

INTELLECTUAL AMMUNITION

Focus Report: The Train Wreck in Hours Worked

Wednesday, June 2, 2010

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There can be no classic "V-shaped recovery" when this time is so horribly different for labor.

The post-war rising tide of US employment has crested, and appears now to be ebbing -- judging by non-farm business aggregate hours worked (please see the chart below). Even though real output has risen vigorously over the last decade, hours worked have turned lower, breaking a 50-year uptrend. Hours fell twice as much as real output in the 2008-2009 recession, and have not responded to a substantial recovery in output. *Is the great American jobs machine simply broken?* In an April report we called this "[The Scariest Chart in Economics](#)". We've prepared this special report in response to many client requests for more detailed analysis of it.

Some quick facts:

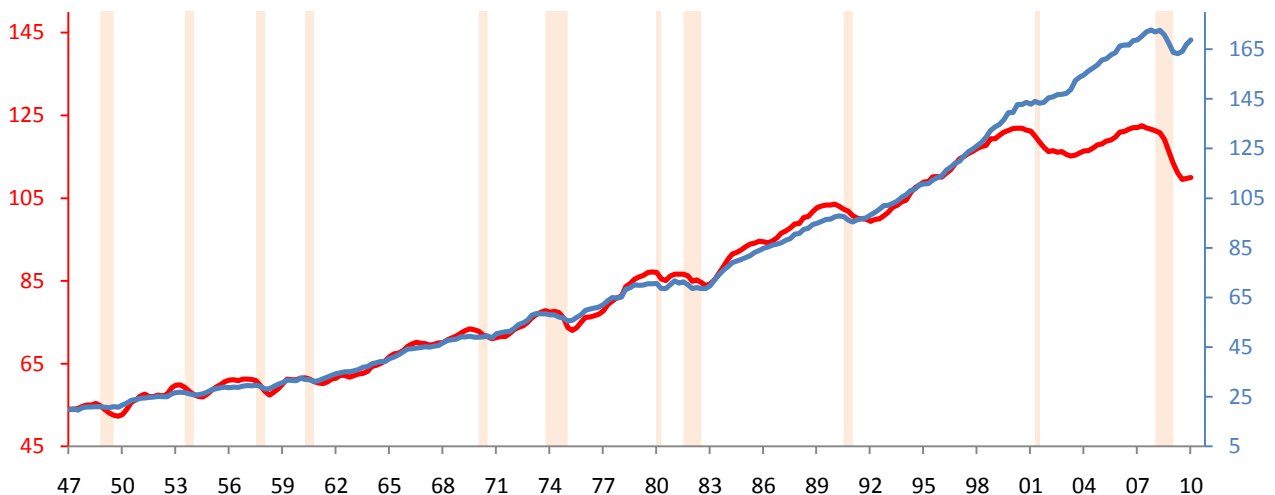
- Since the peak in Q2-2007, aggregate non-farm business hours worked fell 10.6% to their trough in Q3-2009. With only minimal improvement since then, today they are still 10.2% below peak.
- This exceeds the previous record drop of 6.3% in the 1957-1958

Update to strategic view

US MACRO: This is the worst jobless recovery ever, with hours worked below the prior trough while output is much higher. The historic drop in hours is pervasive across sectors, and is recovering least where the losses were greatest. The definitively broken post-war growth trend in hours plays into our expectation for a prolonged period of "expansionless recovery."

[\[Strategy Dashboard home\]](#)

— Aggregate hours worked index — Real output index ■ Recessions
 Non-farm business, seasonally adjusted, quarterly to 2010-Q1



Source: Bureau of Labor Statistics, NBER, TrendMacro calculations

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recession, and far exceeds the average 4.3% drop for all post-war recessions.

- The Q3-2009 trough in hours worked was 4.9% below the prior cycle trough in Q2-2003. This is the first time in the history of the data that a trough has been substantially lower than the prior cycle trough. The only exception is the double-recession of 1980 and 1981-82, in which the second trough was 1.5% lower than the first.
- Most worrisome is that the trend in hours worked *was already broken during the prior expansion*. At peak in Q2-2007, hours worked had only exceeded the prior cycle peak in Q2-2000 by an anemic 0.5%. This is far below the 10.4% average increase for post-war recessions. It is the second worst performance in the history of the data, only behind the double-recession of 1980 and 1981-82, in which the second peak was 0.6% lower than the first.
- Peak to trough around the 2008-2009 recession, output fell 5.5% while hours worked fell 10.6%. It's typical for hours to fall more than output in a recession. But the largest divergences occur in the smallest recessions. In larger recessions, the divergence is typically small. For example, in the recession of 1973-1975 (the second-worst after the 2008-2009 recession), output fell 5.4% while hours worked fell only 6.1%.
- This is the worst of "jobless recoveries," with hours worked lower than at the prior recession trough, while output is much higher.

