

BUILDING CHINA'S DATA SYSTEM



September 2014

Engineering a comprehensive, reliable and transparent data architecture is a challenge in any country. In a fast changing economy like that of China, those difficulties are redoubled. China's economic data are often the subject of criticism. Taking on the doubters, Bloomberg Brief invited leading scholars and economists to review reforms in China's official data and to identify the best of the growing variety of independent data sources.

INSIDE



Data Landscape

Tom Orlik, North Asia economist for Bloomberg, reviews the latest changes in China's data system. (Page 3.)



Building Economic Indicators

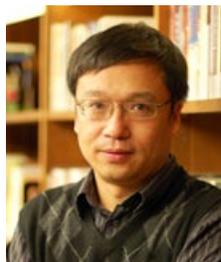
Fielding Chen, North Asia economist for Bloomberg, says Bloomberg's custom-built indicators suggest China's economic rebalancing is ongoing even as growth momentum weakens in the third quarter. (Page 6.)



GDP Statistics

Carsten Holz, professor at Hong Kong University of Science & Technology and a visiting professor at Harvard University, says China's oft-maligned economic statistics are better than you think. (Page 4.)

For more details on Carsten Holz's research "The Quality of China's GDP Statistics" go to: <http://scid.stanford.edu/publicationsprofile/2681>.



Household Finance

Gan Li, professor of economics at Texas A&M and at Southwestern University of Finance and Economics, talks to Tom Orlik about the findings from the latest round of the China Household Finance Survey. (Page 7.)



Animal Spirits

Tom Orlik, Bloomberg Brief Editor **Jennifer Bernstein** and Bloomberg Intelligence present the newly developed China Animal Spirits Indicators, eight alternative measures of economic activity. (Page 5.)



China's Housing Data

Robert Hing Fong, Bloomberg Intelligence analyst, provides a street map for China's housing data. (Page 8.)

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BRIEF GO

DATA LANDSCAPE

TOM ORLIK, BLOOMBERG ECONOMIST

Not Your Grandfather's China Data System

China's data system has evolved. Better coverage, enhanced reliability and increased variety of sources mean new resources for tracking developments in the world's second-largest economy.

Coverage has improved. One example is labor markets. China's old labor market data were notoriously unreliable. A "registered" unemployment rate that varied between a low of 3.9 percent and a high of 4.2 percent through the turbulence of the last decade was clearly missing part of the picture.

The government has raised its game. In 2013, Premier Li Keqiang referred to a "surveyed unemployment rate of about 5 percent." In July, the National Development and Reform Commission reported that unemployment was 5.1 percent, based on a survey of 31 Chinese cities.

A survey-based unemployment rate is a major step forward. Reassuringly, results show that even with concerns about a pronounced slowdown in growth, unemployment has held steady at relatively low levels. The next step should be regular publication of the data with a more detailed breakdown.

Existing data have been strengthened, addressing concerns about conflicts of interest. In the past, the main concern about China's data system was meddling local officials massaging growth up and prices down to boost their career prospects. That's been blamed for everything from over-reported GDP growth in 1998 to under-reported house price changes in 2009.

Recent reforms have vastly reduced the role of local officials in data collection. For key growth series like industrial output, companies report data directly into a single online system managed by the National Bureau of Statistics. For inflation data like the consumer price index, it's the NBS, not local statistics offices, that are running the surveys.

The system is now more diverse, with official numbers complemented by data from private and academic sources. In property, China Real Estate Information Corp. provides an early read on developments in prices and sales. The China Household Finance Survey fills in crucial details, finding that vacancy rates in 2013 were at a worrying 22 percent.

