rate at which real earnings growth troughed and the fourth shows the difference between the two. The bottom line is that real earnings growth fell below zero in 12 of the past 17 recessions.

However, Chart 3 and Table 1 also show that during recessions, *nominal* earnings growth does *not* usually fall below zero. Despite falling in 17 of the past 18 recessions, by an average of 6.8 percentage points, nominal earnings growth turned negative in only four of those recessions.

Nevertheless, at the start of this recession, nominal earnings growth was already at a historically modest 4% y/y. Even a standard recession, on average would be expected to reduce that growth rate by 2.5%, to 1.5%. Furthermore, this is anything but a normal recession. The

unemployment rate is further above most estimates of its natural rate now than it has been at any time since World War II, with the notable exception of the early 1980s. The upshot is that nominal earnings growth was relatively low going into one of the most severe downturns in labour market conditions ever. Under those circumstances, it would be no surprise if nominal earnings fell this time.

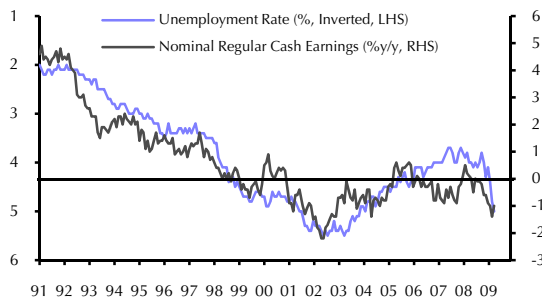
**TABLE 1: RECESSIONS & AVERAGE EARNINGS (%)**

Recessions	Real			Nominal		
	Start	Trough	Change (% pts)	Start	Trough	Change (% pts)
1913/14	n/a	n/a	n/a	5.3	0.0	-5.3
1918/19	7.6	0.3	-7.3	25.2	20.1	-5.1
1920/21	11.2	-2.2	-13.4	28.1	-14.1	-42.2
1923/24	7.5	-3.7	-11.2	8.7	0.0	-8.7
1926/27	2.8	1.0	-1.8	2.2	0.2	-2.0
1929/33	0.3	-3.5	-3.8	1.5	-13.5	-15.0
1937/38	3.9	1.1	-2.8	8.2	-1.5	-9.7
1945	3.1	-2.4	-5.5	5.4	-0.2	-5.6
1948/49	1.1	-1.0	-2.1	7.1	0.5	-6.6
1953/54	8.6	1.5	-7.1	9.0	1.2	-7.8
1957/58	1.7	-0.6	-2.3	5.2	2.5	-2.7
1960/61	2.2	-0.1	-2.3	3.7	1.3	-2.4
1969/70	0.2	-0.3	-0.5	6.1	5.5	-0.6
1973/75	-2.2	-4.2	-2.0	6.3	5.7	-0.6
1980	-7.1	-7.1	0.0	7.0	7.3	0.3
1981/82	-2.0	-2.0	0.0	8.7	3.3	-5.4
1990/91	-0.5	-2.6	-2.1	4.1	2.3	-1.8
2001	1.3	0.4	-0.9	4.1	2.6	-1.5
Average 1913-2001			-3.8			-6.8
Average 1950-2001			-1.9			-2.5

Source – Capital Economics

In most previous recessions, high inflation (and the expectation that high inflation would persist) meant that nominal earnings kept rising. This time however, price deflation (and the possibility that firms and households could eventually expect that deflation to persist) could lead to a completely different outcome. This is what happened in Japan in the late 1990s. In an environment where consumer prices were already falling, the rise in the unemployment rate to 5.5% pushed down the annual rate of nominal earnings growth to minus 2%. (See Chart 5.)