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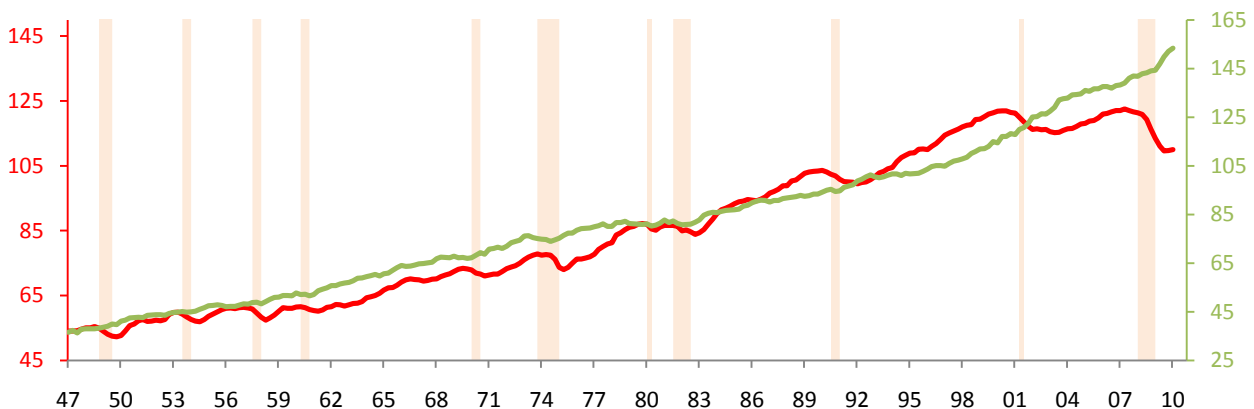
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This isn't just productivity growth

Obviously, when hours worked fall and output rises at the same time, the result is a big move upward in labor productivity. Measured as real output per hour, productivity has risen 6.3% over the last four quarters (please see the chart below). This is the seventh best 4-quarter period in the history of the data, and the best since the 4-quarter period ended Q2-1962.

— Aggregate hours worked index — Productivity index (real output per hour)
Non-farm business, SA, quarterly to 2010-Q1



Source: BLS, TrendMacro calculations

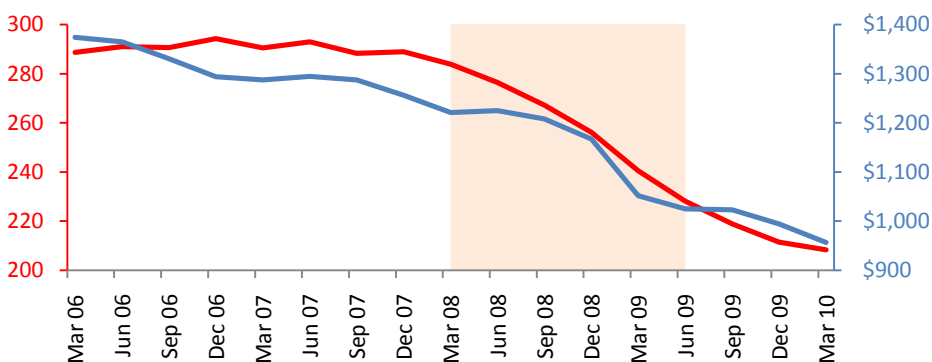
But 1962's productivity miracle was achieved far differently than today's. Then, real output grew by 9.1% at the same time as hours worked *increased* by 2.0%. *That's* a real productivity miracle. The productivity gain over the most recent 4-quarter period is the result of a mediocre 3.1% increase in real output at the same time as a 3.0% *drop* in hours worked. That, at best, is "winning ugly."

Taking a 9-quarter view that encompasses the entire experience from the peak of the prior business cycle, productivity has grown 8.1% cumulatively. While this is considerably better than the 5.2% average of all 9-quarter periods, it only ranks 33rd in the history of the data. But it is unique in being the single 9-quarter period among the 33 best *over which hours worked fell*. On average across the other 32 best 9-quarter periods, hours worked *increased* by 11.8%. So today's productivity gain is *merely good, not great*, while the decline in hours worked that is responsible for it is *uniquely bad*. We will discuss later why this may be happening.

Is the housing bust to blame?

With the 2008-2009 recession centered on the decline in fixed investment in structures, it is not surprising to see a dramatic drop in both hours worked and output in construction (please see the chart below). These drops have been roughly proportional. From the peak of overall hours worked in Q2-2007 to now, construction hours have fallen 28.9% and structures output has fallen 26.1%.