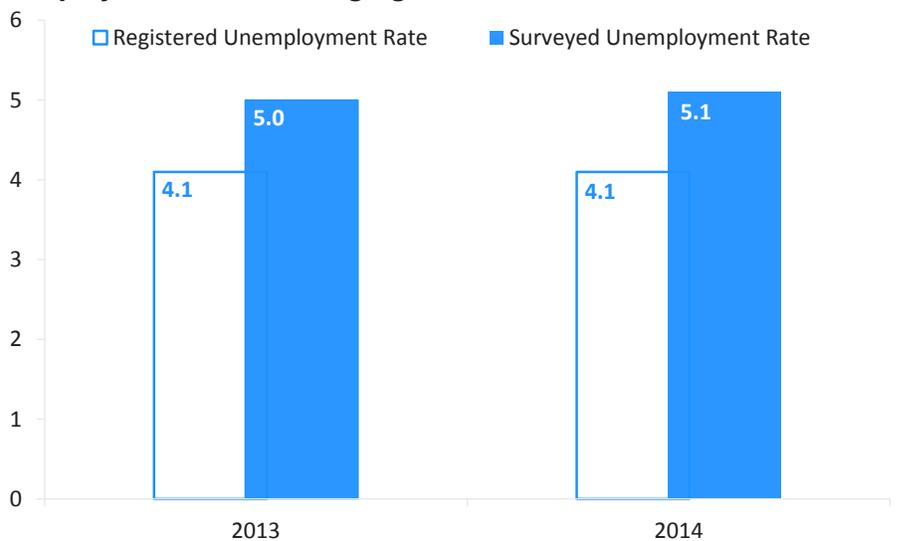
The shift online of everything from shopping to dating means big data add to the

list of available series. Premise — a technology-based data company — is providing a high-frequency reading on inflation in consumer staples by zapping online prices. Alibaba's Internet Shopping Price Index reports on prices for goods sold on its massive Taobao platform.

China's data system remains the subject

of mistrust. Pundits persist in asking, "But can you believe the numbers?" In fact, improvement in the official data and the increasing variety of alternative sources mean much of the criticism is outdated. The resources used to understand developments in the world's second-largest economy are far from perfect. They have also never been better.

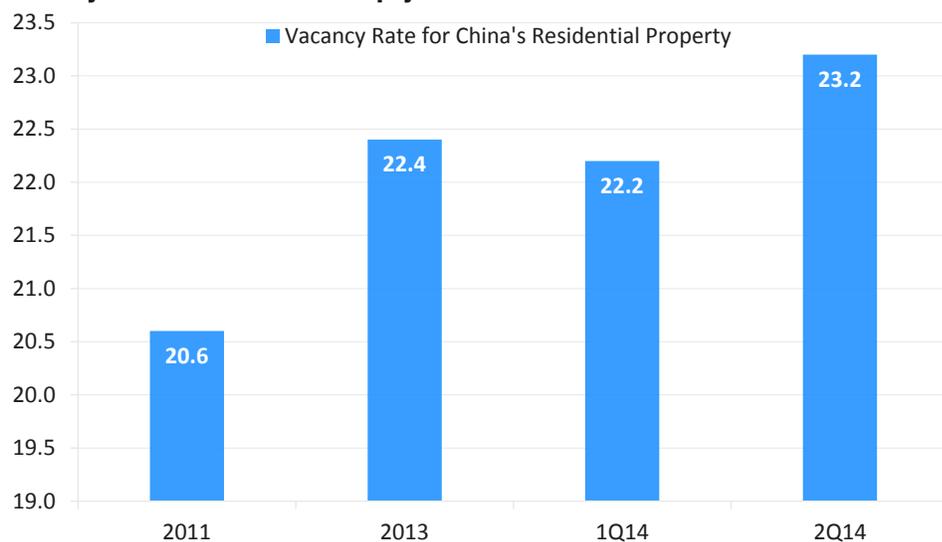
Unemployment Data Working Again



Source: Bloomberg

BloombergBriefs.com

Survey Data Show More Empty Homes



Source: China Household Finance Survey

BloombergBriefs.com

GDP STATISTICS

GUEST COMMENTARY BY CARSTEN HOLZ, HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

China's GDP Data Are Better Than You Think

The problems of Chinese statistics have been widely publicized. The oft-used example is that the sum of provincial GDP routinely exceeds national GDP. Pundits love to repeat comments by Premier Li Keqiang, who said the country's GDP figures are "man-made and therefore unreliable" and "for reference only."