**CHART 5: JAPAN UNEMPLOYMENT RATE & EARNINGS GROWTH**



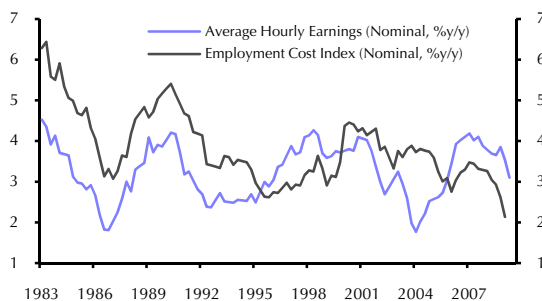
Sources – Thomson Datastream

**Recent resilience of earnings growth is temporary**

Some comfort may be taken from the fact that average earnings growth in the US has so far remained fairly resilient. Unfortunately, this appears to be due to three factors which, on closer inspection, offer little reassurance.

To start with, the strength of the average earnings figures may be a mirage because **they include only non-supervisory workers paid by the hour and, consequently, are missing the collapse in salary and bonus payments in the financial sector.** Chart 6 shows that an alternative measure of compensation, the Employment Cost Index (ECI), has recorded a marked slowdown in wage growth. In fact, on this measure, wages are rising at their slowest rate since the series was first published in 1983.

**CHART 6: EMPLOYMENT COST INDEX & AVERAGE EARNINGS**

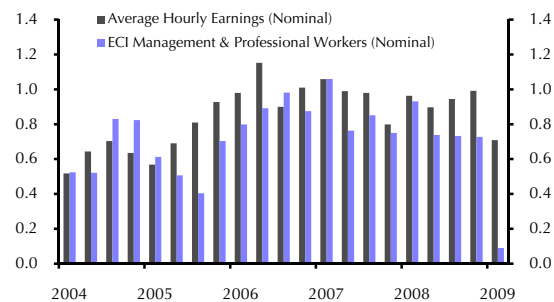


Sources – Thomson Datastream

One key difference between the ECI and the average earnings figures is that the former includes the supervisory workers that are excluded from the latter. But management and professional workers

have been hit particularly hard in this recession. The pay of those workers increased only marginally in the first quarter, which may explain the discrepancy between the two measures. (See Chart 7.)

**CHART 7: ECI WAGES & SALARIES OF MANAGEMENT WORKERS & AVERAGE EARNINGS (%Q/Q)**



Sources – Thomson Datastream

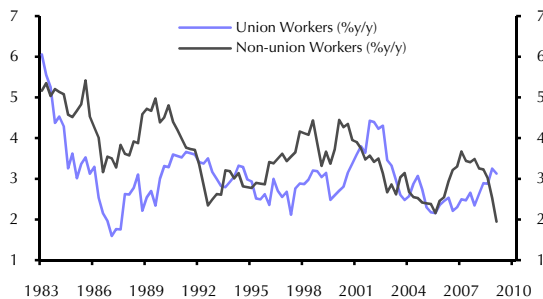
Anecdotal evidence seems to support the claim that wage growth may already have slowed quite dramatically. The Fed’s latest Beige Book reports that “continuing layoffs... and hiring freezes kept wage pressures minimal. Contacts from a broad range of industries reported pay freezes, with some noting salary reductions.”

Nominal earnings growth is also a lagging indicator. For example, in 13 of the 18 recessions since World War I, nominal earnings growth only troughed *after* those recessions finished. On average, it reached a floor 2½ months after the recessions had finished. In the recessions since 1950, the lag was longer, at 3.7 months.

**Finally, the recent resilience of average earnings growth appears to be partly a legacy of last year’s temporary bout of higher inflation.**

Chart 8 shows that while wage growth of non-unionised workers has slowed from 3.5% at the end of 2007 to a record low of 1.9%, the corresponding rate for unionised workers has risen from 2.3% to 3.1%. Unionised workers are presumably in a better position to use last year’s high rates of inflation to negotiate bigger pay deals.