— Construction aggregate hours worked — Structures real output
Hours: weekly, billions; output: US\$ billions, AR; SA, quarterly to 2010-Q1



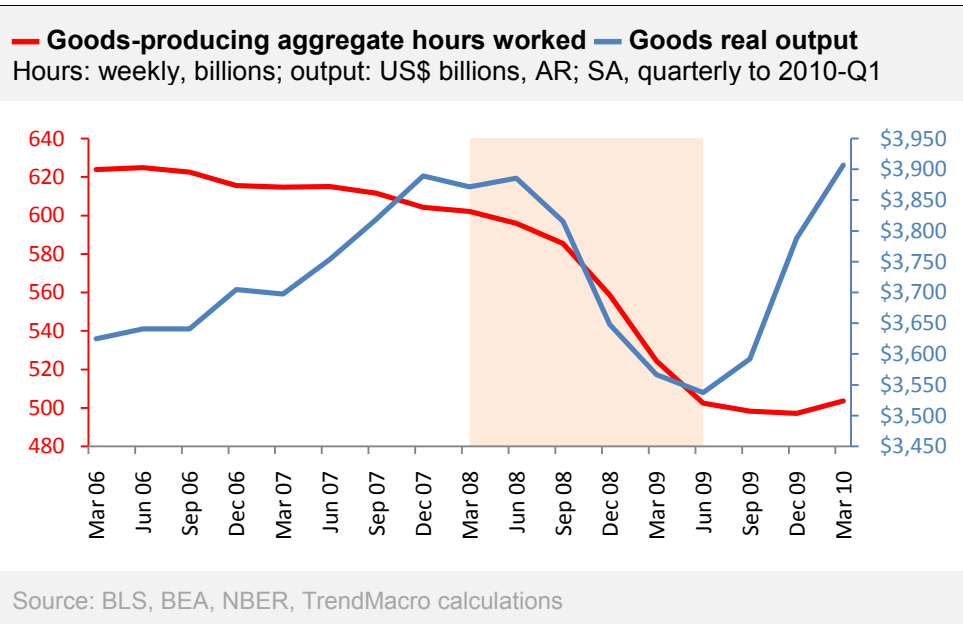
Source: BLS, Bureau of Economic Analysis, NBER, TrendMacro calculations

But this doesn't fully explain the present overall drop in hours worked. The construction sector simply isn't large enough. At the peak of overall hours worked in Q2-2007, construction represented only 7.5%. Yes, it does explain a disproportionate 24.5% of the overall drop in hours worked. And it goes some way towards explaining the present divergence between recovering output and stagnating hours. While output in the rest of the

economy is recovering somewhat, structures output continues to make new cycle lows. So there's no relief for hours worked in the sector that made such an outsized contribution to the decline. But as we'll see, that's only a partial explanation. It doesn't explain why, since the Q2-2007 peak in hours worked, hours outside of the construction sector are off 7.8% while real output outside of structures is up 3.2%.

Are we defining "construction" too narrowly?

The boom and bust in housing reached out and touched all corners of the economy, both those sectors directly related to housing (such as kitchen appliances, mortgage banking), and all other sectors indirectly through shocks to household wealth and to the stability of the banking system. The hardest hit were goods-producing sectors, both those that manufactured materials and equipment associated with construction, and those that manufactured credit-financed consumer durables. From the Q2-2007 peak, hours worked in goods-producing businesses have fallen by 18.1% -- two thirds as much as they fell in construction -- and there is so far almost no recovery underway (please see the chart below). Here we see strong divergence between hours and output -- goods output fell from peak by as much as 5.8% at the worst of it, and has now recovered to new all-time highs (though still far from trend).



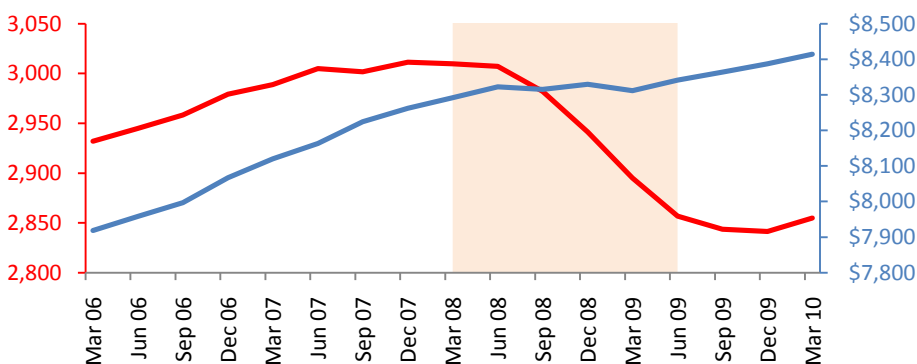
This would appear to bring us closer to locating the problem. At peak, goods-producing jobs were 15.8% of hours worked. Their drop explains an outsized 32.2% of the drop in overall hours worked. Combined with construction, we're looking at 23.2% of peak hours worked, and the explanation for 56.6% of the overall drop. But the mystery isn't really solved yet.

