

The W&P GDP Growth Stat for China

China's official economic statistics are notoriously unreliable. In response, Wellershoff & Partners has developed an alternative statistical indicator to capture China's GDP performance. The W&P GDP Growth Stat for China uses production data from key sectors of the economy in a bottom-up analysis that yields reliable GDP growth data. On April 15, 2016, we expect the Chinese authorities again to proclaim a growth rate of more than 6.5 percent for 2016's first quarter compared to a year earlier. However, our analysis indicates a growth rate of only 5.7 percent for the quarter. We explain our methodology in this report; the authorities in Beijing are somewhat less transparent. // Felix Brill and Christa Janjic-Marti

At the National People's Congress in mid-March of this year, the Chinese government targeted annual GDP growth of at least 6.5 percent for each of the next five years. Despite a stock market crash, stagnant exports and conspicuous overcapacity in the steel and construction industries, everything is going smoothly, it seems. Prime Minister Li Keqiang told reporters the following: "There may be small ups and downs but we can employ innovative means to deploy macroeconomic regulation to keep within our targets."

Cycles? None here, thanks.

Viewing the past three years through the lens of official Chinese statistics, we find none of the ups and downs that typically make up the business cycle. What we see instead are very evenly and gently falling growth rates. As Fig. 1 illustrates, this period is exceptional even for China, which in the past reported significantly more pronounced cyclical fluctuations. The divergence between official GDP and trend growth rates has in fact never before been as low as what we've seen over the past three years.

This flattering portrait of the economy has only fed widespread doubts about the reliability of the official GDP statistics among investors and other China-watchers. Prime Minister Li himself questioned the reliability of the Chinese GDP data in discussions with foreign

diplomats, according to a Wiki leaks dispatch from 2011.

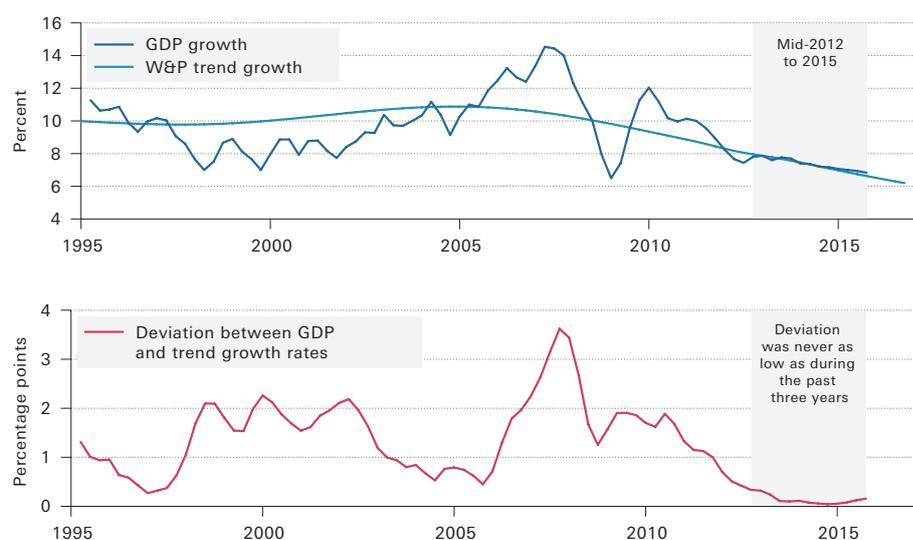
To make matters worse, the official GDP statistics offer much less detailed information than those of other emerging economies, let alone those of industrialized nations. One looks in vain for quarterly data on investment or consumption, for example. Instead, only aggregated production data for the agricultural, industrial and services sectors are published. But these are difficult to interpret, consisting only of combined real growth rates for the year to date.

Now what?

Economists have been forced to conclude that China's official GDP statistics – merely aggregate growth rates and little else – are no longer reliable for national accounting purposes. So, what to do? After all, China is the world's second-largest economy and recent disruptions there make it very clear how much its economic fortunes can affect global financial markets.

