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China

Real Estate Outlook

Annual Report 2010

Economic Analysis

- Building on BBVA's first Real Estate Outlook on China last year, this edition updates developments and policies in the residential property sector, including an evaluation of recent price trends against fundamentals and a comparison of international experience with housing price bubbles.
- Property prices in China have continued to rise sharply over the past year. While the magnitude of China's housing price increases is not particularly large in comparison to international experience at this stage, the authorities have taken early action to cool the market in order to maintain housing affordability and to forestall destabilizing price bubbles. The measures have resulted in a sharp fall in sales transactions and a moderation in price increases.
- According to our estimates, housing prices over the past year in the major first tier cities have outpaced the rise in equilibrium values for housing. This raises the likelihood of further near-term adjustments in the housing market, including a downward correction in prices.
- Over the medium term, however, prospects for China's property market are bright given rapid income growth, high rates of urbanization, and favorable demographics.

Index

Closing date: June 30, 2010

1. Introduction

China's real estate boom has attracted a great deal of attention in recent years from investors and policy makers alike. For investors the real estate market offers profitable business opportunities, with housing emerging as one of the best long-term investment opportunities in China over the past decade. From a policy perspective, however, the rapid rise in prices poses risks. In an environment of high liquidity and rapid credit growth, as has existed in China over the past year, price bubbles can emerge that threaten economic and financial stability. And from a social perspective, affordability becomes the overriding concern. For these reasons, the Chinese authorities have recently implemented a number of measures, as described below, to cool the booming property sector.

This is our second annual Real Estate Outlook on China. The previous edition, published in May 2009 highlighted the bright long-term investment prospects for China's residential property market given rapid income growth, urbanization, and dwindling housing stocks. At the same time, however, the report found that in the near term prices were likely to undergo a downward correction in view of an oversupply in high-end residential housing—a prediction that remains valid in our view, but that to date has not yet materialized. The report concluded, nonetheless, that a hard-landing for the property market was unlikely, as underlying demand is expected to remain robust on the back of China's strong economic growth prospects, high savings rates, and proactive government policies.

The present report echoes some of the same themes, and updates recent developments in the property sector including policies to cool the market. We find that over the past year, the rise in housing prices has continued to outpace the rise in equilibrium values, implying an even larger downward correction in the near term.

In assessing trends and the outlook for the property sector, however, it is important to distinguish between short-term and long-term prospects. In the short term, as described below, rapidly rising prices may pose a problem for economic stability and affordability. We interpret recent measures to cool the market as aimed at addressing these concerns. Over the longer term, however, China's rapid income growth, urbanization, and demographics favor an increase in prices. We view such a medium-term outlook as part of the economy's evolving fundamentals, one that over long periods of time will largely be immune to the influence of micro and fiscal measures to cool the market.

The report is organized as follows. Section 2 reviews and updates policies over recent years to tame fluctuations in price movements. It assesses the impact of these policies and the near-term outlook for the property sector. Section 3 reviews international experience with housing price bubbles in the U.S., Japan, and Spain—all episodes of pronounced bubbles that offer important lessons—with a view to placing China's current housing price boom and affordability ratios in perspective; Latin America's policy approach to affordable housing is reviewed for lessons it may offer (Box 2). Section 4 updates our econometric model of equilibrium prices to assess the degree of overvaluation in the market. Finally, Section 5 concludes with our estimates and some remarks on the medium-term outlook.

2. Recent Developments and Outlook for the Housing Market[1]

2.1 A look back at measures to tame the market

Before assessing recent trends over the past year, it is useful to take a step back to view the fluctuation in housing prices and policy responses from a slightly longer perspective. In this regard it is useful to recall that China's market-oriented housing sector is relatively new, the outgrowth of reforms taken just over a decade ago in 1998 (see Box 1). When viewed through this lens, it becomes apparent that the authorities are in a "learning by doing" phase as they evaluate fluctuations in price movements in this new and expanding market, and use the range of tools available to them, including both administrative and financial policies, in order to smooth market fluctuations.

Prior to the global financial crisis, measures were taken to cool the housing market…

Prior to the global financial crisis in mid-2008, housing prices in China's largest cities rose rampantly. Out of a concern that the run-up in prices was driven by speculation rather than fundamentals, and to reduce the risk of emerging bubbles, the authorities implemented various administrative measures and financial policies to cool the market. These included increases in mortgage interest rates and required down payment ratios, as well as more stringent requirements for investment in the housing sector. The measures took effect from 2007, and the rising momentum in prices was contained successfully, with the pace of price rises peaking in late 2007 and declining through 2008 before eventually turning negative as the effects of the global financial crisis began to be felt (Chart 1). Prices in the Shenzhen market, for example, fell by 15% in early 2009.

…but the global economic downturn necessitated a shift to stimulate the market…

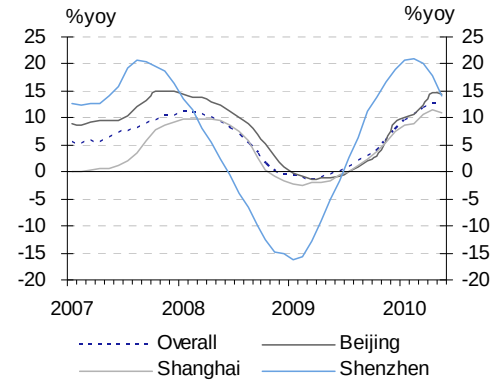
As has been well documented, the onset of the global financial crisis necessitated a shift toward more expansionary policies to support growth. In late 2008, the authorities changed their policy direction, giving rise to a RMB 4-trillion package aimed at stimulating the economy through massive infrastructure and other fixed asset investment, fueled by what eventually became record-high credit growth.

In line with this policy shift, cooling measures in the real estate market were lifted. Efforts were undertaken to stimulate demand and investment in the residential housing market. In order to promote mortgage lending, for example, in October 2008 down payment requirements for residential housing purchases were reduced to 20% from 30% and mortgage interest rates were permitted to be as low as 70% of the benchmark interest rate. The relaxation was also applicable to buyers of a second property if they planned to improve residential conditions—in this way, the policy was meant to apply to "real", rather than speculative investors. Meanwhile, taxes on land appreciation and stamp duties were exempted in November 2008. In January 2009, housing sales taxes were exempted for owners who held their investments more than two years, reduced from a previous holding period of five years. In May 2009, the capital requirement for real estate developers was also lowered to 20%.

As a result of the stimulus measures and the recovering economy, the real estate market began to experience a dramatic turnaround from March 2009. To a large extent, this was because of the significant injection of liquidity. A substantial portion of banking credits found their way to property speculators, contributing to the boom in home buying and property values. Both the volume of transactions and prices rose rapidly, especially in big cities such as Beijing, Shanghai, Guangzhou, and Shenzhen. As a result, current price levels are much higher than those that prevailed prior to the global financial crisis (Chart 2).