Calculating GDP is not as straightforward as counting apples on a tree. It involves complex imputations and adjustments. Technical reasons, such as double-counting, explain why summed provincial numbers may exceed national GDP. Li's quotation is from 2007, when he was party secretary of Liaoning province, and probably represents

his view of provincial figures. The National Bureau of Statistics does not rely on provincial data when calculating national GDP.

Hypothetically, if the NBS were to falsify GDP data, could this be detected by a third party? In the case of nominal GDP statistics, there is no chance. Aggregate data published by NBS contain an estimate of the output of the small-scale economy, obtained from censuses and unpublished surveys. Outsiders have no means to verify these figures.

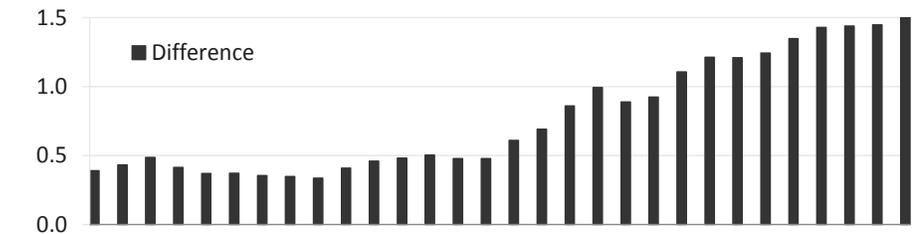
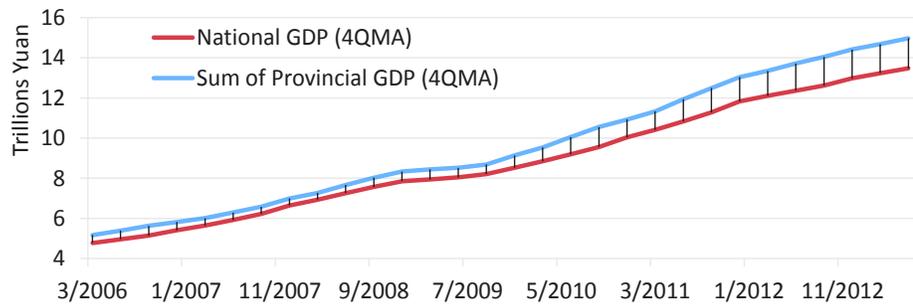
Happily, real GDP growth is of more significant interest, and corresponding double-checks on reform-era data are feasible. Assuming the official nominal GDP values and a large body of published price indexes are accurate, alternative real GDP growth rates may be derived by using combinations of price indexes to deflate nominal GDP values. These derived real GDP growth rates come close to official figures, deviating by no more than 1 percentage point in either direction.

Given known regularities in data series, do the data that come out of the NBS look as if they have been tampered with? Benford's Law is frequently used as a tool to detect fraudulent data. As it turns out, the Chinese nominal data pass the test. Problems only appear in the real growth rates. The second digit is zero a bit too often (as in 8 percent growth). This is also the case for comparable U.S. data, and the likely culprit is rounding.

What is left? There is uncertainty about the nominal GDP values during the early reform years. They are probably underestimated because the socialist statistical system wasn't designed to capture small-scale, private economic activity — especially not in the service sector. As a result, the average real growth rate of the reform period may be off by a percentage point. That's not the end of the world if the economy is growing at 8 percent to 10 percent. If real growth is overestimated one year and underestimated in another, it might balance out in the long run.

On the political interference in official statistics, it's worth mentioning that former U.S. President Lyndon B. Johnson used to review GNP reports prior to release. According to Shadowstats.com, if Johnson did not like the GNP estimates, he would keep sending them back to the Commerce Department until they got the numbers "correct." Such are the dangers of a politicized GDP concept.