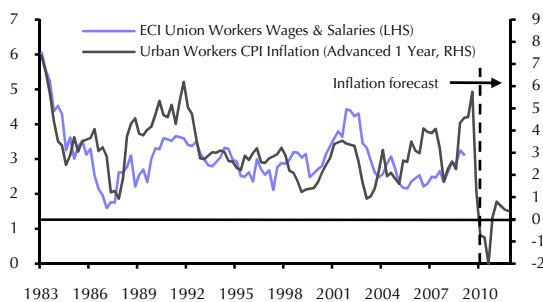
**CHART 8: ECI WAGES & SALARIES BY WORKER GROUP**



Sources – Thomson Datastream

Chart 9 shows that the wage growth of unionised workers usually reacts to changes in inflation after a year. So with CPI inflation having dropped into negative territory, it may not be long before the wage growth of unionised workers falls sharply.

**CHART 9: ECI UNION WORKERS & INFLATION (%/Y)**



Sources – Thomson Datastream

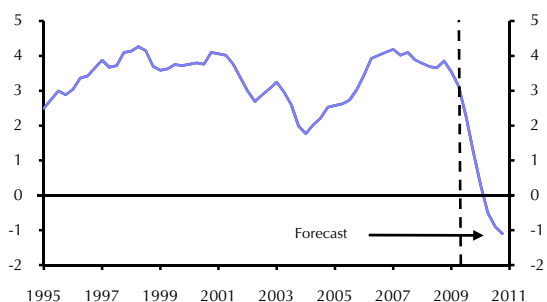
**The upshot is that we suspect nominal earnings growth will soon fall very sharply, most probably into negative territory.** It has been suggested this won't happen because workers won't accept lower wages or, in economic parlance, because wages are sticky due to downward nominal rigidities. However, a few years ago it was also common to hear the argument that house prices would never fall because sellers would never accept lower prices! If the downward pressure is big enough then wages will fall, just as they did in the Great Depression and during Japan's lost decade.

Admittedly, nominal earnings growth might not fall as far as the minus 2% or more that we suggested earlier. After all, that estimate based was on the recent Phillips curve relationship which assumed

that the natural rate of unemployment, or NAIRU, has remained stable during this recession. If the natural rate of unemployment has risen, perhaps because some of those workers who have lost their jobs in the construction or auto industries are unable to retrain and find other jobs, then any given rise in the unemployment rate will result in a more modest fall in real earnings growth.

However, the natural rate of unemployment would need to rise from 5% to 7% to prevent nominal earnings from falling at all. That isn't going to happen. So while we sympathise with the idea that the natural rate of unemployment has risen, it won't prevent earnings from falling. We think that next year earnings will fall by at least 1%. (See Chart 10.)

**CHART 10: AVERAGE HOURLY EARNINGS (%/Y)**



Sources – Thomson Datastream

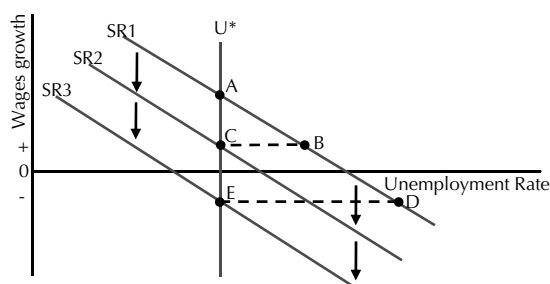
### Is negative earnings growth a big deal?

Whether or not a period of negative earnings growth is a big deal largely depends on how long it lasts, which in turn depends on whether falling wages and prices become embedded in the public's expectations. This could trigger a self-sustaining deflationary spiral.

According to the theory of the expectations augmented Phillips curve, in the long-run there is no trade-off between unemployment and inflation. In other words, the Phillips Curve is vertical at the natural rate of unemployment, labelled  $U^*$  in Chart 11. The natural rate is not associated with any one particular rate of wage growth, rather the natural rate is the only point where wage growth, regardless of its actual rate, is *stable*. If

unemployment falls below the natural rate, wage growth will be constantly rising and if unemployment rises above the natural rate wage growth will be constantly falling.