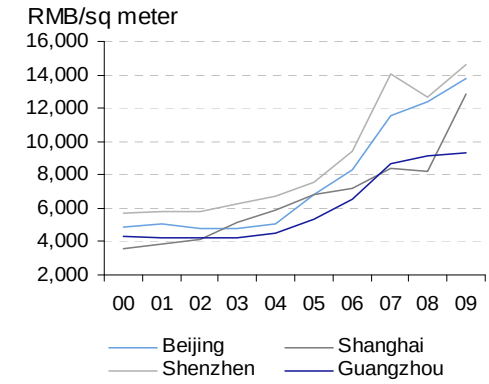
[1] The contributions of Yuande Zhu, previously with BBVA as Senior Economist, to this section are gratefully acknowledged.

Chart 1
The rise and fall of property prices



Source: NBS, CEIC and BBVA Research

Chart 2
Housing prices are above pre-crisis levels



Source: NBS, CEIC and BBVA Research

2.2 Recent measures to prevent housing market bubbles

Fearing that runaway housing prices could lead to a bubble, the authorities have more recently rolled out a series of policies to curb speculation in the property market and rein in surging prices. In particular, China's State Council reinstated its previous property tax rule for second home purchases for selling within five years in December 2009, and doubled the down payment requirement to 40% in January 2010. For its part, the PBOC provided supporting monetary measures through hikes in reserve requirements and tighter lending policies for banks.

However, the first round of measures proved insufficient to put a break on rising prices. Indeed, price increases accelerated to a record 12.8% in April. These trends prompted the authorities to take further steps in mid-April to contain prices increases by discouraging speculative home purchases. Recent measures included a further increase in down payment requirements for second home purchases, from 40% to 50%, while loans for third home purchases were forbidden. In addition, mortgage interest rates for second home purchases have been raised from 70%-80% of the benchmark interest rate to 110%. The government also introduced measures to restrict activities in the real estate market of state-owned enterprises (SOEs) whose core business is not real estate. On the supply side, the availability of land for affordable housing development was also increased. Local municipalities also announced cooling measures in the property sector, in line with National Guidelines.

…but the impact of these policies on prices so far has been limited[2]

Despite recent tightening measures and shrinking sales volumes, the impact on property prices to date has been modest. The pace of price increases has begun to moderate (Chart 1), and price declines have been reported in some markets such as Shenzhen and Guangzhou, and even Beijing.

Nevertheless, prices have yet to react in a significant way. Several reasons might explain this, including the usual lags associated with fluctuations in sales volumes and inventories (more on this below). In addition, the policy environment is made difficult by the large and sometimes conflicting set of goals to be achieved by the authorities, along with a limited set of policy instruments available to them. Regarding goals, it has sometimes been unclear whether the aim of specific measures is meant to maintain financial stability by preventing overheating in the real estate industry, to maintain housing affordability for low income households, or some combination of both.

Related to this, given the growing share of the real estate sector as a source of GDP growth—investment in this sector amounts to approximately 20% of total fixed asset investment and value added accounts for 5% of GDP—there are economic incentives for relevant officials to seek to keep prices high given China's ambitious growth targets. Thus policy makers will necessarily take into account the policy impact on related industries and the overall effect on economic performance. As a result officials may have competing goals—a desire to maintain rapid economic growth while at the same time slowing the real estate industry—resulting in less than full implementation. Complicating matters further, local governments often act as not only the regulator, but also an important interest group in this market. Indeed, local government revenues and financing often depend on land transfer income and high land prices.

[2] This subsection is based on contributions from Shulin Li, CITIC Bank.

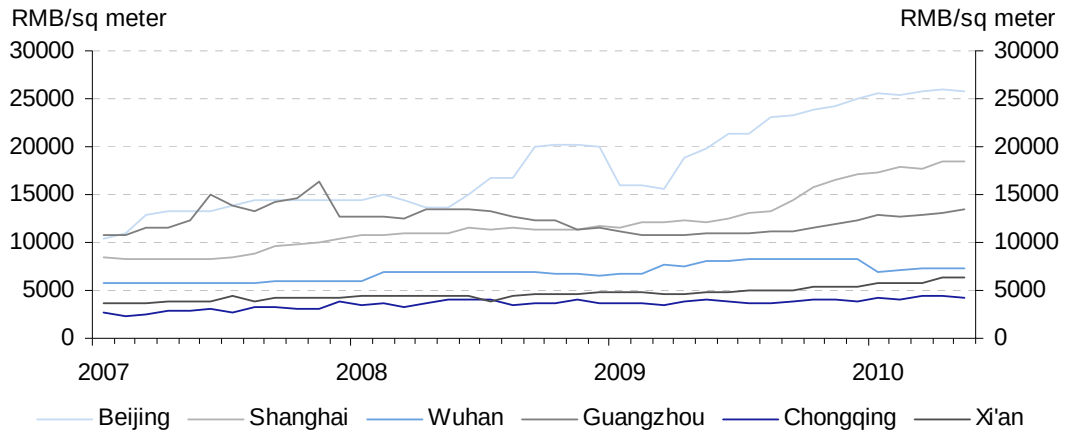
In addition to the above factors, given a still-limited range of investable assets, real estate has become an important element of household wealth. Harsh tightening policies may undermine household wealth, and thus meet resistance in implementation. Credit policy also appears to have so far yielded a limited effect on regulating the real estate industry. Regulations of second mortgage loans will likely have a short-term effect in reducing speculative demand. Interest rate hikes, which have so far appear to have been viewed as an excessively blunt, and therefore less preferred instrument, might have a greater impact on the market. In anticipation of higher inflation and greater currency flexibility (appreciation), downturns in the stock market such as has occurred in recent months, can result in the near term in larger capital flows into the real estate sector, further driving up prices.

2.3 Current market conditions and the near-term outlook

…still-high prices are likely to prompt further measures to cool the market

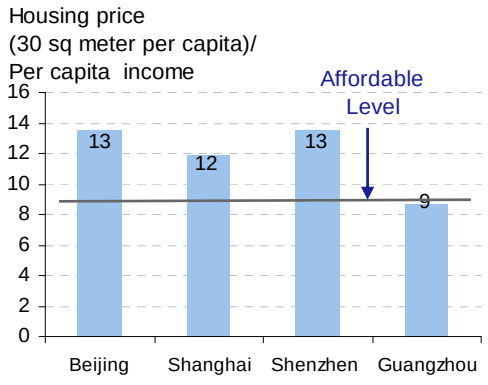
By any measure, housing prices are still relatively high (Chart 3), prompting the authorities to respond to public dissatisfaction on affordability grounds (Charts 4-6). Measurement problems, however, make the analysis tricky, due to the absence of a universally accepted property price series for the Chinese real estate market. Statistics compiled by the National Bureau of Statistics (NBS), for example, show that residential prices for Beijing in 2009 averaged RMB 13,799 per square meter, while the National Development and Reform Commission (NDRC) survey showed an average of RMB 21,940 per square meter, with RMB 25,932 at year end. To the extent that NDRC data are more concentrated in downtown city locations, they may be a better gauge of housing trends in the large cities. NBS data cover a broader regional area.