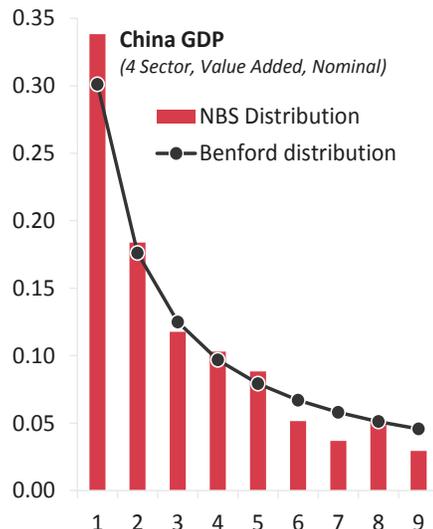
Adding Up? Provincial GDP Total Exceeds National GDP



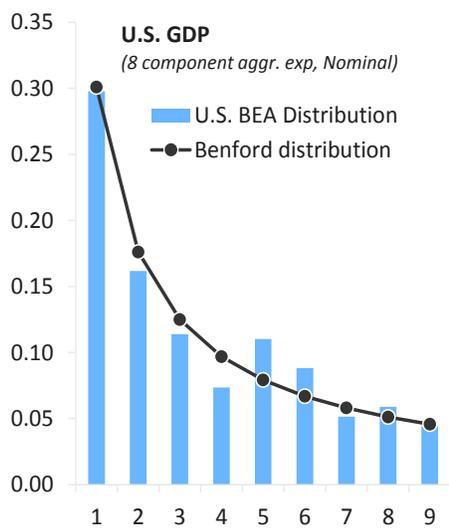
Source: Bloomberg

BloombergBriefs.com

China's Data Passes Benford's Law Test



Source: Carsten Holz



BloombergBriefs.com

CHINA ANIMAL SPIRITS INDICATORS

BY TOM ORLIK, BLOOMBERG ECONOMIST, AND BLOOMBERG INTELLIGENCE

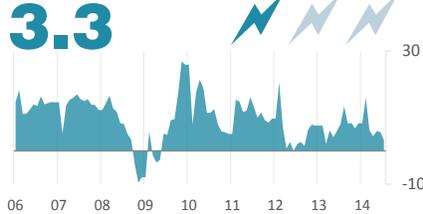
Are China's economic juices flowing like baijiu at a banquet or coagulating like the remnants of yesterday's hotpot? The Animal Spirits Indicators provide an answer with a look at alternative measures of growth. The latest readings confirm fears of a slowdown in industry and real estate. Consumption is doing better. Low inflation and limited stimulus so far mean there's scope for the government to do more to support growth.

INDUSTRY

METRIC

Electricity Production YoY

JULY 2014



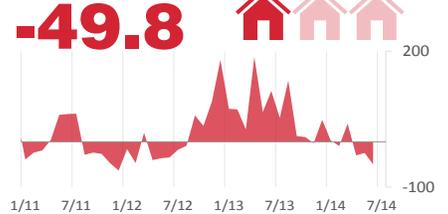
ANALYSIS: If volts don't lie, industrial output is shockingly low. Electricity output decelerated to 3.3 percent annual growth in July, down from 5.7 percent in June and the slowest since March 2013. {CHYXELEC Index <GO>}

INVESTMENT

METRIC

Land Sales YoY

JULY 2014



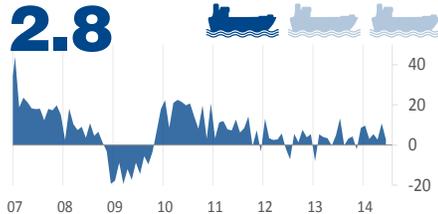
ANALYSIS: Slumping real estate sales have dealt a blow to the land market. Sales value in China's largest 30 cities was down 49.8 percent in July from a year earlier — bad news for local government revenues.

TRADE

METRIC

Shanghai Container Volume YoY

JULY 2014



ANALYSIS: Activity at the ports cooled down. A 2.8 percent annual expansion of container throughput in Shanghai in July, down from 10.8 percent in June, pointed to fading demand for made-in-China. {SHSPCOTV Index <GO>}

FINANCE

METRIC

IPOs (Bln Yuan)

AUGUST 2014



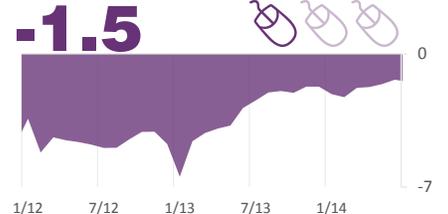
ANALYSIS: Equity markets stayed hot. Initial public offerings totaled 92.9 billion yuan in August continuing a run of strong months as the regulator opened the gates to new listings.