With all this in mind, we felt compelled to come up with a reliable alternative for assessing China's economic growth. But how to do that? A good question, we thought, but now we had to find answers. This *Critical Perspectives* introduces our new metric for marking China's GDP development, the *W&P GDP Growth Stat for China*. It uses a bottom-up analytical process based on

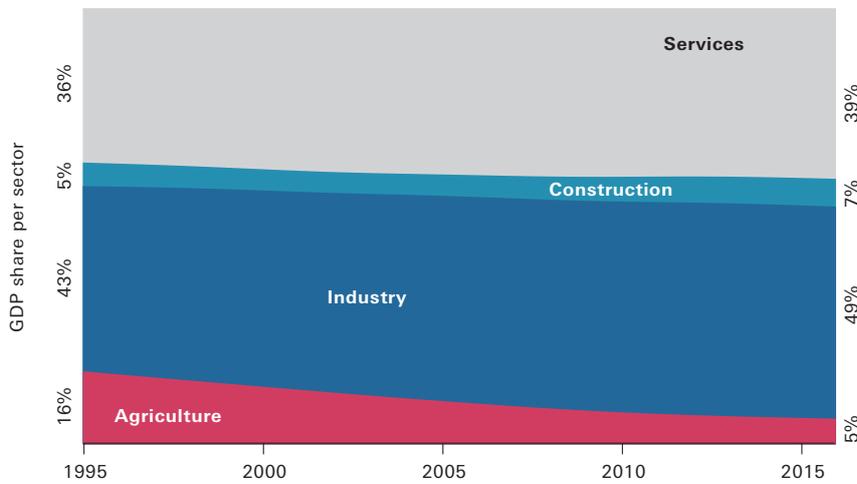
Fig. 1: The end of business cycles in China?



China's annual growth rate has been declining since 2010. This is nothing new. What is new is that since 2012 the growth rate has essentially stopped varying, instead sticking close to the trend path. The figure shows how extraordinary this is. Over the past 20 years, the absolute deviation between official GDP and trend growth rates over any rolling 12-month period was never as low as it has been during the past three years.

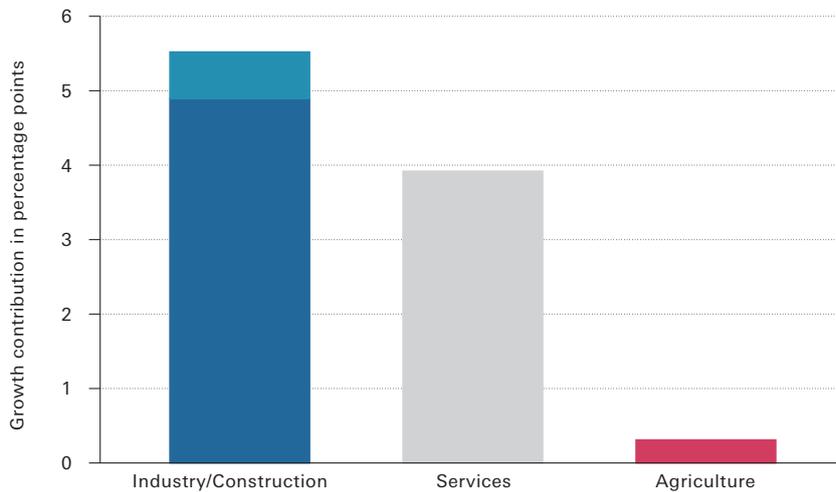
Source: PWT, Thomson Reuters Datastream, Wellershoff & Partners