Chart 3
Downtown price trends in major cities



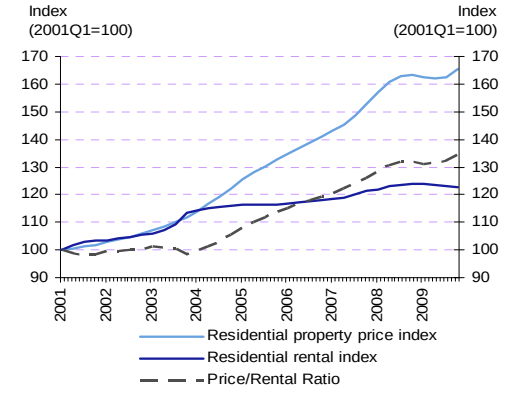
Source: CEIC and BBVA Research

Chart 4
Prices are stretching affordability levels



Source: CEIC and BBVA Research

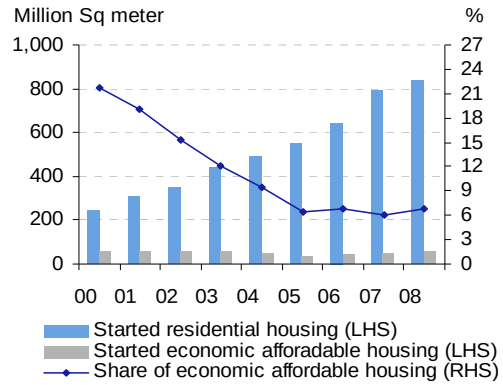
Chart 5
Price/rental ratios have been rising



Source: CEIC and BBVA Research

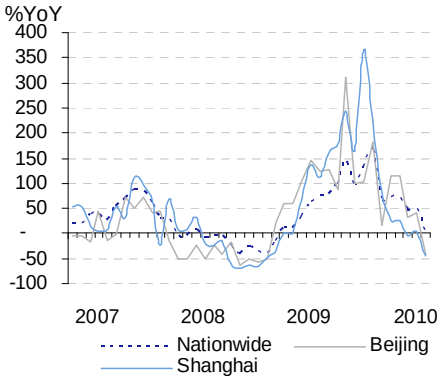
To date, as noted above, the authorities' measures have resulted in a sharp fall in the volume of market transactions, without a significant decline in prices. Beyond the issues discussed above, this may be due to the typical lags involved, whereby market participants take 3-6 months to wait and watch for the impact on prices. In such an environment, buyers might hold off their purchases in anticipation of price cuts by cash-constrained developers. Consistent with this sort of behavior, the growth of property sales in large cities has fallen quickly (Chart 7), while prices have remained high. Some market participants expect the authorities to ease up on their tightening efforts only once property prices in key cities have shown a 20-30% downward correction from current levels.

Chart 6
Affordable housing investment has lagged behind



Source: CEIC and BBVA Research

Chart 7
Sales volume growth has fallen rapidly

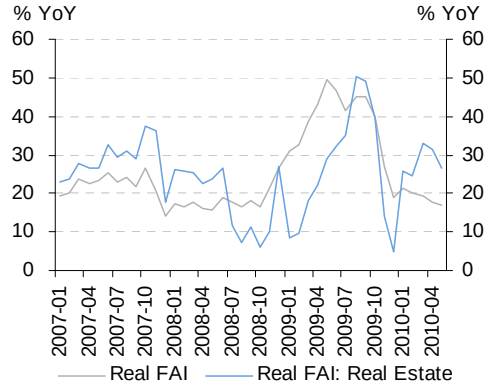


Source: CEIC and BBVA Research

…housing inventories are likely to rise in the second half of 2010

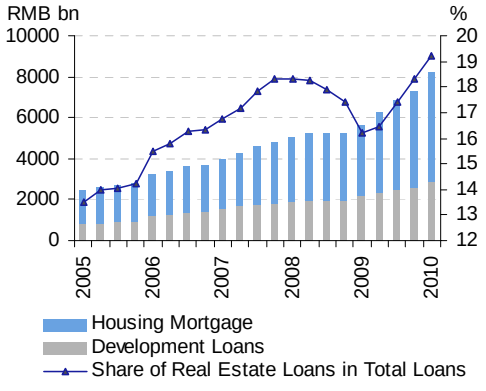
Driven by renewed confidence in the housing market and rapid real estate lending (Charts 8-10), construction of new homes accelerated during the second half of 2009. This should result in an increase in the inventory of floor space for sale in the coming 3-6 months (Chart 11), given the usual one-year turnaround time to for newly constructed residential buildings to be converted to pre-sale status. Housing sales will likely experience slower growth in the second half of 2010 in contrast to the boom in 2H09. Rising housing inventory, in turn, coupled with dampened buying sentiment under the impact of recent cooling measures should accelerate downward pressure on selling prices.

Chart 8
Investment growth in real estate remains high



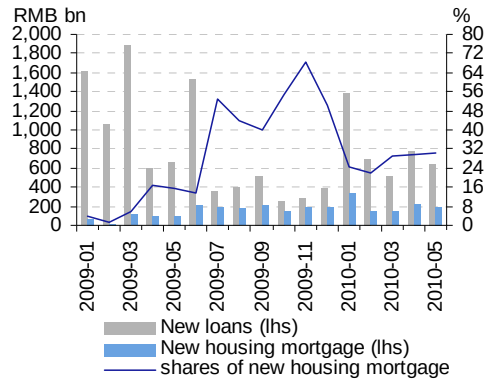
Source: CEIC and BBVA Research

Chart 9
Real estate loans (mainly to developers) have increased



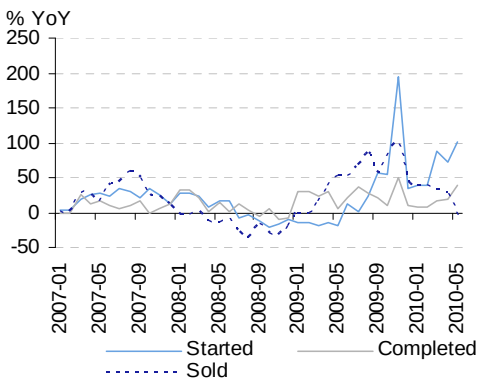
Source: CEIC and BBVA Research

Chart 10
Share of mortgage loans in new credit is still high



Source: CEIC and BBVA Research

Chart 11
Floor space dynamics



Source: CEIC and BBVA Research

…new measures may be introduced to cool the market, possibly including a property tax

The major new policy initiative recently under discussion is the introduction of a property tax. The State Council has approved a "gradually accelerating property-tax reform" as part of a radical fiscal revision proposed by the National Development and Reform Commission (NDRC). The proposed property tax has been reported to be applicable to properties for lease or investment rather than owner-occupied residences. (Currently, taxes in China are levied only at the point of transfer, rather than on an ongoing ownership basis.)