INFLATION

METRIC

Alibaba Internet Shopping Price Index YoY

AUGUST 2014



ANALYSIS: Alibaba's Internet Shopping Price Index (Core) suggests the risk is deflation rather than inflation. Prices fell 1.5 percent in August from the year before.

LEISURE

METRIC

Baccarat Revenue YoY

JUNE 2014



ANALYSIS: High rollers may have succumbed to China's anti-corruption regime. At Macau's mass-market baccarat tables though, revenue continues to rise, climbing 28.3 percent year on year in the second quarter. {BI GAME<GO>}

CONSUMPTION

METRIC

Yum Same Store Sales YoY

JUNE 2014

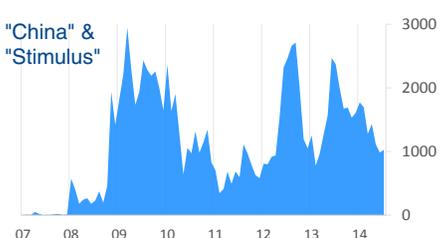


ANALYSIS: China's hungry households continued to eat out. Yum! Brands Inc., the owner of Kentucky Fried Chicken, moved past food safety scandals to record 15 percent year-on-year growth in same store sales in the second quarter.

POLICY

METRIC

News Trend Story Count



ANALYSIS: More than 1,000 stories with the words "China" and "stimulus" appeared among top news stories aggregated on the Bloomberg Terminal in July, compared with 2,900 in March 2009. That suggests China's stimulus remains in the 'mini' category. {INT<GO>}

BUILDING ECONOMIC INDICATORS

FIELDING CHEN, BLOOMBERG ECONOMIST

China's Weakening Economy May Need More Stimulus, Bloomberg Indicators Suggest

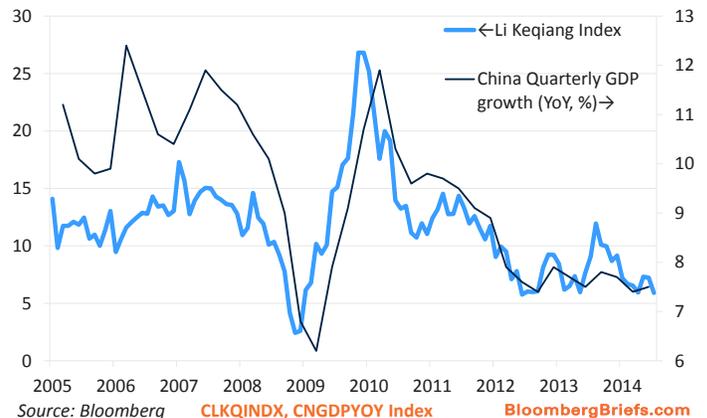
Bloomberg's custom-built indicators suggest China's growth momentum is weakening in the third quarter. Cooling economic activity may prompt authorities to introduce further easing in order to support the recovery and to achieve the 7.5 percent growth target in 2014.

Monthly GDP Estimates Point to Weaker Growth



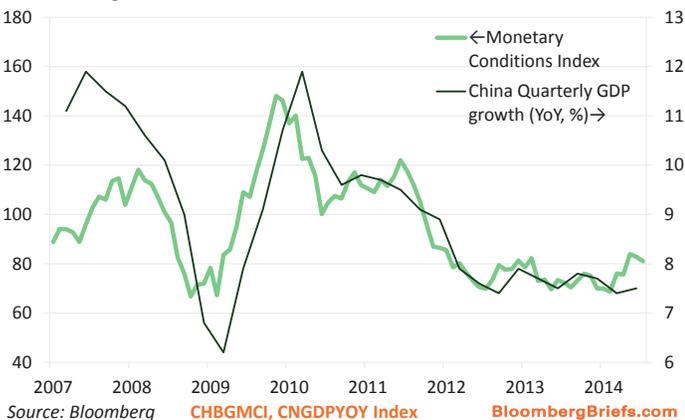
The **Bloomberg China Monthly GDP Estimate Index** is composed of a set of demand- and supply-side indicators that track closely with quarterly GDP growth. The print in July dipped to 7.4 percent year on year, less than the 7.5 percent official target for 2014, and down from 7.5 percent in June. That suggests growth has edged down in the third quarter.