Fig. 2: GDP share per sector since 1995



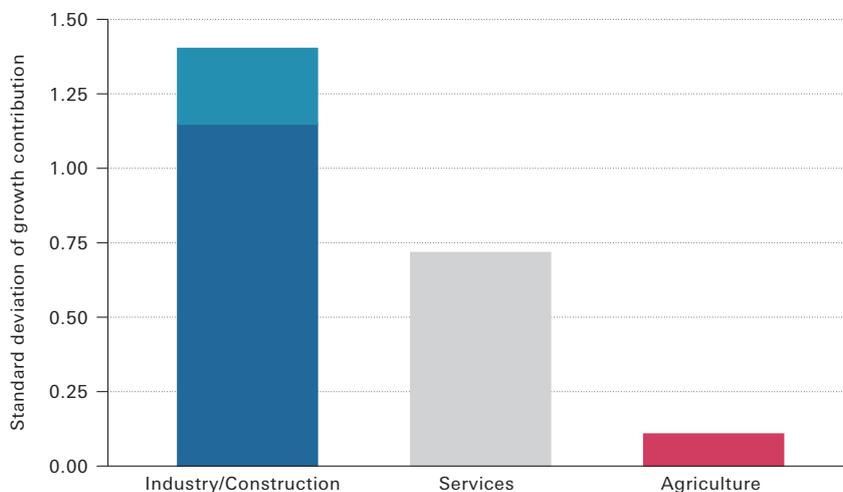
China's economy didn't just expand dramatically over the past two decades; it also changed. The typical evolution of developing economies – from agriculture to industry to services – has been altogether slower than Chinese authorities might have wished. The industrial and construction sectors remain dominant, accounting for about 56 percent of the country's GDP in 2015, according to our estimates.

Fig. 3: Average annual growth contribution per sector since 1995



The great importance of the industrial sector is reflected in its average contribution to GDP growth over the past 20 years. At more than 5.5 percentage points per year, manufacturing and construction accounts for nearly 60 percent of growth, while the service sector, averaging 4 percent per year, adds around 40 percent. Agriculture's contribution has slipped each year, adding just around 0.2 percentage points to growth.

Fig. 4: Fluctuations in GDP contribution per sector since 1995



From a business cycle perspective, it's interesting to observe, in addition to its size, how much a sector's contribution to GDP varies over time. We note that the impact of the industry and construction sector, with a standard deviation of 1.4 percentage points, accounts for almost 65 percent of GDP fluctuations, whereas the services sector accounts for only just over 30 percent, and agriculture can simply be ignored in this regard.

Source: Thomson Reuters Datastream, Wellershoff & Partners

production data from key sectors of China's economy for which we created separate proprietary performance indicators. We think our approach yields a telling and timely assessment of China's GDP performance and its outlook.

Looking for alternatives

The starting point for the *W&P GDP Growth Stat for China* is industrial production data. As dubious the official statistics are for national accounts, it is gratifying how much relatively good data is available at the level of industrial sectors. We are aware of no emerging economy that publishes such a comprehensive range of sector data as China has done for such a long time now.

Neither Brazil nor India nor Mexico provide the level of information on the construction sector that is available from China, including price developments, proposed and completed projects, land transactions and the like. This data pool is not just broad, but it is also routinely updated, usually monthly.

Production data from other industrial sectors is similarly wide-ranging. Monthly production and sales data is available for more than thirty sectors – covering everything from refrigerators and semiconductors to steel, automobiles and more. This abundance of data provides a good basis to assess the GDP contributions of the industrial and construction sectors and to scrutinize the aggregated official data offered in the national accounts.

The activities in the services and agriculture sectors are less well documented, unfortunately. But these deficits are less problematic than they might first appear. After all, these sectors contribute far less to China's GDP development than do the construction and industry.

Construction and industry loom largest

Fig. 2 shows that the share of agriculture in China's overall economy has shrunk from almost 20 percent to just around 5 percent over the past twenty years. The service sector, with a 39 percent share, is much larger than agriculture but it still lags well behind construction and industry. Manufacturing contributed 56 percent of the added value to the economy in 2015. The relative sizes of the sectors are also reflected in their average annual contribution to GDP growth, shown in Fig. 3.

From a business cycle point of view, in addition to size, it's also important how much a sector's contribution to GDP growth fluctuates over the course of time. Fig. 4 shows the impact of construction and industry, with a standard deviation in their annual growth contribution of 1.4 percentage points. This accounts for almost 65 percent of total growth fluctuation; whereas the services sector accounts for just over 30 percent. With our alternative approach, based on the production data from the industrial and the construction sectors, we cover more than half of China's economy and about two-thirds of its economic fluctuations.