Uncertainty about the extent and timing of further measures persists. In particular, risks to the global outlook may cause the authorities to delay new tightening measures. However, we do not rule out the possibility of more cooling measures in the pipeline if housing prices in key cities continue to rise over the following months. At the same time, we view the probability of a hard-landing for China's property market as low given the strong medium-term outlook. Namely, urban demand for housing should remain resilient on the back of a high savings ratio, good growth prospects, low interest rate environment, and proactive central and local government policies.

Box 1: China's Housing Market

A brief review of the past 20 years

A new market

For all intents and purposes, China's market-oriented real estate sector is still in its relative infancy. The market was "born" in 1998 when the government ended its practice of allocating housing units. Table 1 highlights relevant milestones for the Chinese real estate market.

Pre-1998: coexistence of a planned and market system

In the 1980s, the government reformed its land administration and housing systems as a part of a nationwide economic restructuring program. Beginning in 1992, the central government gradually shifted the welfare housing distribution system to a market-oriented one. A land tenure system was introduced to replace collective ownership, and state-directed allocation and planning of land use gave way to a market-oriented allocation system. During this period, planned housing allocation and public sales coexisted. The reforms spurred an investment and construction boom in the early 1990s. A rapid run-up in land and housing prices led to the accumulated of risks in the real estate market. As macro tightening measures were introduced in 1993 to slow the economy, a side-effect was a slump in housing prices, which left a large stock of unfinished houses in Hainan, Beihai, and other cities. The slump lasted for six years before the property industry began to revive.

Post-1998: the development of mortgage lending fosters a boom cycle

Coinciding with the ending of the government's policy of allocating housing units in urban areas was the onset of the Asian financial crisis, leading to an economic downturn. An expansionary fiscal policy was adopted to contract recessionary forces, aimed primarily at infrastructure spending. The government also resorted to measures to stimulate domestic demand through the real estate sector. As a consequence, mortgage lending emerged in 1998, and commercial banks began to offer loans for up to 80% of the purchase price and with a maximum term of 30 years to individual buyers. The residential mortgage market became a financial engine for the booming residential housing development and sustained economic growth.

Housing prices in major cities rose rapidly beginning in 2003. Seeking to smooth the cycle, the State Council urged relevant Ministries to prepare regulations to cool the heated market. In this regard, the PBOC promulgated Circular 121, which imposed more stringent requirements on real-estate financing to reduce systemic banking risks. However, the regulation ran into popular resistance. Subsequently, most policies at this time focused on suppressing investment in housing, rather than reducing demand, which had the unintended consequence of leading to a further acceleration in housing prices until late 2007 when the U.S. sub-prime crisis began to emerge.

With inflation on the rise in 2007, the PBOC kept tight reins on monetary policy. The mortgage down payment ratio for second home purchases and beyond was increased from 30% to 40%, together with a 10% premium in the mortgage interest rate. Commercial banks began to control loans to real estate developers and the land management authority launched a campaign to remedy irregularities in the market. In this way, land supply and credit, two lifelines of real estate development, fell under short-term macro-management policies. Property developers have subsequently all felt the pressures of induced-deflation caused by government's macro-control policies. The previously soaring housing markets in southern China began to fall in 2008.

In the more recent period, the impact of the authorities' tightening measures has had an immediate impact on the volume of transactions, with property sales falling rapidly. Prices, as noted in the main text, have yet to react in a meaningful way. In addition to efforts on the demand side to curb speculation, the authorities are undertaking measures to develop economically affordable housings now, an effective policy to alleviate affordability issues for many low income families. The more recent round of measures should be more effective than those adopted in previous cycles, in which many policies were ill-suited by restraining the supply.

Table 1 provides a list and timeline of recent central and local government policies aimed at cooling the property market to prevent price bubbles

Table 1
Update of Real Estate Policies, 2009-10

Date	Policy Description
December 2009	Increasing the supply of affordable housing, controlling speculative demand, strengthening market regulations and promoting the construction for social security housing projects.
January 2010	The central bank raises the yield on one-year bills by 8 basis points.
January 2010	The central bank raises the required reserve ratio by 0.5 percent.
January 2010	Increasing the effective supply of affordable housing, regulating housing demand, discouraging speculative demand. Down payment ratio of second mortgage must be no less than 40%
April 2010	Curbing unreasonable housing demand, more restrictive regulation of financing activities and land purchases by real estate developers
April 2010	Announcement of the possibility of introducing a property tax on a pilot basis in Shanghai, Beijing, Shenzhen and Chongqing. The property tax is said to be 1.2 – 1.5% of 70% of the historical transaction value of each home.
April 2010	The State Council decides to tighten mortgage rates and down payment requirements. Details include: 1) Second home buyers are required to pay 50% down payment instead of 40%. Mortgage rates are also raised to 1.1 times the benchmark mortgage rate of 5.94% vs previously 0.8-0.85 times the benchmark rate. 2) Banks are required to impose higher down payments for buyers of third or more homes, although it did not specific the percentage. 3) First-time home buyers of units larger than 90 sqm have to put down a 30% down payment, increased from 20%.
April 2010	Bank of China (BOC) becomes one of the first state banks to announce adjustments in existing customers' mortgage contracts requirements upon expiry to current market standards. Existing mortgagees' will be required to follow terms of: 1) A minimum 30% down payment for first home buyers purchasing units less than 90 sqm, and 0.85 times the benchmark rate of 5.94%; 2) A minimum 50% down payment for second home buyers and 1.1 times the benchmark rate of 5.94%; 3) 1.2 times the benchmark rate (5.94%) for third or more homes. For third or above home buyers, BOC reserves the right to require a larger than 50% down payment or not approve the mortgage applications, if the applicants show a high-risk credit profile.
June 2010	The yield of the one-year bills issued by the People's Bank of China (PBOC), the central bank, rose by 8.32 basis points to 2.0096 percent.
June 2010	MLR, MHURD and local governments were asked to enforce stricter collection of LAT. Specifics include: 1) Setting pre-collection rate not less than 2%/1.5%/1% in eastern/central and northeastern/western provinces respectively; 2) a minimum of 5% of LAT (vs property sales) to be collected if developers fail to verify the final LAT liability amts; 3) Investigations to be carried out in 3-5 cities of overheated property prices of each provinces by end of June for LAT settlement.
June 2010	MHURD, PBOC & BOC jointly issues a statement to enforce 2nd home buyer/mortgage definition. With immediate effect, the following will be counted as 2nd home purchases and extended with 2nd or above mortgage terms: 1) Buyers that own at least 1 property; 2) Ownership to be defined according to family as a unit, instead of number of persons; 3) Buyers even with paid-off mortgage liabilities will still be counted as second home purchasers; 4) Non-local buyers without at least one year of local tax records or social securities records will be considered as a second home buyer according to different banks.

