

CHINA ECONOMICS FOCUS

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A new angle on Chinese growth

- **A little-noticed report published last week by the People's Bank of China (PBC) gives arguably the best estimate yet of how much China's economy slowed at the end of last year and how rapidly it has since accelerated.**
- The PBC report is, as far as we know, the first from the government to be based on consistent seasonally-adjusted estimates across a range of key measures. These estimates allow changes in output, spending and prices to be tracked on a quarter-on-quarter basis or month-on-month rather than the usual year-on-year comparisons that have been distorted by the economic downturn at the end of last year.
- **The PBC suggests that GDP expanded at an annualised pace of nearly 15% in Q2.** However it gives a surprisingly high estimate for the pace of growth in Q4 and Q1, and also suggests that the abrupt shift in growth happened in Q3 rather than Q4. This is hard to square with evidence from elsewhere.
- **Deflationary pressures have diminished but have not entirely dissipated,** according to the PBC. Consumer prices fell in June, having been flat or rising over the preceding five months.
- Industrial output contracted in Q4 but has since rebounded strongly. According to the PBC's figures, it is now expanding at a pace in line with the average rate of growth of the last few years. **Investment has picked up far more dramatically.** Fixed investment growth dropped back to an annualised pace of 47% q/q in Q2 after 60% growth in Q1. **However these estimates are only as good as the underlying data about which there are good reasons to harbour doubts.**
- Meanwhile, real retail sales have accelerated gradually since mid-2007. **The global financial crisis has apparently not knocked Chinese consumers off their stride. And the PBC confirms the surge in Chinese imports.** It estimates that imports grew by 21% q/q in real terms in Q2.
- These last two findings suggest that potentially significant shifts are underway in China's economy (although we suspect that a large part of the import surge was driven by stockpiling rather than final demand). Nonetheless, questions over the GDP and investment figures are a reminder that **doubts about the accuracy of China's official data will not be put to rest when the government starts publishing seasonally-adjusted data regularly next year.**

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A new angle on Chinese growth

A new source

A little-noticed report published last week by the People's Bank of China (PBC) gives arguably the best estimate yet of how much China's economy slowed at the end of last year and how rapidly it has since accelerated.

The report is titled "An analysis of the macroeconomic situation in the second quarter of 2009". **It is, as far as we know, the first from the government to be based on consistent seasonally-adjusted estimates across a range of key measures, including GDP and inflation**¹. The National Bureau of Statistics (NBS) is working towards providing seasonally-adjusted estimates of GDP but these are not expected to be released until next year.

From its seasonally-adjusted figures, the PBC is able to estimate, for example, how rapidly the economy grew in the second quarter relative to the first and to track more precisely recent shifts in inflation. Without seasonal adjustment, we are forced to focus on year-on-year changes. But after the swings of the past year, these tell us little that we did not already know.

The figures in the report are not, formally speaking, official estimates – for those we will have to wait for the NBS. But they make interesting reading all the same.

The PBC has undertaken a concerted effort to strip seasonal and calendar variations – we'll get into some of the details below – following procedures similar to those underway behind the closed doors of the NBS. The PBC is also apparently working from underlying data that outsiders don't get to see. For example, the NBS only publishes figures showing y/y growth in real value-added in industry, which leaves little to go on when trying to estimate how output is changing from month to month.

¹ "2009 年二季度宏观经济形势分析" available in Chinese at www.pbc.gov.cn/detail.asp?col=100&id=3313

For these reasons, the PBC's estimates should be more reliable than those of outsiders. In addition, the PBC is under less pressure to keep the adjusted quarterly data consistent with already-published annual growth figures (about which many observers, including ourselves, have doubts). As a result, **the People's Bank estimates may also be a closer approximation of reality than those forthcoming from the NBS.**

The report contains analysis of GDP, inflation, industrial output, investment, retail spending, income, and trade. We relay the findings and comment on them in turn below. Most of the data in the report are presented as graphs. The Bank analysts who produced the report told us that the data are for internal use and declined our request to see them. So in the sections that follow we have simply reproduced the PBC's graphs, reformatted them and in some cases added some series for comparison. We are confident that the data we have reverse engineered in this way are accurate to a decimal place or so.

First though, an illustration of the value of seasonal adjustment, and a few words on how the PBC has tackled it.