The W&P Chinese Industrials Indicator

We review the production data of more than thirty industrial subsectors to create our Chinese Industrials Indicator. Fig. 5 compares our findings with official data. What is striking is not only the greater fluctuations evident in the *W&P Chinese Industrials Indicator*, but also the significantly lower production growth than what has been officially reported.

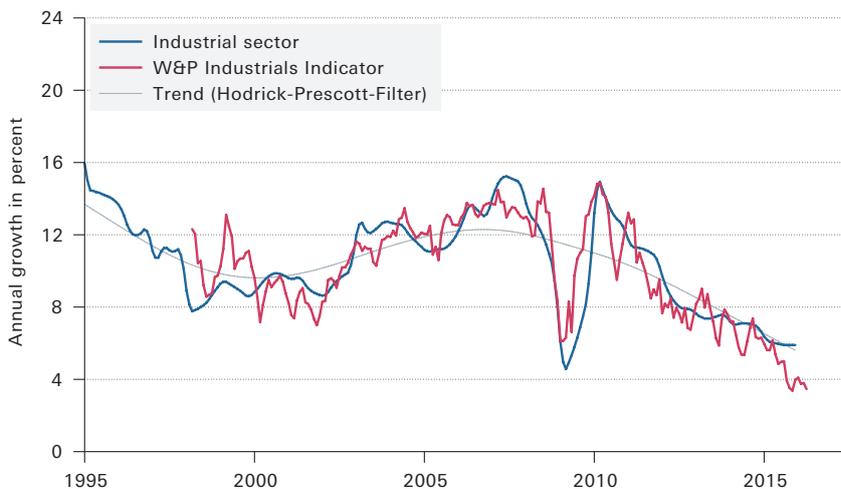
Looking at profit data for China's industrial sector, we think our estimate clearly paints the more accurate picture of Chinese industry. The profits of Chinese industrial firms haven't grown since the beginning of 2015. A similar picture prevailed in the early 2000s, when the disparity between our analysis and the official industrial production data was also similar in size. Back then the profits of China's industrial enterprises fell sharply, which makes our current estimates all the more credible.

The W&P Chinese Construction Indicator

We note a similar discrepancy between the official figures on the GDP contribution of the construction sector and our own *W&P Chinese Construction Indicator*, which is fed by monthly data such as cement and steel consumption. As seen in Fig. 6, according to our indicator, construction sector growth is significantly lower than the reported 7 percent. We also find it striking and a bit suspicious that the official data has varied so little since 2011. No other time series for the construction sector shows such an atypical, stable development.

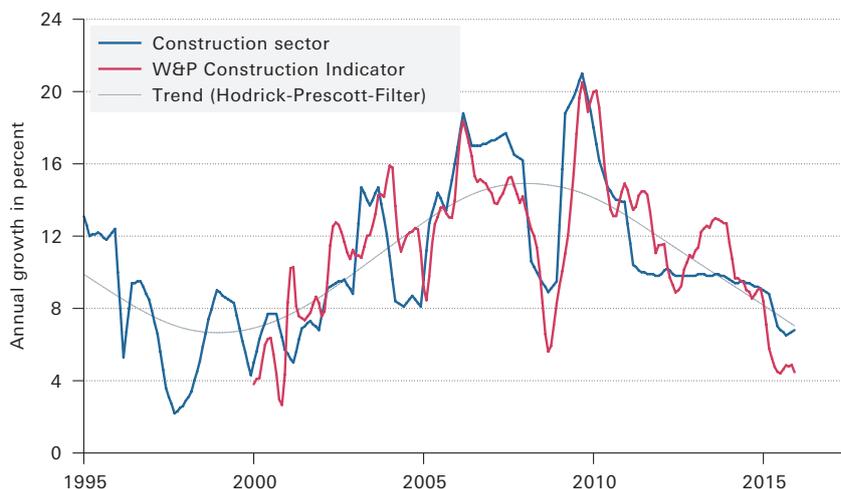
Perhaps these anomalies can be explained by recent economic history in China. Since the global financial crisis of 2008/09 struck the Chinese economy, the authorities in Beijing appear to respond to any economic