The Li Keqiang Index Plummets



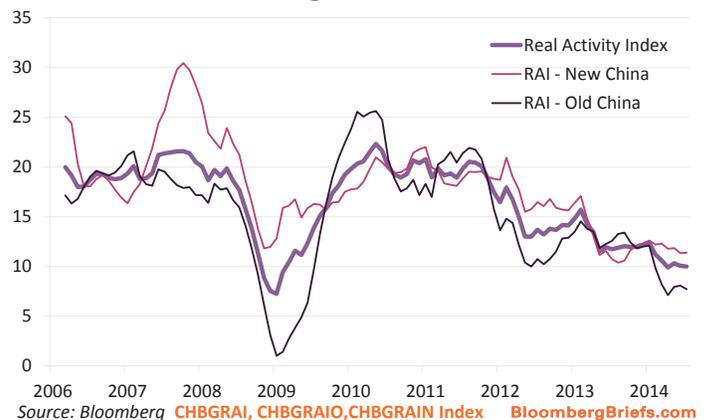
Premier Li Keqiang is reported to have said that he prefers to use three metrics to track the strength of economic activity: bank lending, rail freight and electricity consumption. The **Li Keqiang Index**, a weighted average of these economic indicators, tumbled to 5.9 percent year-on-year growth in July from 7.2 percent in June, suggesting economic activity is losing steam in the third quarter.

Monetary Conditions Also Deteriorated



The **Bloomberg China Monetary Conditions Index** tracks the impact of monetary policy on domestic and foreign demand using a weighted average of real interest rates, credit growth and change in the real effective exchange rate. The measure dropped to 81 in July from 82.8 in June, as new credit slumped and the yuan rose.

Structural Rebalancing Continues



The **Bloomberg China Real Activity Index** rose 9.9 percent year on year in July compared with 10.1 percent in June. The "New China" index, comprising growth in high value-added, private and clean energy sectors, rose slightly to 11.4 percent year on year from 11.3 percent. The "Old China" index, which follows low value-added, state sector and high pollution industries, declined to 7.7 percent from 8.1 percent. That suggests economic rebalancing is ongoing even as growth slows.

HOUSEHOLD FINANCE

TOM ORLIK, BLOOMBERG ECONOMIST

Chinese Government Should Get Ready for the Property Bubble to Burst, Says Gan Li

In a more diverse data system, academic surveys are filling in the blanks about the state of the economy. Chief among them is the China Household Finance Survey, a quarterly 5,000-household nationwide survey spearheaded by Gan Li, professor of economics at Texas A&M and Southwestern University of Finance and Economics. Bloomberg Economist Tom Orlik spoke to Gan about his latest findings.

Q: What are you seeing in China's housing market?

A: Our second-quarter survey results are not encouraging. We find 24.7 percent of purchases were for investment reasons,

up from 10 percent in the first quarter. So real estate bulls who see buying opportunities have already come into the market, but overall sales are still down.

Q: What are expectations on prices?

A: In the second quarter, 10.4 percent of those selling houses did so because they think prices will fall, up from 3 percent in the first quarter. Our index of house price expectations fell to 105.5 from 116.8 in the first quarter. Expectations on house prices are turning less positive.

Q: Wasn't urbanization meant to drive strong housing demand?

A: Our survey finds a vacancy rate of 22.4 percent — so almost a quarter of houses are empty. That's difficult to square with the conventional narrative about urbanization driving 15 million new residents to the cities each year. The reason is that urbanization is only half about new arrivals in the city. The other half is about rural residents on the edge of cities reclassified as urban as

the city boundary expands. That group is typically old, low-income, doesn't need a new home. So urbanization isn't driving as much housing demand as expected. That's why we have excess supply and empty houses.

Q: What's the solution?