Source: BBVA Research

3. Assessing China's Property Bubble from an International Perspective

3.1 Introduction

In this section we briefly review the experience of housing price bubbles in other countries—Japan (1980-1991), Spain (1997-2007) and the United States (1997-2008)—to assess where China stands in its current housing price cycle. We also examine some of the common features across bubble episodes, focusing on the evolution of property prices, housing affordability and relevant macro indicators and monetary and credit policies. The section seeks to shed light on the question of whether there really is a bubble in the Chinese real estate market. Such a review has limitations, of course, and inevitably provides only a broad-brush of the key issues. In looking for common ingredients across bubble economies, for example, it leaves out important differences that may exist on the regulatory front, among others.

In a nutshell, the overview reveals that, in comparison to other economies with large property bubbles, China's property sector does not yet appear to be in significant bubble territory. However, the seeds are there. As noted in the previous section, property prices have been rising rapidly as accommodative credit policies designed to counter the negative impact of the global economic downturn have injected liquidity into the market which, in an environment of low inflation, have found its way into the property sector.

3.2 A comparison of housing price bubbles

…the run-up in China's housing prices does not seem all that large

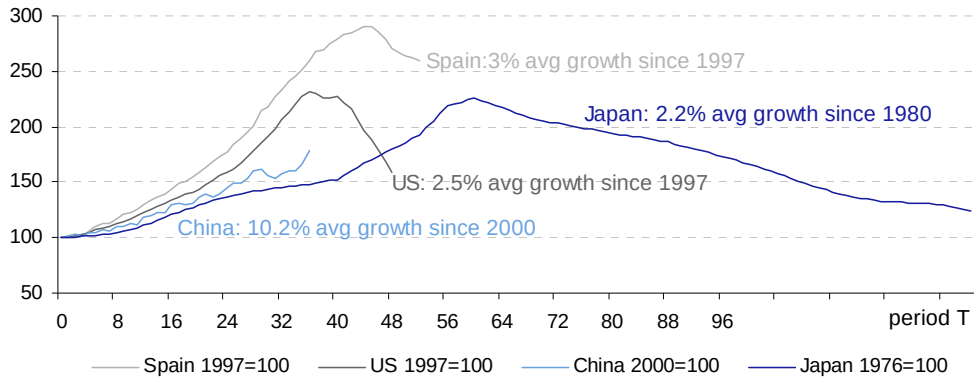
When set against the experience with bubbles elsewhere, the recent rise in Chinese housing prices does not appear all that worrisome. The following graph illustrates the point (Chart 12). It juxtaposes the run-up in residential property prices in China against the rise in prices in Spain, the US, and Japan (residential property prices for the former two, and land prices for the latter) during their respective bubble periods.[3] Spain is seen to have experienced the largest bubble, with prices soaring almost 200%, followed by the US and Japan, where prices rose by around 130% each. Japan experienced the most elongated bubble, lasting 10 years. By comparison, prices in China have risen by a comparatively smaller 75%.

It therefore appears that the bubble in China – to the extent that one exists at all – has not yet reached the peak levels in other countries. Moreover, China's relatively high GDP growth rate means that higher price increases may have greater underlying support. However, on a city-by-city basis, there may be pockets of more extreme bubbles, especially in large cities as seen from Section 2 (Charts 1 and 2).

Importantly, to assess whether a given price trend constitutes a bubble, it is necessary to assess the underlying causes of price movements. In this regard, rapid income growth and ongoing urbanization in China are key underlying factors that may well explain why prices are rising from a medium-term perspective (see Section 5 below).

[3] The starting periods are defined using a standard approach common in the literature. See IMF (2003) for more on how to define asset price booms (http://www.imf.org/external/pubs/ft/weo/2003/01/pdf/chapter2.pdf).

Chart 12
Residential property price index



Source: CEIC and BBVA Research
Note: the period interval is a quarter

3.3 Housing affordability: an international comparison

…although affordability measures are stretched

An alternative measure to gauge the extent of price bubbles is housing affordability, defined as the ratio of median property prices to median household income. By this measure, and in contrast to the analysis above, China's price rise exceeds that of the comparator cases (Charts13-16 and Table 2). For instance, the housing price to income ratio is about 20 for Beijing and Shanghai, whereas it is only 10.0 for Los Angeles and 8.4 for Vancouver (Asian Development Bank, 2010).

There are, however, limitations to using the index on a comparison basis. First, the accuracy of income data in China may be in question due to underreporting by high income families (see CITIC 2009). Another issue is that affordability should really be measured on a forward-looking basis, and the distortion of using current income is larger the faster growing is a given economy (as in China).[4] Nevertheless, the unusually high price-to-income ratios in big cities suggest that housing affordability is a legitimate concern in China.

A related issue for affordability in the Chinese real estate sector is that the supply of affordable housing has been lagging behind (Section 2, Chart 6). This is mainly due to low profitability for real estate developers in investing in affordable housing. Although the government has placed considerable emphasis on the provision of affordable housing to mid- and low-income households as one of the goals of housing reforms in China, the objective has fallen short (Asia Development Bank 2010). In particular, real estate developers have managed to sidestep the central government's policy in support of affordable housing for lower income households—namely a "90-70" policy under which 70 percent of housing on the market must be no more than 90 square meters.

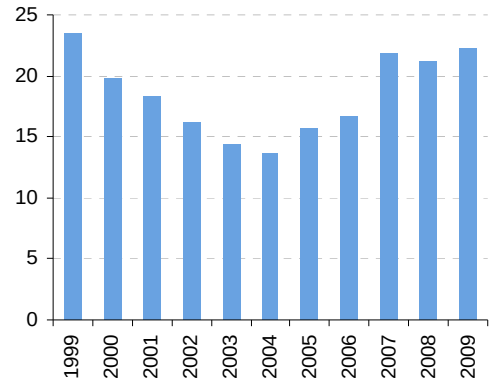
[4] Regarding misreporting of income, it is generally believed that it is the top group of high income earners in China who tend to underreport their hidden illegal income. To get around this problem, it is best to use median household income to avoid measurement problems. Given the available data, we look at non-luxurious commodity property prices only.