Fig. 5: The W&P Industrials Indicator



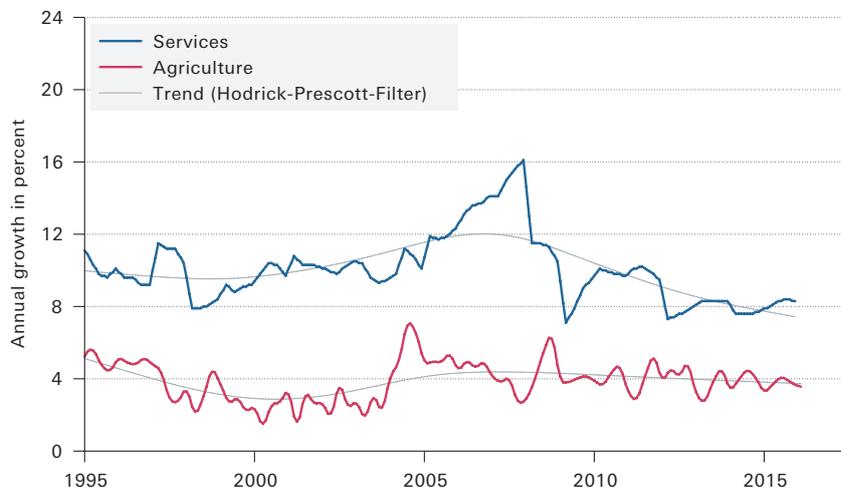
Given its hefty influence, we have focused considerable effort on creating a reliable leading indicator for China's industrial sector. The accompanying diagram introduces the W&P Industrials Indicator for China, derived from aggregating and analysing data from 30 industrial subsectors. It is not only historically accurate. Most usefully, it also projects the sectors's likely path over the coming quarter.

Fig. 6: The W&P Construction Indicator



Our new W&P Construction Indicator for China signals a clearly weaker state of affairs than does the data coming from official Chinese sources. It also depicts a typical range of fluctuations over the past several years, while the official data is suspiciously smooth. The indicator's bottom-up analysis uses available monthly data, for example, on cement and steel consumption.

Fig. 7: China's services and agriculture sectors



Data availability for the services and agriculture sectors is notably worse than for the industry. In both cases, therefore, we use the official data as a broad assessment of the Chinese economy. In any case, as noted on page 3, both sectors have little influence on economic fluctuations compared to the industrial sector.

Source: Thomson Reuters Datastream, Wellershoff & Partners

weakness with hefty regional and local construction projects, and they have done so again since mid-2015. While many of these projects will indeed be realized, not a few exist so far only on paper and may well never be completed. However, several studies show that such projects often appear in official construction statistics, even if they are as yet only planned and their funding merely announced.

The unvarnished truth: W&P's GDP Growth Stat for China

With the help of our bottom-up indicators for industry and construction production, we can now focus on our original target, an accurate statistical representation of China's GDP growth as an antidote to dubious official figures. For each sector we use deviations from sectoral trend growth and aggregate them according to the sector's relative economic weight. For the agriculture and services sectors, lacking any better input, we use the official national account data.

As Fig. 8 shows, since 2000 the *W&P GDP Growth Stat for China* not only tracks the country's reported economic growth accurately, but also with a very useful lead-time, up to three months ahead of the official figures. The *W&P Growth Stat* also paints a significantly more volatile and weaker growth picture since mid-2012 than the official data, once again confirming our scepticism

about the pronouncements of China's economic authorities.