Services are implicated, too

We've found the sources for 56.6% of the drop in hours worked. The remaining 43.4% is attributable to the service-producing sector of the economy -- which is everything left over once we've removed construction and goods-producing. Though this completes our attribution across economic sectors, the mystery of the train wreck in hours worked only gets deeper and more troubling.

In the services sector, there has barely been a recession at all in terms of real output (please see the chart below). Services output had only two negative quarters (Q3-2008 and Q1-2009), and has been making new all-time highs consistently for the last four quarters. This echoes what we've been saying throughout -- despite the consensus for a "new normal," the credit-cycle induced 2008-2009 recession was almost exclusively due to the collapse in fixed investment, showing up as sharp drops in structures, capital investment and durables -- *not* a general retrenchment in consumption (see, most recently, ["The Consumer: QED"](#) April 16, 2010). Yet for all that, with services output higher by 3.1%, hours worked in services-producing jobs have nevertheless fallen 5.8%.

— Services aggregate hours worked — Services real output
Hours: weekly, billions; output: US\$ billions, AR; SA, quarterly to 2010-Q1

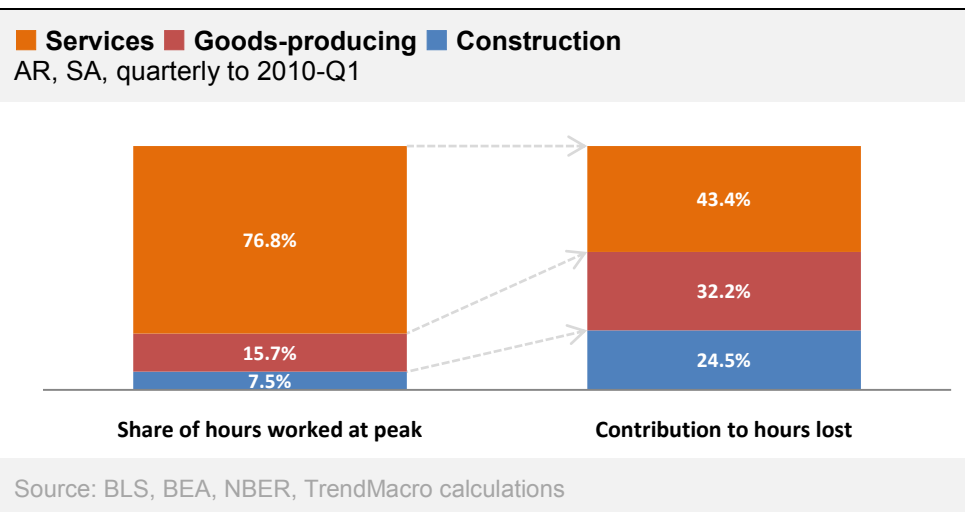


Source: BLS, BEA, NBER, TrendMacro calculations

The service sector matters tremendously because it's where the majority of hours worked are. At the peak in Q2-2007, it represented 76.8% of overall hours worked. This is the sector where hours worked have declined the least, so by traditional business cycle logic we would not look here for a driver of rapid recovery from a low base. But in the sectors that have seemingly established low bases -- construction and goods-producing -- there's pretty much no recovery in hours under way at all. In services, the growth rate of hours worked is slightly higher than that of output. At least this recovery is taking place in the largest sector. But it will take much more than the growth rate in services hours we're seeing now for hours to catch up with output.

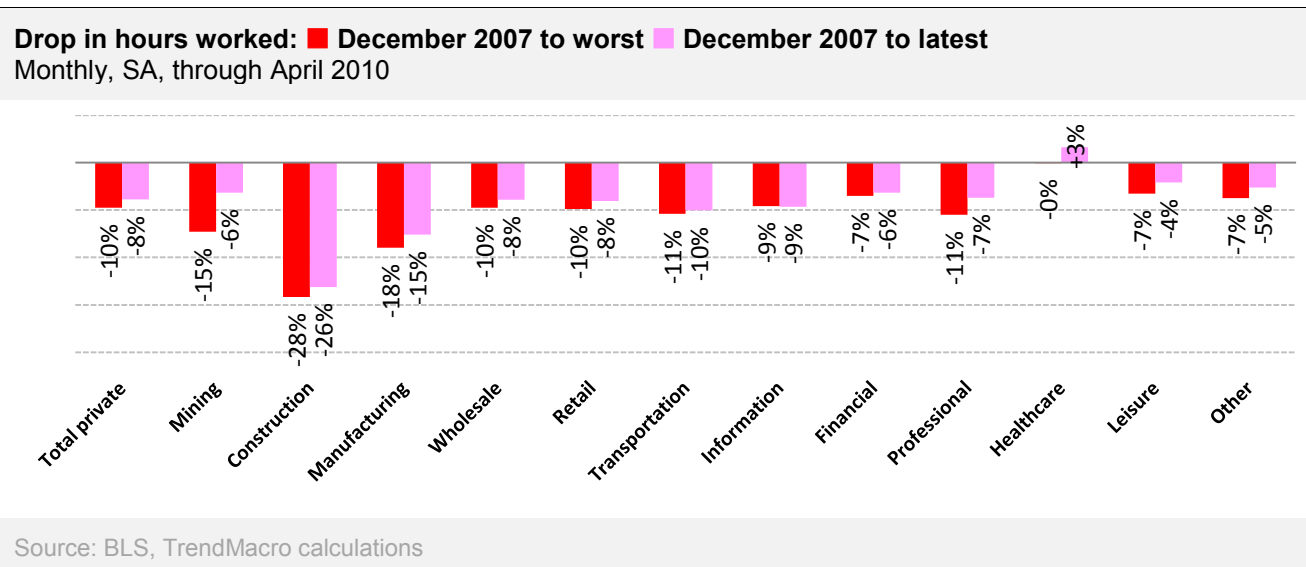
Let's review what we've learned so far:

- Hours worked have declined from their Q2-2007 peak in all major sectors -- construction, goods-producing and service-producing.
- The decline has been disproportionately centered on construction and goods-producing, which account for a minority of hours worked to begin with (please see the chart below).
- Output has recovered in services-producing and goods-producing sectors. But hours worked are hardly recovering at all except in services, where they declined the least and the recovery is modest.
- Neither output nor hours worked in construction show any sign of recovery.



Sector by sector

Looking deeper, we see that hours worked in all sectors have been affected (please see the chart below). They've recovered to new highs in



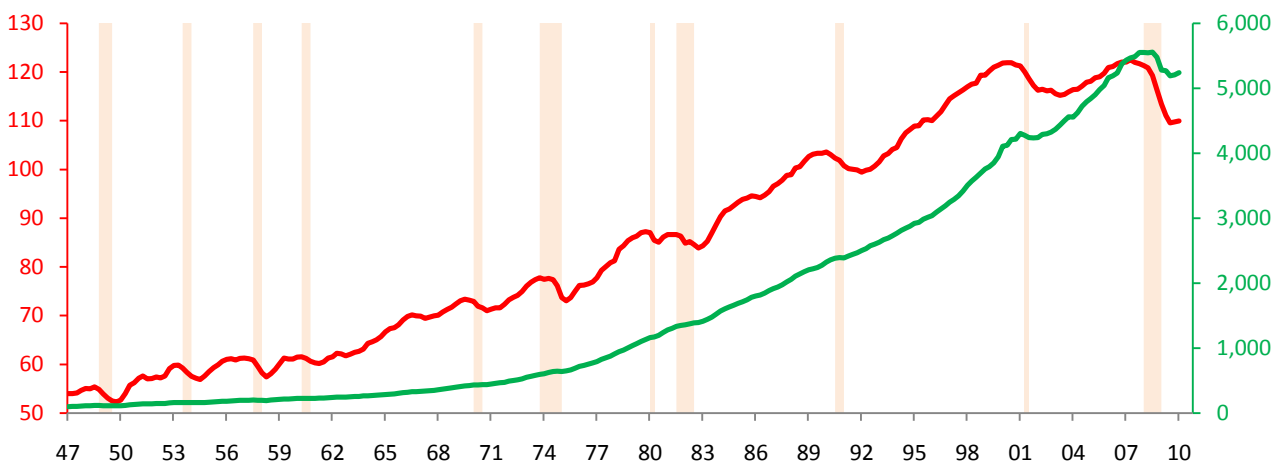
only a single employment sector -- healthcare -- in which they didn't fall at all in the recession. In every other sector, even those where hours fell most sharply -- such as construction -- there are only slight signs of improvement. The hard-hit sector that has recovered the most is mining, but it is responsible for less than 1% of hours worked in the economy.

Labor's nightmare

The 6.5% peak-to-trough drop in aggregate real compensation in the 2008-2009 recession is the largest drop in the history of the data (please see the chart below). Across other post-war recessions, it has actually *increased* by 0.3% on average. Stickiness of wages and the tendency of workers in the US economy to constantly migrate to increasingly productive positions has typically been enough to offset most declines in hours worked. But this time, hours worked fell so much they overwhelmed the 4.4% gain in compensation *per hour* since recession onset. At least, thanks to that offsetting gain, aggregate compensation hasn't fallen as much as aggregate hours.