Table 2
Affordability Index Measured by Price/Income Ratio

China		International	
City	Price/Income [5]	City	Price/Income [6]
Beijing	22.3	Los Angeles, USA	10.0
Shanghai	19.3	London, UK	6.9
Shenzhen	22.1	New York, USA	7.1
Guangzhou	14.7	Miami, USA	7.2
Chongqing	9.3	Sydney, Australia	8.3
Tianjin	13.9	Vancouver, Canada	8.4

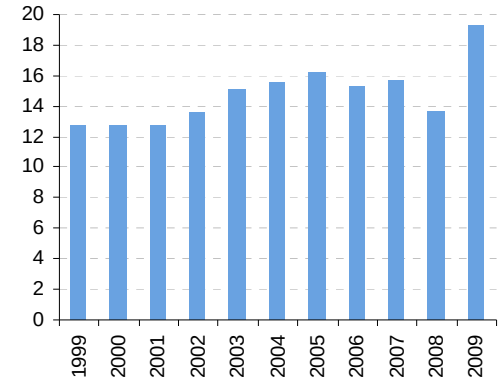
Source: Asian Development Bank and BBVA Research

Chart 13
Beijing: affordability index



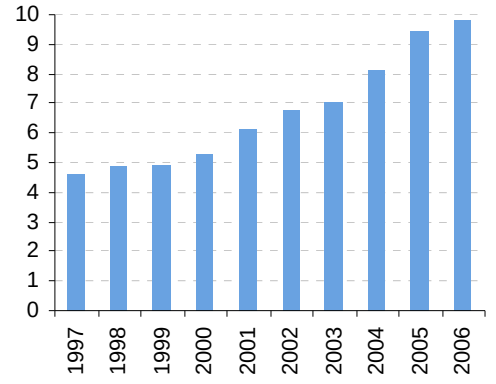
Source: CEIC and BBVA Research

Chart 14
Shanghai: affordability index



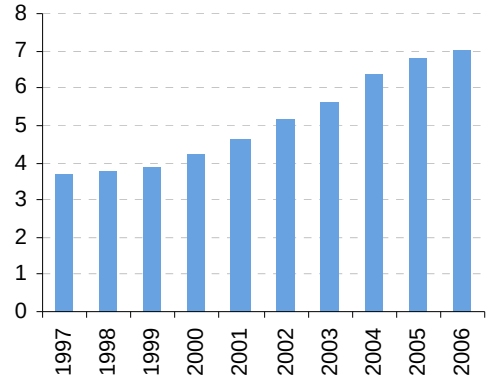
Source: CEIC and BBVA Research

Chart 15
San Francisco: affordability index



Source: Son (2007) and BBVA Research

Chart 16
New York: affordability index



Source: Son (2007) and BBVA Research

[5] Based on per capita income and average housing price (National Bureau of Statistics 2009); housing price was calculated assuming 90-square-meter apartment.
[6] Based on median household income and median house price data for 2006, available at: http://www.jchs.harvard.edu/publications/markets/son2007/metro_affordability_index_2007.xls

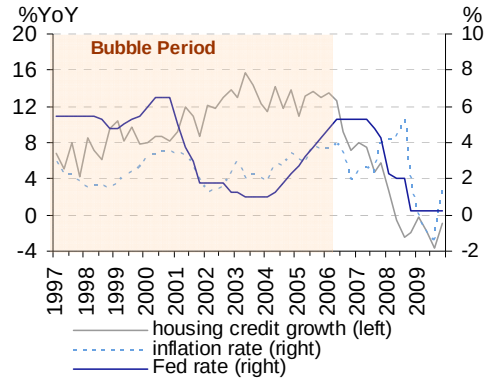
3.4 Causes of real estate bubbles: what lessons can we learn?

While the causes of real estate cycles vary from country to country, common characteristics observed in bubble economies include excess liquidity and rapid bank lending, usually all within a context of low and stable inflation.

In the case of United States, the Federal Reserve's expansionary monetary policy during 2001-05, which had been justified by low inflation rates, helped support unsustainable housing prices and mortgage financing (see White 2009 and Chart 17). As is by now well known, lax regulatory oversight and subsidies pushed up demand for housing purchases and extension of subprime mortgages. With implicit guarantees from the federal government, Fannie Mae and Freddie Mac helped build a market for securitized subprime mortgages, which further contributed to the housing bubble. Being fueled by easy credit and lax monetary conditions, housing prices reached their peak in mid 2006 before the subprime mortgage crisis broke out in 2007.

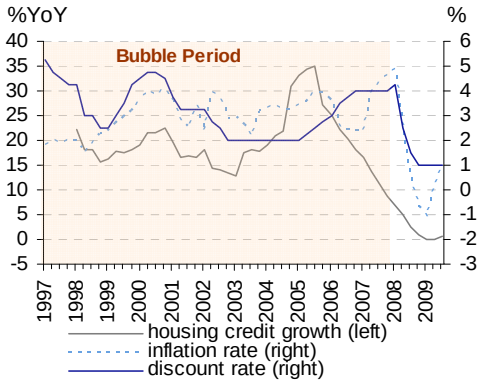
The Spanish economy is now feeling the impact of its own housing price bubble. A long period of low interest rates—in this case not due to lax monetary policy, but by virtue of the loss of an independent monetary policy from Spain's membership in a monetary union—fueled a credit boom (Chart 18). Loan growth surged in 2004-05, which was a major contributor to the housing bubble.

Chart 17
United States



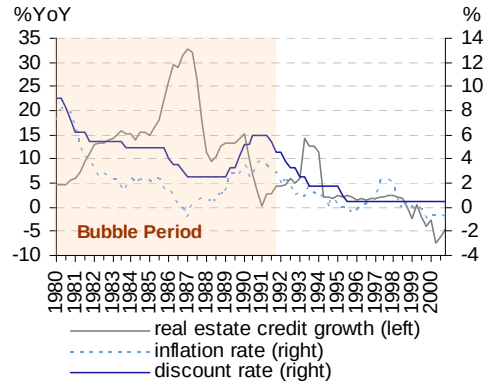
Source: CEIC, Datastream, and BBVA Research

Chart 18
Spain



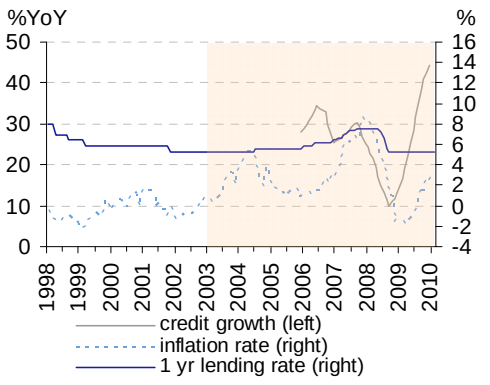
Source: CEIC, Datastream, and BBVA Research