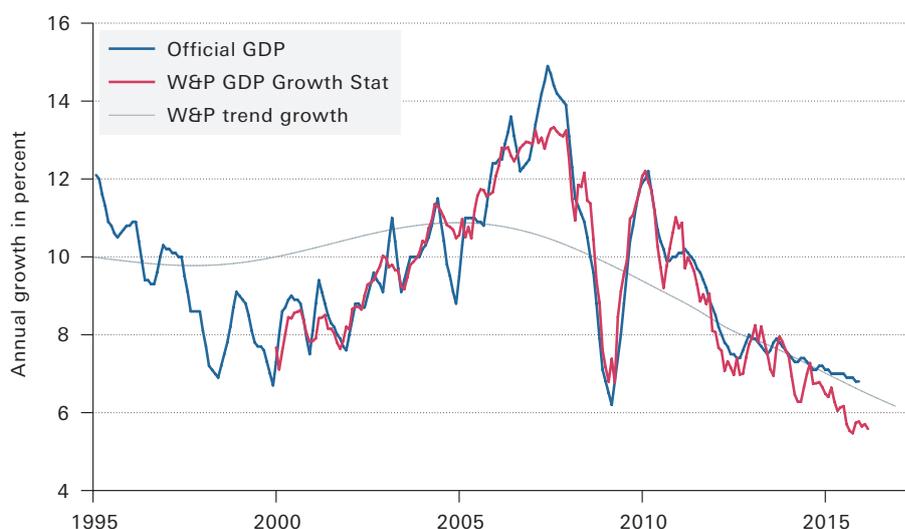
Looking at the *W&P GDP Growth Stat for China* on a quarterly basis, an ever-increasing divergence with official GDP data is also apparent over the past three years (see Fig. 9). For the fourth quarter of 2015, the *W&P GDP Growth Stat for China* indicates growth of only about 5.8 percent, one full percentage point lower than the official rate of 6.8 percent. In the first quarter of 2016, we think the slowdown is likely to have continued. Our analysis indicates a real annual growth for China of 5.7 percent.

How reliable the *W&P GDP Growth Stat for China* has been historically is shown in Fig. 10. The average absolute deviation is a mere 0.5 percentage points. The grey band shows a dynamic confidence interval – the statistical likelihood that a value will fall between an upper and lower bound of probability – that takes the level of trend growth into account. Accordingly, the official data only moved outside the grey area twice since 1995, in 2004 and 2008. In both instances, we note, the official data corrected toward the path of the *W&P GDP Growth Stat for China*. This does not bode well for the Chinese economy's near-term outlook, in our view.

Bottom line

At 5.7 percent for the first quarter of 2016, the *W&P GDP Growth Stat for China* signals markedly lower annual

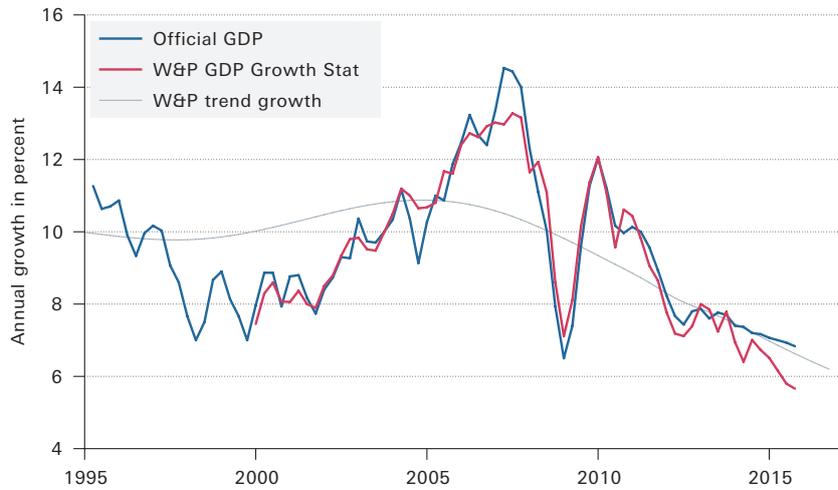
Fig. 8: The W&P GDP Growth Stat for China



The W&P GDP Growth Stat for China comprises the weighted contributions of our sector indicators. It also has a lead-time of up to three months on official growth statistics. Since 2012, the Growth Stat clearly shows a more volatile and weaker GDP growth than officially reported.