Accounting for seasonal variation

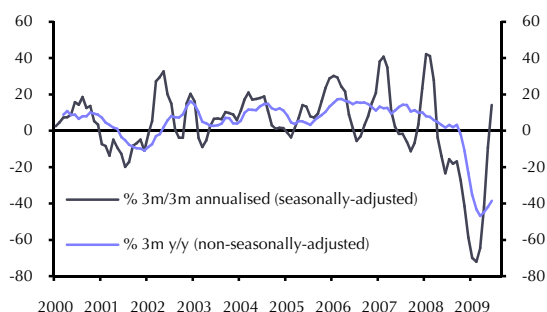
The value of seasonal adjustment is that it allows meaningful comparison of data in sequential terms (month-on-month or quarter-on-quarter). Some recent data from Japan provide a striking example of the difference this can make compared to looking only at annual rates of growth.

Japan's exports contracted by nearly 40% y/y in Q2, which was only fractionally better than the trough hit in Q1 (-47% y/y). In q/q terms, the same non-adjusted data were much more encouraging. But Japanese exports are always low in the lull after Christmas and around Chinese New Year. Only by using seasonally-adjusted data can we tell whether the second quarter's performance

represented a genuine improvement or the usual seasonal bounce-back.

As Chart 1 shows, the underlying situation was encouraging. In seasonally-adjusted terms, exports rose by 3.4% q/q in Q2, equivalent to annualised growth of 14%. Any analysis that focuses only on the y/y growth rate misses the most important part of the recent story.

CHART 1: JAPAN EXPORTS (¥)



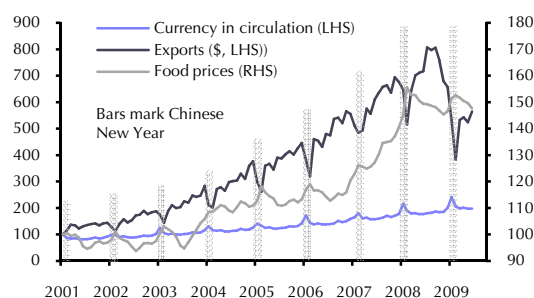
Sources – Bloomberg, Capital Economics

The methods used to seasonally adjust data are well-established. The PBC has adapted a variant of the ARIMA statistical approach that is used by statistical authorities in the US, Japan, UK, Canada and New Zealand.

This enables it to accommodate the effects of one-off events (such as the SARS outbreak), fixed seasonal effects (such as strengthening of exports in the run-up to Christmas or dips in food prices after harvest), leap year effects, and differences in both the overall length of months (or quarters) and the number of trading days within them.

Most importantly though, the PBC can adjust for the timing and influence of Chinese New Year, which has wide-ranging effects on the economy. For example, many businesses shut down at this time and many workers take extended holidays. The festival involves elaborate meals, and the giving of gifts of money. The result is that industrial output and exports weaken, food prices rise, and demand for cash temporarily soars. (See Chart 2.)

**CHART 2: SEASONAL VARIATION IN CHINESE DATA
(JAN 2001=100)**



Sources – Thomson Datastream, Capital Economics

Complicating the analysis, Chinese New Year can fall anywhere between mid-January and mid-February, so its impact on individual months' data is not constant from year to year.

Seasonally-adjusted data are of course only as accurate as the unadjusted data used to create them. The same doubts which surround some of China's official data will still hang over them when adjusted. In addition, since statisticians can only estimate the degree to which seasonal factors affect data, adjusted data will be subject to greater uncertainty than the underlying data.

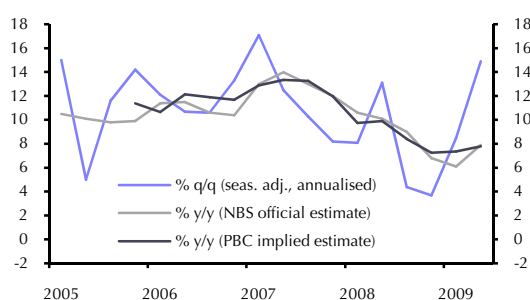
The accuracy of the estimates rises with the number of observations. Most statisticians recommend using a minimum of 50 observations to be sure of reasonable accuracy. For China, that suggests that most high profile monthly data series (which on the whole are available from the start of the current decade or before) can be adjusted fairly well. But the NBS has published only 39 data points for growth of quarterly GDP, which suggests that adjustment of the underlying levels data could be subject to significant errors. With that caveat, what do the PBC data show?

GDP rebounding

First, and arguably most important, is GDP. According to the People's Bank, the economy expanded at an annualised rate of 14.9% in the second quarter, following increases of 3.7% and 8.5% in Q4 and Q1 respectively. (See Chart 3.)