Chart 19
Japan



Source: CEIC, Datastream, and BBVA Research

Chart 20
China



Source: CEIC, Datastream, and BBVA Research

Japan offers an even clearer case of how the impact of monetary policy can lead to credit and housing price booms. To counter the economic downturn triggered by the yen appreciation in the mid 1980s, the Bank of Japan implemented easy monetary policy to boost domestic demand, and bank lending doubled from the mid-80s to the mid-90s, almost half of which went to the real estate sector (PIMCO, Bank of Japan). As illustrated by Chart 19, real estate credit growth reached its peak in 1987 (33% y/y), while the discount rate was held at the low level of 2.5% for three years till 1989. One of the differentiating characteristics of the Japanese bubble is that it was driven mainly by commercial instead of residential real estate. About 80% of the credit growth during the bubble period was accounted by loans to businesses in the commercial sector (Bank of Japan). Again, low inflation helped justify Japan's loose monetary policy until the bubble burst in 1991 and the economy entered deflation.

We now turn to a brief discussion of possible causes of China's housing price surge in recent years. Rapid growth during 2005-08, and the fiscal stimulus measures adopted in late 2008 are major contributors. From a short-term perspective, the stock of housing fell abruptly in 2008, and combined with a relatively inelastic supply failed to adjust according to speculative demand in 2009. Accommodative monetary policy also contributed to the heat-up of the market, as loans to real estate developers grew 44.2% (y/y) and consumer mortgage loans surged 50% (y/y) in 2009. Moreover, the accumulation of foreign reserves exacerbated excessive liquidity and hot money inflow encouraged speculative demand.

Against the background of other bubble cases, is China at risk of a similar real estate bubble? It does seem that similar conditions to those present in Japan, Spain and the U.S. also exist in China: inflation remains relatively low, and credit has been booming after the stimulus package in 2008 (Table 3). In particular, China's inflation is in line with the other bubble cases and its credit growth to the real estate sector exceeds that of the other cases by a considerable margin. While the policy rate is relatively high, monetary conditions should not be considered as tight given ample liquidity and the very rapid GDP growth rate.

However, having learned the lessons offered by international experience, the authorities appear well aware of the potential risks of overheating and have taken early measures to prevent the asset bubble from being built up and to reduce the risks of speculative property investments, even as the demand for residential real estate in China is usually viewed as different in nature from the speculative demand for commercial real estate in Japan (PIMPCO 2009).

Table 3
Housing price bubbles: international comparison of macro-indicators)

Country (%, period average)	Inflation	Real Estate Credit growth	Policy rate	GDP growth
Japan (1980-1991)	2.6	13.9	4.9	3.8
Spain (1997-2008)	3.0	19.6	3.3	3.6
United States (1997-2006)	2.5	10.5	3.7	3.2
China (2003-present) *	2.6	26.1	5.9	10.5

Source: IMF, CEIC, Datastream and BBVA Research
* Credit growth in China from 2006-present.

Box 2: The experience from Latin America in financing affordable housing

This box reviews some of the policy approaches to affordable housing in Latin American countries, with a view to providing a perspective on policies in other emerging market economies that may be relevant for China.[7]

Since the 1990s the Chinese government has been implementing various measures to increase the supply of affordable housing for low income segments of the population. Such efforts have recently intensified under the fiscal stimulus package. Approaches have included both supply side measures to provide land to developers of low-cost housing, and demand side measures to subsidize housing costs for low income households.

Affordable housing in China consists of "economic housing", for lower middle income families and "social security housing" for low income households. So far such programs are still in the process of experimentation. For those income groups who are excluded by the existing social security housing programs but who cannot afford economic housing, the government plans to develop public rental housing programs. The success of affordable housing programs depends on the coordination of central and local governments, among other things to ensure an adequate supply of affordable housing.

A common trend in Latin American countries is to lower the financial burden on low income households through subsidies on initial down payments. Some countries also try to encourage greater supply of affordable housing through income tax exemptions on building projects aimed at low income households.

In **Chile** the Government provides direct financing to facilitate home ownership for low income households. The resources used represent less than 1% of total mortgages. In order to qualify households are required to: (i) provide proof of their income and (ii) have accumulated a minimum amount of savings to be used as a down payment. Another programs provides subsidies for somewhat higher income households through a state-owned bank, BancoEstado. Although their share of the market is high, 24% of total mortgage value and 54% of the total number of operations, BancoEstado does not really compete with the rest of the banking system, since their clients are households with income levels that are too low for other banks. In October 2008, as a component of the fiscal stimulus package, the Government decided to extend this program to medium income households to cover between 10% up to 20% of the house purchase value.

In **Peru** the Government has created three programs aimed at providing financing for low and middle income households. The first and most successful is "Mi Vivienda" ("My House") which started in 2001 and now accounts for 25% of total mortgages. It is quite popular since it rewards debtors who pay on time with the so called "Bonus for Good Payers" which may reduce the mortgage up to 15% of the housing purchase price. Other programs were later created focusing on middle-income "Mi Hogar" ("My Home") and very low income households "Techo Propio" ("Own Roof"). The latter allows a very low down payment of just 3% of the purchase price, although interest rates are usually higher than in the other two programs.

In **Colombia** the Government policy is to grant one time housing subsidies for lower income sectors of the population. This program is aimed at households with monthly incomes below a minimum threshold. Household must provide at least 10% of the housing purchase price as a down payment and subsidies, which are progressive, can account for 4% to 42% of the total house value. In order to foster mortgages to low income families, the Government grants up to 30% of the total loan. There is also an income tax relief for building projects targeted at the lowest income households. In 2009, as a countercyclical policy, the Government introduced a temporary reduction in interest rates for seven years from three up to five percentage points, to stimulate the acquisition of new homes. This program is focused on low and middle income families and has proved to be more successful than other policies.

In **Mexico** the Government supports lower income workers through specialized public institutions to develop the housing sector and lending mortgages. Policies are focused on the demand side and include direct subsidies to low income households which lack or have poor credit histories. Eligibility criteria for single buyers are to earn less than 2 minimum wages, whereas for couples the threshold is 4 minimum wages. The minimum down payment is 5% of the house price and buyers are responsible for part of the transactions costs. Between 2001 and 2006, 1.4 million subsidies had been announced, accounting for 10% of banks' total lending mortgage portfolio.

At least four important conclusions emerge from Latin America's experience in providing housing affordability support to low and middle income families. First, close coordination across institutions and long-term planning are essential. Second, programs have been more successful the less binding are their conditions, and benefits seem to be higher when interest rates (debt service) are reduced, rather than reductions in down payment requirements for home purchases. Third, besides measures on the demand to encourage purchase of affordable housing, measures on the supply side are needed to create incentives for developers to construct new homes oriented towards low-income families. Finally, in designing financial vehicles for affordable housing, care should be exercised to ensure that such programs do not compete with general facilities of the banking system.