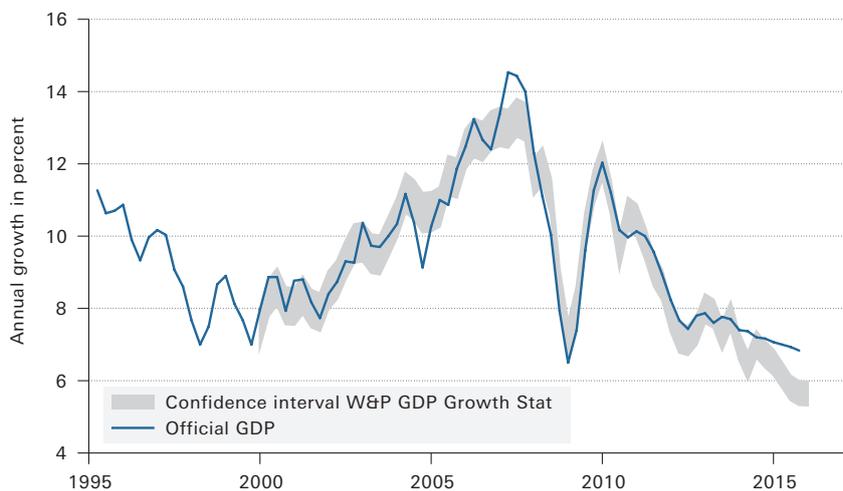
Source: Thomson Reuters Datastream, Wellershoff & Partners

Fig. 9: The quarterly W&P GDP Growth Stat for China



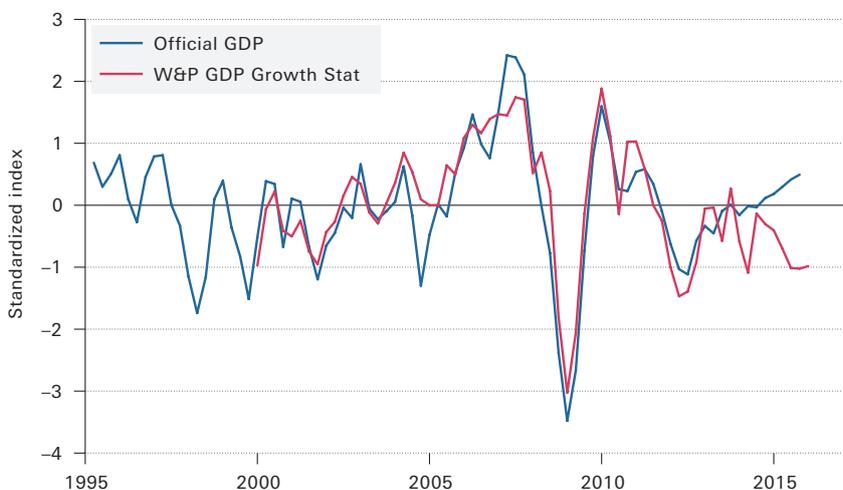
On a quarterly basis, The W&P GDP Growth Stat for China brings the discrepancy between our assessment and the official pronouncements into sharp focus. For the fourth quarter of 2015, the Growth Stat signals growth of just 5.8 percent, a full percentage point less than the official view of 6.8 percent. In the first quarter of 2016, we think GDP growth slowed yet further, to 5.7 percent.

Fig. 10: The confidence interval for the W&P GDP Growth Stat for China



The W&P GDP Growth Stat for China has been historically accurate, as Fig. 10 shows. The average absolute deviation is a mere 0.5 percentage points. The grey band depicts a dynamic confidence interval that takes the level of trend growth into account. Since 1995, accordingly, the official data has only departed from the grey area in 2004 and 2008. In both instances, we note, the official data corrected toward our findings.

Fig. 11: Comparing deviations from trend growth



The figure compares the deviation in trend growth between official government data and the W&P GDP Growth Stat for China. For the purposes of standardization, we also took the level of trend growth into account. Here, for example, large deviations in low trend growth are more heavily weighted than in high trend growth. Currently the discrepancy between official data and the W&P GDP Growth Stat for China is around 1.5 standard deviations.