The Q4 figure seems surprisingly strong given speculation that the economy effectively ground to a halt at the end of last year. If we use the adjusted quarterly growth figures to derive an annual pace of growth (i.e compound the q/q growth rates over four consecutive quarters), we find that **the PBC estimate of growth was slightly higher than the official estimate published by the NBS in Q4 and substantially higher in Q1**. The PBC's quarterly estimates are consistent with the NBS y/y figures for most of the preceding couple of years. (See the black line in Chart 3.)

CHART 3: CHINA GDP



Sources – PBC, Capital Economics, NBS

If the NBS data were correct, this would imply that the PBC estimates overstated quarterly growth in Q4 and Q1 but then understated it in Q2 when the two estimates came back in line (i.e the gap between the grey and black lines in Chart 3 closes).

However, if our suspicions that the NBS too has overestimated the pace of growth are well-founded, then the PBC estimates of growth around the turn of the year are even more exaggerated.

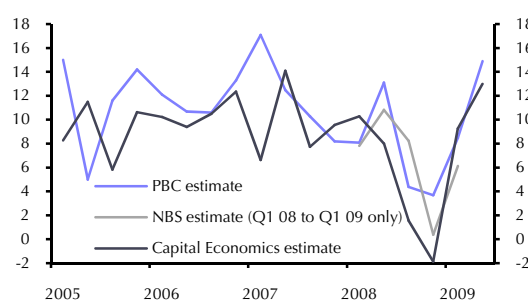
A second issue is that the PBC's figures show the economy slowing abruptly in Q3 last year, with only a small further deceleration in Q4. This flies in the face of other evidence, for example from exports, that the economy weakened abruptly in Q4. For example, we estimate that real exports were still rising by 13% y/y in Q3 but fell by 2% in Q4. (More on exports later.)

How do the PBC GDP estimates compare with other measures? The NBS does not yet release estimates of seasonally-adjusted GDP growth. However in June it published an essay on its website by an NBS official, Guo Tongxin, which provides estimates of various seasonally-adjusted data over a short time period ending in the first quarter this year². According to the NBS, these represent Guo's personal views, but they might be read as the NBS's first stab at seasonally-adjusted estimates.

Guo's data show q/q GDP growth dropping off much more in Q4. Indeed, Guo estimates that growth bottomed out at just 0.1% q/q at the end of last year. This seems to tally with general perceptions of economic weakness at the time, and would explain better than the PBC figures why the government felt compelled to respond with its stimulus package.

Guo's quarterly figures, when compounded, are roughly consistent with the annual growth figures published by the NBS for both Q4 and Q1.

CHART 4: CHINA GDP (% Q/Q, ANNUALISED, SEAS. ADJ.)



Sources – PBC, NBS, Capital Economics

Our own estimate of quarterly growth is included along with those of the PBC and the NBS (Guo's estimates) in Chart 4. Ours is based on a seasonally-adjusted version of our China Activity Proxy (CAP), which we constructed to gauge the pace of activity in China. **It suggests that China's**

² “对当前几个宏观经济问题的初步分析” available in Chinese at www.stats.gov.cn/tjfx/grgd/t20090623_402567275.htm

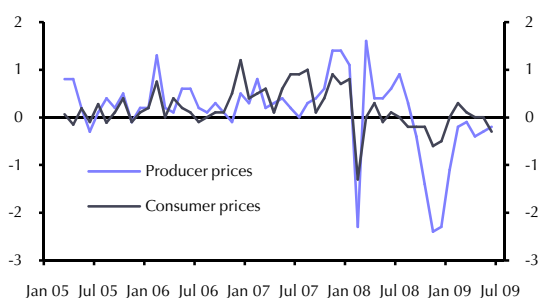
economy contracted by 2% or so at the end of last year.

However the CAP backs up the assessment from the PBC that growth has accelerated rapidly since then. (See our *Asian Economics Update* from Wednesday for more.) As the PBC notes, turning points in quarterly growth tend to lead those of growth in annual terms by one or two quarters. If this holds, the pace of annual growth in China will continue rising to the end of the year.

Consumer prices fell in June

The PBC measures of inflation run until June. While the annual rate of consumer price inflation has been negative since February, the PBC's seasonally-adjusted measure shows that prices were flat or rising for each of the first five months of the year. However, **prices fell for the first time this year in June, suggesting that – for all the recent concerns about monetary easing leading to a take-off in inflation – the risk of deflation cannot be entirely dismissed.** (See Chart 5.) Inflation still seems more likely over the medium term, but consumer price inflation at least is likely to be subdued for several months yet.