A: I don't think policy to support genuine first-time buyers will work because they are too small a part of the market — just 22.5 percent according to our data. The government shouldn't try and manufacture positive expectations. They should get ready for the bubble to burst. They shouldn't build more affordable housing. My view is they should subsidize the rental market. That will fill up the stock of empty homes. Higher rental incomes for home owners also makes them less likely to rush to put their second or third properties on the market.

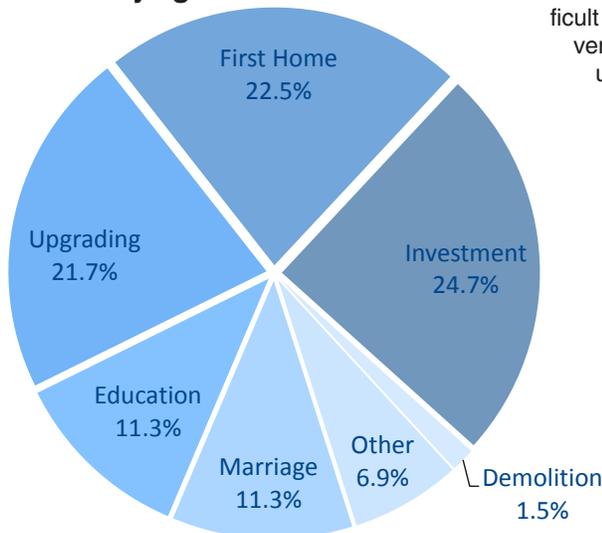
Q: What's your survey saying about unemployment?

A: Unemployment fell from 6.8 percent in the first quarter to 5.3 percent in the second. We think that reflects a seasonal pattern with migrant workers heading back to work. The fall in unemployment for migrant workers was especially pronounced. Wages also rose. Looking at the labor markets, it seems the economy is doing fairly well despite concerns about real estate.

Q: The central bank is trying to target credit to small businesses. Why do they find it hard to get funds?

A: Our finding is that the barrier for small businesses in accessing credit is not high interest rates, but simply applying for a loan. We found that 80 percent of small businesses that apply for a loan get one. The trouble is that only 58 percent of small businesses that need a loan actually apply. The percentage saying high interest rates are a barrier is very low — just 4.5 percent. From that point of view, educating small business owners on how to apply for loans is more important than cuts in the interest rate.

Reasons for Buying a Home



Source: China Household Finance Survey BloombergBriefs.com

Seasonal Effects Push Migrant Unemployment Down



Source: China Household Finance Survey BloombergBriefs.com

REAL ESTATE

ROBERT HING FONG, BLOOMBERG INTELLIGENCE

Street Map for China's Real Estate Data

Perusing China's real estate data is like wandering through Beijing's old-style hutongs; it's easy to get lost. The National Bureau of Statistics provides the official line on home sales and prices. Private agencies — including China Real Estate Information Corporation, Soufun and Centaline — offer higher-frequency numbers. Listed developers add detail at the company level.

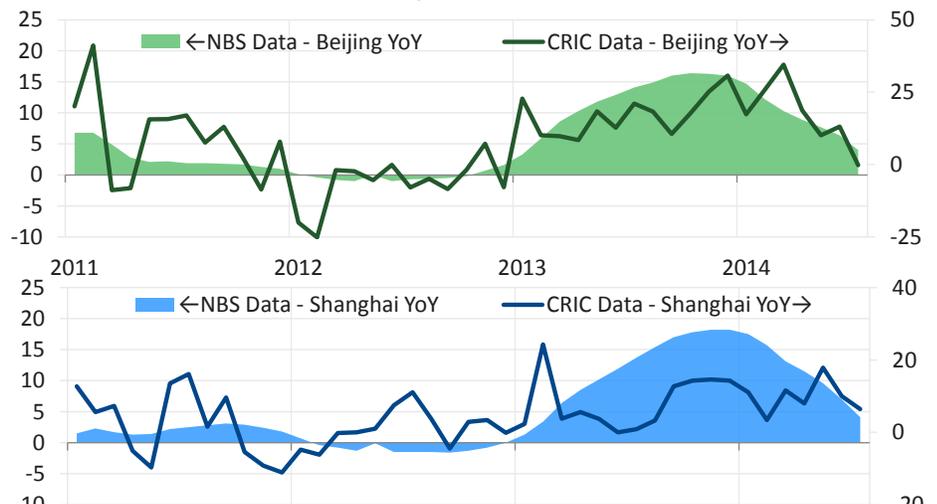
Abundance of data does not mean the numbers are all good nor do they always tell a consistent story. Sales data sometimes diverge. In the first seven months of 2012, NBS data showed declining sales in most cities, whereas developers continued to show robust gains. The discrepancy was likely due to stronger, publicly listed developers gaining market share at the expense of weaker rivals.