**CHART 11: EXPECTATIONS AUGMENTED PHILLIPS CURVE**



Sources – Capital Economics

The intersection of the short-run Phillips curve, labelled  $SR_1$ , and this natural rate of unemployment is the economy's starting point. At this point, labelled A, wage growth is positive. During a recession, the unemployment rate rises above the natural rate and the economy moves down  $SR_1$  to point B, which equates to a lower rate of wage growth. If nothing else happens, once the recession is over and the unemployment rate falls, the economy would move back to point A and wage growth accelerates again.

However, if the initial fall in wage growth becomes embedded in expectations, the short-run Phillips curve shifts downwards to  $SR_2$ . Once unemployment returns to the natural rate, the economy would actually end up at point C. This means that even as unemployment falls again, wage growth settles at a permanently lower rate, albeit still a positive one.

If the initial rise in the unemployment rate is large enough, however, then the economy would carry on past point B and end up at point D, where the unemployment rate is so far above the natural rate that wage growth actually turns negative. If this deflation becomes built into expectations, then the short-run Phillips curve will shift even further down to  $SR_3$ . **Until unemployment gets back down to its natural rate, the rate of decline in wages and**

**prices will continue to accelerate and the short-run Phillips curve will continue to shift downwards.** Furthermore, even when the unemployment rate eventually returns to its natural rate the economy would end up at point E, meaning that **wages would continue to fall**, albeit at a stable pace.

History shows that there are periods when this has happened. In the four recessions during which wages growth turned negative, it remained below zero for 18 months in the 1920/21 recession, for 36 months in the 1929/33 recession, for five months in the 1937/38 recession and for two months in the 1945 recession. We have no evidence for what happened to households' wage or price expectations during those distant historical episodes. Nonetheless, it is probably safe to assume that households' expectations fell sharply during the Great Depression, when earnings growth remained negative for a long period.

**There is some worrying evidence that households' income expectations have already fallen sharply during the current recession.** Chart 12 shows that the income expectations balance from the Conference Board's consumer confidence survey has recently fallen to a record low. At the moment, this balance is still consistent with earnings growth just about staying in positive territory. As the unemployment rate has yet to peak, however, households' income expectations may have yet to trough. It is possible that as wages and expectations drag each other down, earnings growth will stay negative for some time.

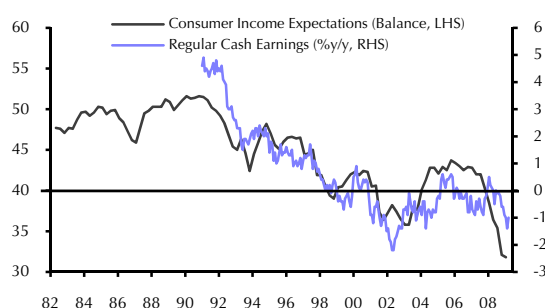
**CHART 12: INCOMES EXPECTATIONS & AVERAGE EARNINGS**



Sources – Thomson Datastream

This may sound implausible and overdramatic, but it is exactly what has happened in Japan. The interaction of falling earnings and collapsing income expectations has meant that nominal earnings have barely risen since they started falling ten years ago. (See Chart 13.)

**CHART 13: JAPAN EARNINGS & INCOME EXPECTATIONS**



Sources – Thomson Datastream

### Productivity will determine whether prices fall

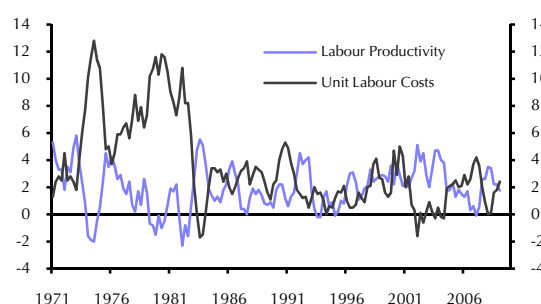
Of course, what happens to productivity and unit labour costs will determine whether a fall in wages is accompanied by a fall in *prices* as well, triggering a wage-price deflationary spiral. If productivity fell at a faster rate than wages, unit labour costs would still rise, putting upward pressure on prices. But if productivity is rising, then lower wages should lead to *lower* unit labour costs which, assuming firms are constrained by competition from raising margins, means *lower* prices.