CHART 5: CHINA CONSUMER & PRODUCER PRICES (SEAS. ADJ., % M/M)



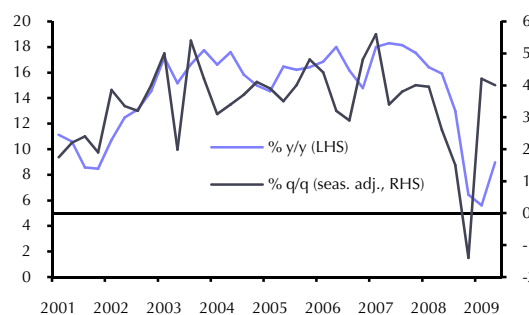
Sources – PBC, Capital Economics

Producer prices appear to have stabilised according to the PBC, although they remain well down on their level a year ago. The swing in prices has been most dramatic for primary goods, while prices of intermediate and final goods have been more stable. This should help corporate margins along the production chain.

Industrial recovery

China's slowdown hit industrial output hard. (By contrast, the service sector and agriculture have suffered less damage.) In y/y terms, industrial value-added is still weak. The NBS estimates confirm the weakness of the fourth quarter – they show that output contracted by 1.4% q/q. However they also suggest that the turnaround has been impressive. Industrial value-added expanded by 4.2% q/q in Q1 and 4.0% q/q in Q2, which returns it to the average pace of growth of the past few years. (See Chart 6.)

CHART 6: CHINA INDUSTRIAL VALUE-ADDED (VOL.)



Sources – PBC, Capital Economics

Investment

Given China's reliance on investment to fuel its recovery, the monthly data on urban fixed investment are watched closely. Unfortunately, interpreting them is hard. They are not a measure of value-added, rather of gross spending, so the surge in property transactions this year for example will have boosted headline investment growth without resulting in any addition to the capital stock.

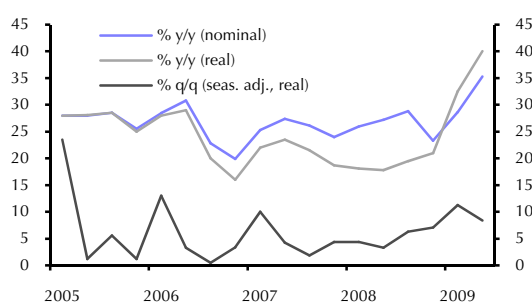
What's more, in order to deflate the nominal numbers we have to decide which is the appropriate price index to use. Do we use property prices? The prices of investment goods such as commodities? Producer prices? We try to estimate a fixed asset investment price index to do the job. But, having done so, we have a degree of scepticism of what comes out the other side.

We have other doubts – such as whether fixed investment reported to the NBS represents spending actually happening now or spending budgeted now. The close correlation between loan growth and reported investment growth this year points to the latter – the loans were mostly parked in hard-to-access savings accounts, which suggests they were not being spent.

Since the PBC relies on the NBS for its investment data, the same doubts are carried over. As Chart 7 shows, **the seasonally-adjusted data show a steady acceleration in real q/q investment from Q3 last year – i.e. before loan caps were lifted at the end of October or the stimulus announced in November.**

In Q2, the PBC reports that real fixed investment expanded 43.7% y/y, up from 31.5% growth in Q1. However, in q/q terms, growth dropped back, although it continued to expand at an annualised pace of 47.2%. **Real annualised growth reached 59.5% q/q in Q1, according to the NBS.**

CHART 7: CHINA URBAN FIXED INVESTMENT



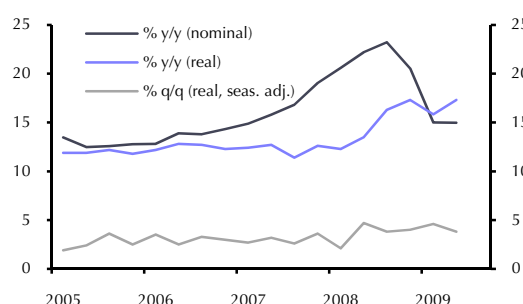
Sources – PBC, Capital Economics

Retail sales

China’s consumers have been the quiet heroes of the last year. While the government and the state-owned banks have made a big splash with their stimulus efforts, most of that has been directed at helping industry, with the benefits to consumers (for instance, from an expanded rail network, or better healthcare provision) likely to materialise only over a period of years. In a sense that focus has been vindicated by the resilience of consumer spending.