Source: Thomson Reuters Datastream, Wellershoff & Partners

growth than official estimates. Fig. 11 also shows that the Chinese economy is growing about one standard deviation slower than its growth potential would imply. According to our analysis of more than thirty countries, this growth differential typically marks the critical limit beyond which a recession must be assumed.

As Fig. 12 shows, China's industrial and construction sectors are already in recession. To make matters worse, the Chinese economy is not only stuttering cyclically. Trend growth has also slowed significantly in recent years and according to our estimates will slow even further. By the end of this decade, we expect China's trend growth to slow to 5.5 percent per year. Against this backdrop, the official growth target of at least 6.5 percent for the next five years clearly seems unattainable.

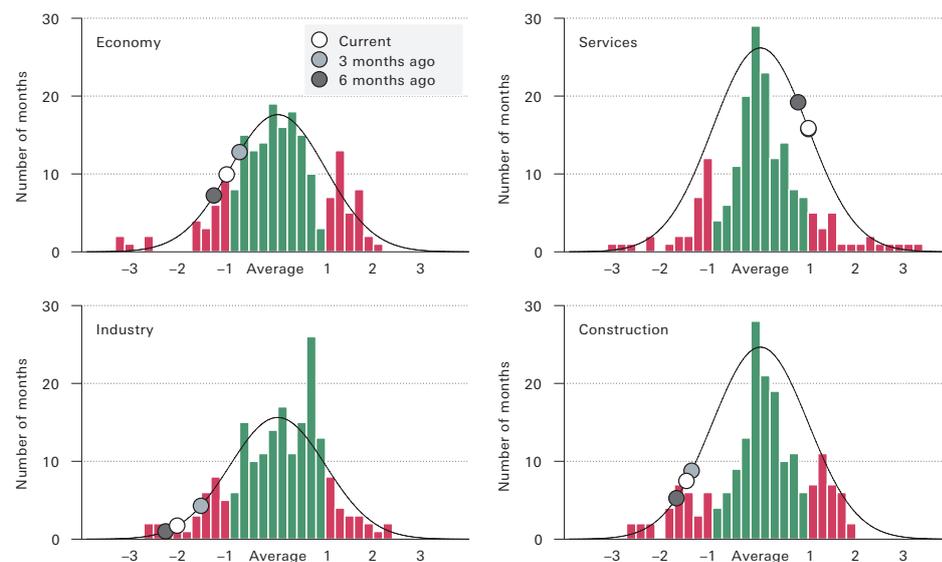
That said, after the sharp downward move last year, visible in the *W&P GDP Growth Stat for China*, the negative dynamics do appear to have weakened a bit recently. The energetic monetary and fiscal policy interventions adopted after mid-2015 seem to have had an impact. In the property sector we note an improvement in the volume of transactions and projected housing in recent weeks. That has not yet, however, translated into higher construction activity, as our *W&P Construction Indicator* signals. That China's highly expansionary economic policies since mid-2015 have only managed to

stabilize growth – and at below-trend levels – is itself rather alarming. For us, it is another indication that China's entrenched growth model has reached its limits.

Watch this space for reliable assessments of the Chinese economy

You don't have to be a prophet to predict the message of China's next official GDP growth rate announcement. As has been the case over the past three years, it should align closely with the falling trend growth rates. However, for anyone interested in a realistic, unvarnished assessment of the Chinese economy, the *W&P GDP Growth Stat for China* offers a reliable alternative to the fog generated by officialdom. Going forward, we will provide our clients with updates of our new indicators on a monthly basis. And we will also update the *W&P GDP Growth Stat for China* on our website each quarter, one week before the government's official estimates are released. Let the comparisons begin! //

Fig. 12: The state of the Chinese economy at a glance



With a trend growth-adjusted growth gap of one standard deviation, the Chinese economy is teetering on the brink of recession. Only the services sector has held the economy back from that unwanted status. The manufacturing and the construction industries are in fact in recession, according to our analysis. To make matters worse, the Chinese economy as a whole is in any case struggling with falling trend growth.

Quelle: Thomson Reuters Datastream, Wellershoff & Partners

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