The NBS sales data have the largest sample and serve as a bellwether of overall industry and market trends. Agency data, which may provide additional insight, need to be treated with caution because of the volatility of high-frequency data, patchiness of district coverage in some cities and the lag in reported transactions. With company performance frequently bucking the national trend, developers' data are crucial for investor analysis.

The NBS 70-city residential index is the benchmark to assess national prices. This series has close to four years of history. While the gauge indicates correctly whether prices have gone up or down, the magnitude of the change is frequently understated. One reason is the difficulty of making "like-for-like" comparisons. For example, as China's cities sprawl, the data may compare this year's prices in relatively affordable suburbs with previous years' prices in the relatively expensive downtown area.

China Real Estate Information Corporation provides data on the average selling price of primary market homes. That's an important addition to the NBS data, which provide only the change in prices and not the level. Changes in average selling price offer some sense of short-term trajectory. As a longer-term gauge, they are limited due to the changing mix of properties sold. For some Tier 1 cities where secondary sales volumes are overtaking primary volume, the average sales price of primary homes may have even less reference value.

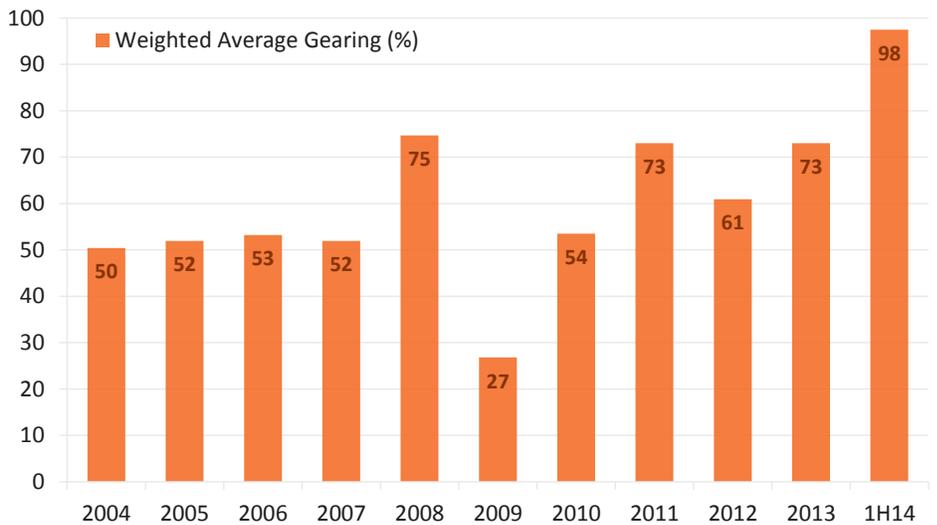
Expanded Options for Tracking House Prices



Source: NBS, CRIC, Bloomberg
CRICSPBJ, CRICSPSH, CNHS1, CNHS10 Index

BloombergBriefs.com

Company Data Show Developers' Net Debt to Equity Levels



Source: Bloomberg Intelligence

BloombergBriefs.com

Price and sales data do not complete the information necessary to understand industry trends. Data about developers' working capital, rental portfolios, cash and debt provide critical details about stress levels. For example, among listed developers, net-debt-

to-equity leverage levels for the Bloomberg Intelligence Valuation Peer Group rose to 97.5 percent in the first half of 2014 from a five-year low of 26.8 percent at the end of 2009. That suggests the sector may have limited capacity to withstand slowing sales.