As Chart 8 shows, q/q growth in real retail spending (the grey line) has been accelerating since mid-2007. It dipped back briefly as food prices peaked in early 2008. But **this evidence suggests that the more recent advent of the global financial crisis has not knocked consumers off their stride at all.**

CHART 8: CHINA RETAIL SALES



Sources – PBC, Capital Economics

Of course, as we have reiterated over the past few years, retail sales are an imperfect guide to consumption. Growth in real household consumption is probably a little slower. Still the trajectory of retail sales should still be a good guide to the direction in which overall consumer spending is going.

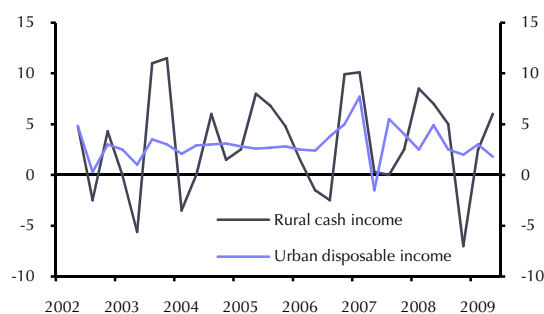
Incomes confusion

Further evidence on how households are coping comes from the data on incomes, but these do need to be interpreted with caution. The income data collected by the NBS cover government employees and workers at state-owned firms, but miss most workers in private sector firms as well as the self-employed. Since these are likely to have been hit hardest in the slowdown, the overall resilience of income growth, as shown in Chart 9, should not be read as indicative of broader trends.

Indeed, while the PBC’s seasonally adjusted data, based on those collected by the NBS, show that urban disposable income rose by 1.8% q/q, **urban residents responding to the PBC’s own survey reported the sharpest fall in income in the quarter since the survey was launched in 1999.**

The other interesting feature of this chart is the extreme volatility of rural incomes. This may indicate a shortcoming in the method of statistical adjustment. But if genuine, **this volatility is another explanation to add to the list of why rural households are such keen savers.**

CHART 9: CHINA AVE. INCOMES (% Q/Q, NOM., SEAS. ADJ.)



Sources – PBC, Capital Economics

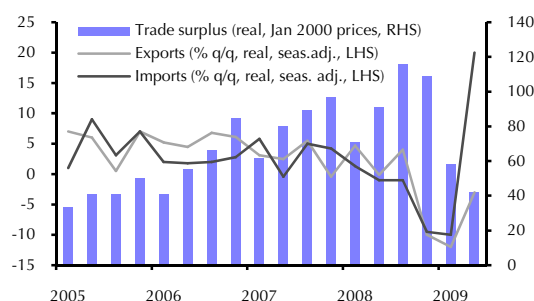
Trade

The final issue of interest is what the People’s Bank thinks has been happening to trade. These are among the most reliable of China’s data, but are also subject to a strong seasonal pattern. The Ministry of Commerce produces seasonally-adjusted figures, although in practice it simply scales the raw data to reflect the number of working days in a month.

The PBC’s estimates are for quarterly data. They show that exports continued to contract in Q2, by 3% q/q in real terms. This was a much less dramatic pace than that in the preceding two quarters (see Chart 10) and is roughly in line with our own seasonally-adjusted estimates of exports. Notably though, the monthly data, which the PBC does not refer to, suggest that exports picked up in June. July’s data released next week will be worth looking at for signs that this recovery is lasting.

Meanwhile, real imports swung from a contraction of around 10% q/q in both Q4 and Q1 to growth of 20.6% in Q2, according to the PBC.

CHART 10: CHINA TRADE (\$BN)



Sources – PBC, Capital Economics

In nominal terms, the trade surplus barely declined in the first half relative to a year earlier. But **in real (non-adjusted) terms the surplus halved**, according to PBC estimates. Both domestic demand and stock-building contributed to the shift, with sharp falls in commodity prices explaining why in nominal terms the surplus remained steady.

Conclusion

The PBC’s data offer some insight into how well China is recovering. Perhaps most encouraging is the evidence that retail spending is still strengthening. The data on imports also suggest that domestic demand has rebounded, although it remains to be seen how well this growth will be sustained as stock-piling of commodities comes to an end.

Statisticians in the PBC may have a freer rein than those in the NBS, but we still find their estimate of GDP growth in the fourth quarter of last year implausibly high. Indeed, it suggests the published annual growth figures from the NBS (which we think an over-estimate) were too low. The trajectory of the slowdown, with the abrupt shift happening in Q3 rather than Q4 is also hard to square with other evidence.

While the publication of seasonally-adjusted data by the NBS next year will give a fuller picture of what is happening in China’s economy, this suggests it is unlikely to clear up many of the doubts surrounding China’s official data.