— Aggregate hours worked index — Real compensation index

Non-farm business, SA, quarterly to 2010-Q1



Source: BLS, NBER, TrendMacro calculations

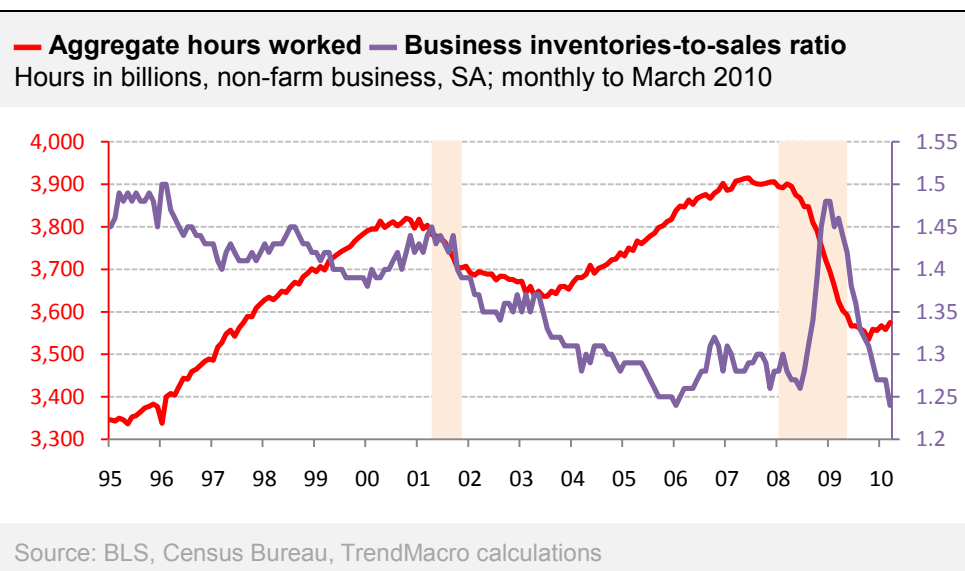
Why?

We'll cut to the chase and admit that we don't have a fully satisfying answer to the question of why hours worked have broken their post-war trend in the face of strong output growth. We'll touch on several possible explanations that have emerged in discussions with clients.

First, we think we have already dismissed the idea that the train wreck in hours worked has been due simply to the boom and bust in housing. As

we've already discussed, it leaves unexplained the sharp drop in hours worked across *all* employment categories, and the failure of hours to respond to a revival in real output. And it does not explain why hours worked failed to keep up with output in the 2002-2007 expansion when the housing boom was in full swing (though the involvement of undocumented workers in construction, discussed below, may account for that).

Second, it is notable that the train wreck in hours worked had its origin in the late 1990s. In the final years of the 1990s boom, hours worked stopped growing though output continued to grow; then in the 2001 recession, hours worked fell sharply while output growth only slowed; and then in the subsequent recovery output grew to new highs while hours worked did not. It's tempting to associate these events with the efficiency revolution of the same years enabled by the simultaneous emergence of the Internet and the mainstreaming of globalized supply-chain management techniques pioneered first by Wal-Mart. As businesses have learned to work with smaller inventories of physical goods -- the inventories-to-sales ratio is at an all-time low -- perhaps they have learned also to work with smaller inventories of human resources (please see the chart below).



This explanation may offer explanations for why the present leap in measured labor productivity, unlike all those before it in history, has not translated into employment gains.

- At the risk of over-simplifying, the Internet/Wal-Mart revolution of the last decade has been not predominantly about doing new things, but rather about doing old things more efficiently. That means, practically by definition, using less labor. That revolution has not yielded, so far, enough new activities in which displaced labor can be redeployed.
- This problem is exacerbated by the unusually rapid current pace of innovation, with much of it occurring in the virtual realms of information and organization. As consumers, people can *adopt* new

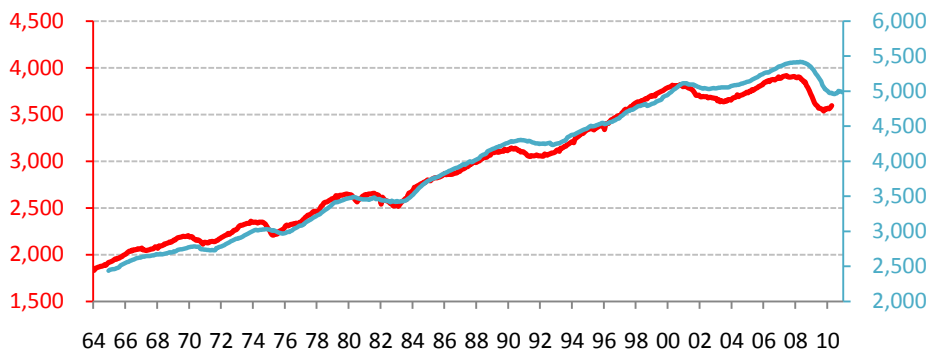
technologies rapidly -- but as workers, they cannot so rapidly *adapt* themselves to those technologies.