Productivity did decline in the recessions in the 1970s and early 1980s and unit labour costs rose quite sharply. At the moment, however, the speed at which businesses are shedding jobs means that, despite the severity of the recession, productivity in the US has risen by nearly 2% over the past year. (See Chart 14.) More generally, the trend rate of productivity growth appears to have picked up in the mid-1990s and still shows few signs of slowing.

Accordingly, while we do expect productivity growth to slow to about 1% next year, we don't foresee an outright decline in productivity. Nevertheless, even if productivity growth slowed to 1% and nominal wage growth fell to minus 2%

then unit labour costs and consequently prices would likely fall.

**CHART 14: PRODUCTIVITY & UNIT LABOUR COSTS (%/Y)**



Sources – Thomson Datastream

### Falling wages and high debt - a dangerous cocktail

The final factor that would make a decline in wages potentially dangerous is the interaction between incomes and household assets and liabilities.

Over the past 20 years or so, household debt has doubled to the unprecedented level of 134% of disposable income, from 67% back in 1985. Since the nominal value of those household debts is fixed, falling wages and prices would make servicing those debts progressively harder. Falling wages would force households to devote a larger share of their shrinking incomes to paying down their debts leaving less available for spending.

In other words, there is a danger that the combination of the heavy indebtedness of US households and negative earnings growth could kick-start a debt-deflation spiral, much like what happened in Japan. Lower wages would increase the urgency among households to pay down their existing debts at the expense of consumption. Assuming productivity continued to rise, prices would fall making households even more inclined to delay spending until a future date and, completing the circle, putting further downward pressure on wages and prices.

### Lower incomes might mean lower house prices

Falling incomes would also lower the affordability of housing, potentially prolonging the decline in

house prices. If wages are falling, for current levels of affordability to be maintained, house prices would need to fall at the same rate.

As US housing now looks to be undervalued relative to incomes, however, it is possible that we could see that undervaluation corrected through a simultaneous increase in house prices even as income fell.

Table 2 makes this point more clearly. If housing were to move back to its long-run average relative to income per capita over the course of the five years from the start of 2010 to the end of 2014, house prices would need to increase by roughly 5.5% per annum more than income per capita. For example, if income per capita was unchanged, house prices would increase by an average of 5.7% per year. For house prices to fall, income per capita would need to fall by at least 5.5% per annum.

**TABLE 2: CHANGE IN HOUSE PRICES FOR A GIVEN RATE OF INCOME PER CAPITA GROWTH (2010-2014)**

Scenario	Income per capita (% p.a.)	House Prices (Case-Shiller)	
		% p.a.	Cumulative Change
1	4.0	9.9	60.2
2	2.0	7.8	45.4
3	0.0	5.7	31.7
4	-2.0	3.5	19.0
5	-5.4	0.0	0.0

Source – Capital Economics

Falling asset prices would only increase the pressure on households to reduce their debts even more. The upshot is that falling wages, coupled with the high level of household indebtedness could lead to the emergence of a pernicious debt-deflation spiral, a spiral that could take years to escape.

### Conclusion

It is not unusual for the opening up of a large amount of spare capacity in the labour market during a recession to push earnings growth down.

**What is unusual is the size of the spare capacity being generated during this recession and the fact**

**that it is happening in a low inflation environment.** The result is likely to be an outright fall in nominal earnings of at least 1% next year.

The last time earnings fell was during the Great Depression, when the spare capacity generated by the rise in unemployment also occurred against a backdrop of very low inflation. On that occasion, nominal earnings fell by 23%. Thankfully, things are unlikely to be as bad this time.

Nonetheless, for the first time in 80 years workers are going have to get used to a period when their earnings are falling. **The danger is that the heavy indebtedness of households exacerbates how far and for how long earnings fall, potentially triggering a debt-deflation spiral that once it has begun could prove very hard to break.**