- Thus we could interpret the present gap between output and hours worked as nothing more than a *lag*. At least that's a glass-half-full way of seeing it. But unless the pace of innovation slows, or the pace of labor adaptation accelerates, why shouldn't the lag just get longer and longer -- and gap between output and hours worked bigger and bigger?

Third, on a related note, it could be that off-shoring of US jobs is the culprit. Surely this goes some way toward explaining the drop in hours worked, especially in goods-producing sectors. But it leaves conspicuously unexplained why real output growth has been so strong -- since off-shored production is not counted as domestic output. Perhaps it's sufficient to say that low labor costs in emerging economies have raised the productivity bar for domestic investments -- only the most labor-efficient activities will now be undertaken on-shore.

Aggregate hours worked: — Payroll survey — Household survey

Hours in billions, non-farm business, SA or smoothed; monthly to March 2010



Source: BLS, TrendMacro calculations

Fourth, could the train wreck in hours worked be the result of an increasing number of illegal aliens contributing to output, but not being picked up in labor statistics? There is some tentative evidence to support this, by comparing aggregate hours worked as between the Bureau of Labor Statistics' two monthly surveys, the "payroll" and the "household." The former is unlikely to pick up undocumented workers because it is derived from payroll data; the latter at least has a chance of picking up illegals, because it is derived from interviews with individuals whose legal status is not questioned in the process. Whether it is for this reason or some other, hours worked look like a somewhat smaller train wreck when viewed through the household survey (please see the chart above).

- After the Q2-2000 peak, hours worked according to the payroll survey declined by as much as 5.5%, and didn't bottom until Q2-2003 in what was correctly regarded as a jobless recovery. But the recovery wasn't jobless for the household survey -- presumably

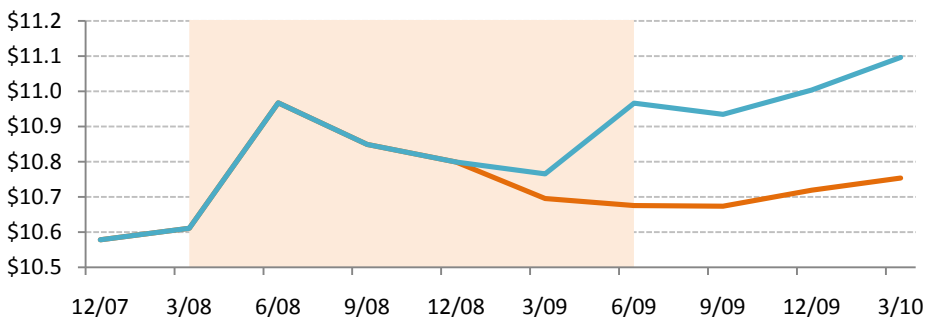
including illegals -- where the drop in hours was only 1.6%, bottoming in Q3-2001, *before* the official recession end in Q4-2001.

- The Q2-2007 peak in hours worked exceeded the Q2-2000 peak by only 0.5% according to the payroll survey. But the household survey's peak -- presumably including illegals -- exceeded the prior one by 10.0%. This could be explained by an influx of illegals in construction trades at the peak of the housing boom.
- Since the Q2-2007 peak, hours worked fell at worst by 10.6% according to the payroll survey. But the household survey's hours worked -- presumably including illegals -- fell 8.5%. This is a smaller drop, but it would still make a post-war record. And this only deepens the mystery: in the housing bust, why wouldn't a survey that included illegals have performed *worse* than one that did not?

Fifth, it's been suggested that various "stimulus" programs have supported consumption-driven output, while at the same time dis-incentivizing the labor force from aggressively seeking additional employment. We can't rigorously prove these things one way or the other. But it is demonstrably true that the sharp drop in aggregate real compensation described earlier has been masked by stimulus over the last year. The largest program, the American Reinvestment and Recovery Act (ARRA), has so far bolstered disposable incomes with \$193 billion in transfer payments and \$118 billion in tax reductions and rebates.

Disposable personal income: — Reported — Without ARRA

Nominal, US\$ trillions, SAAR quarterly to Q1-2010



Source: BEA, TrendMacro calculations

As a result, disposable personal income is reported as having grown to new all-time highs -- and no surprise, consumption has been strong, though hours worked have fallen. But without subsidies, there's organic income growth only versus the level of eight quarters years ago, and a decline versus that of seven quarters ago (please see the chart above).

Where to now?

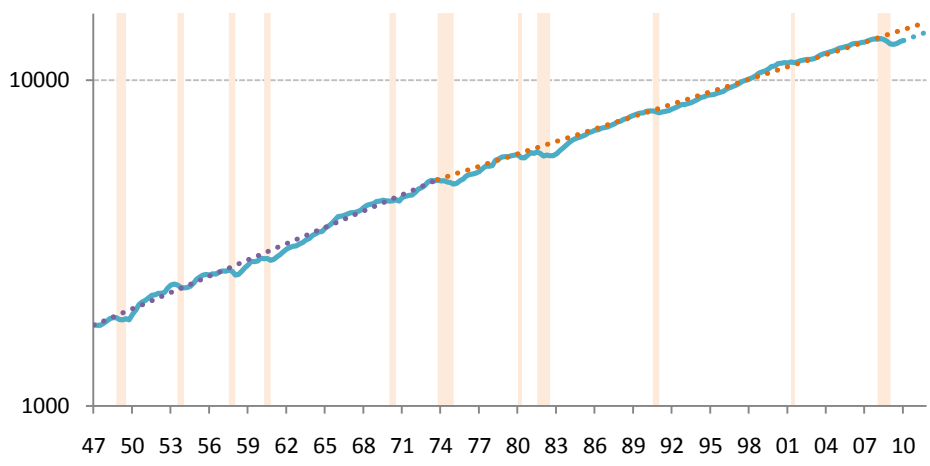
None of the candidate explanations for the train wreck in hours worked holds out much hope that this apparent secular trend break can be

mended. Adjusting for undocumented workers makes the problem seem less severe, but it doesn't make it go away by any means -- and besides, an increasingly underground labor economy would have its own difficulties.

Could more stimulus help? We're skeptics on that from first principles, but if it were to work anywhere, then concentrating it on the single sector that has experienced the worst wreckage and in which government is a natural participant -- construction -- could have some potential for restoring both output and hours. But despite the common-sense consensus for spending stimulus money on "infrastructure" projects, very little of such spending has been done. The vast majority of ARRA dollars spent so far have been for income supports, which by their very nature are spread very broadly across all sectors, regardless of the amount of slack in any particular one.

If the reality is that American business has entered a period of productivity in which output can grow despite shrinking labor contributions, then the train wreck in hours worked will likely be with us permanently in some form. That's not to say that hours worked won't increase from here as output increases. They surely will, and barring another recession right away, we think hours worked will soon return to their trend *growth rate*. That's been about 1.3% *per annum* historically, and that's the rate at which hours worked in the service sector have been growing over the most recent two quarters. But so far that's as good as it gets. And it's definitely not to say that hours worked will *ever* get back to their trend *level*. If they do not, then we should expect a secular shift higher in average unemployment rates.

Real GDP: — Actual — 3% forecast — 3.9% growth — 2.9% growth
 Log scale, US\$ billions SAAR, quarterly to Q-2010, assumes 3% growth forward



Source: BEA, TrendMacro calculations

It's two problems in one, really. Output itself is already back to trend *growth rates*. Post-1973 trend growth has been only 2.9%. But output has to grow at well above that to get back to its trend *level* (please see the chart above). That's not happening so far. In what we believe is an

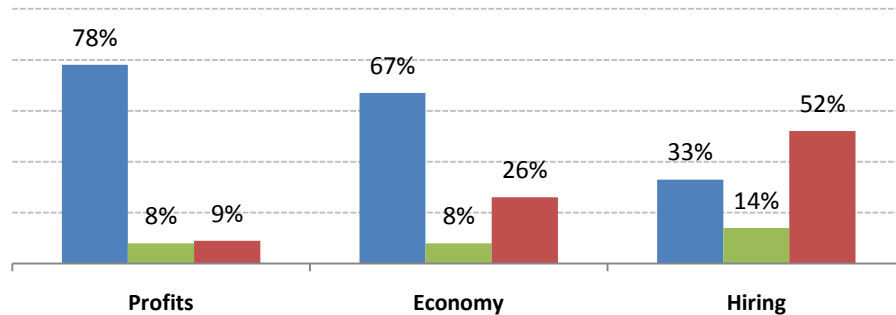
"expansionless recovery" (see ["So Much For The 'V'"](#) May 21, 2010), it's not going to happen for years, even posing a decelerating trend. If output can't get back to trend levels, then surely hours worked will not.

Let's set aside theoretical macro arguments and look at real-world survey data. Employers generally expect better economic and profit performance ahead -- but are only marginally reflecting this optimism in their hiring plans (please see the chart below).

North American executive expectations for six months ahead

■ Better ■ Worse ■ Same

As of April 2010



Source: McKinsey & Company

Survey yourself with this simple acid-test question: *right now would you hire a single additional employee that you didn't absolutely need?* As long as your answer is "no," then we face a secular trend of stagnant growth in hours worked, and higher average unemployment rates than the US has historically been accustomed to.

Bottom line

This is the worst jobless recovery ever, with hours worked below the prior trough while output is much higher. The historic drop in hours is pervasive across sectors, and is recovering least where the losses were greatest. The definitively broken post-war growth trend in hours plays into our expectation for a prolonged period of "expansionless recovery." ▶

Acknowledgement

Thanks to Tom Demas for significant contributions to the interpretive elements of this report.