[7] This box was coordinated by Mario Nigrinis, Senior Economist, BBVA Research.

4. Are China's Housing Prices Misaligned with the Fundamentals of Supply and Demand?

Estimating a model of supply and demand…

Following on last year's report, we update our empirical model to estimate the degree of misalignment between actual and equilibrium housing price values in China's largest metropolitan areas (Beijing, Shanghai, Shenzhen, Guangzhou, Chongqing and Tianjin). Given limitations in the model, uncertain data quality, and the complexities of an analysis such as this, the results are intended as suggestive only, and are not meant as a prediction of near-term price levels.

Equilibrium prices are estimated with an econometric model using a demand and supply framework (see the Appendix for details). The underlying factors in the model include housing stocks, real income growth, interest rates, population density, and construction costs. These factors determine the equilibrium prices by affecting housing demand and supply. In general, higher real income growth, higher population density, and lower mortgage rates will increase housing demand, and result in higher equilibrium prices all else equal. On the other hand, lower housing stocks, higher construction costs, and higher interest rates on real estate loans will reduce housing supply, also driving up equilibrium prices.

…with some important up-front caveats

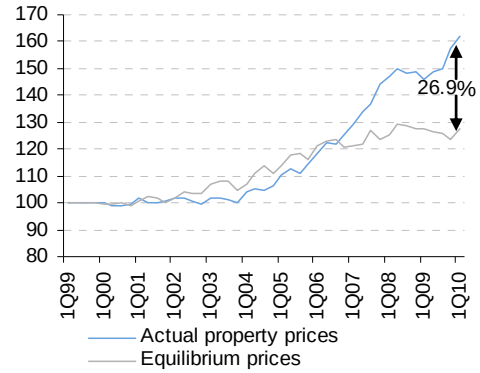
It should be noted that the equilibrium prices in the model are backward-looking. Ideally, forward looking variables such as future expected income (permanent real income) and expected returns on housing investment should be factored into the model. Such as an extension of the model is the subject for future research. We suspect that the model's estimated equilibrium prices are biased downward, and accordingly the deviation we report between actual prices and equilibrium prices might not be as large as we estimate considering the prospect of a continued rapid economic growth and the development of financial market in China in the medium term.

Indeed, it may well be the case that, what appear as high prices relative to estimated equilibrium, may actually be consistent with investors' forward-looking expectations of future prices. The problem this poses for affordability in a rapidly growing economy such as China's, in the presence of credit constraints and imperfect information, are obvious. Expectations of rapid income and economic growth drive up prices today, but housing purchasers are unable to fully leverage their individual future income prospects due to credit constraints. This creates a wedge between current income levels and housing prices.

The model suggests that current price levels exceed equilibrium…

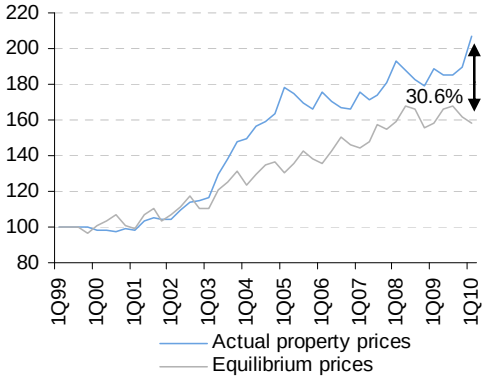
According to the model results, in the first quarter of 2010, housing prices in all of the cities in our sample with the exception of Guangzhou were significantly higher than the estimated equilibrium levels, by some 20-30 percent. The results also point to excessive valuation going back to 2003 (for Shanghai) and 2004 for the other cities. These dates coincide with a period of relatively low interest rates, as observed in the previous section.

Chart 21
Property prices in Beijing



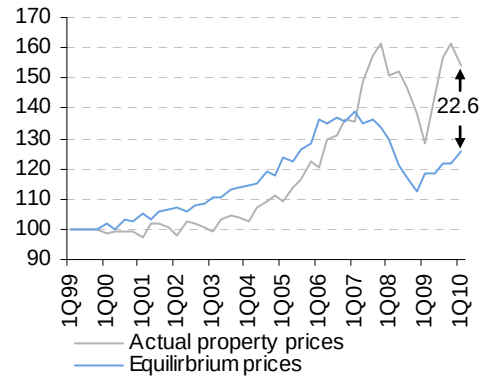
Source: NBS, CEIC, and BBVA Research

Chart 22
Property prices in Shanghai



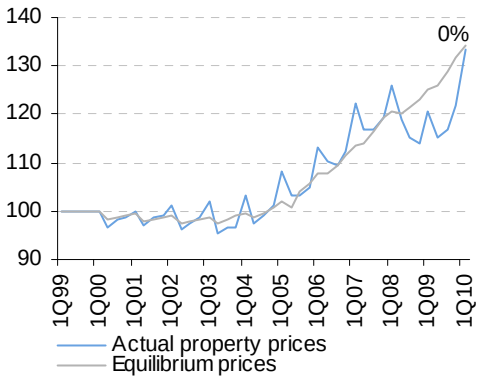
Source: NBS, CEIC, and BBVA Research

Chart 23
Property prices in Shenzhen



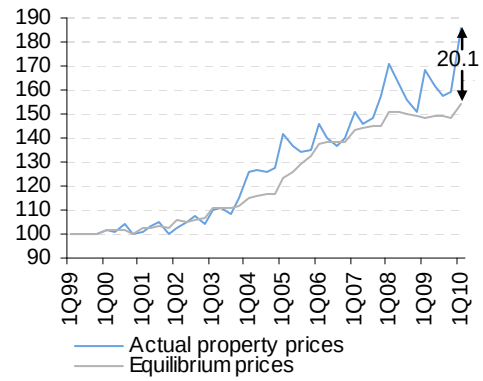
Source: NBS, CEIC, and BBVA Research

Chart 24
Property prices in Guangzhou



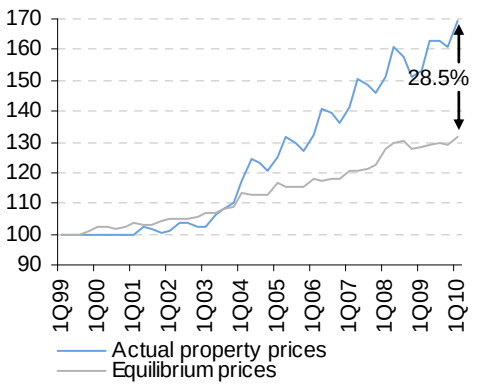
Source: NBS, CEIC, and BBVA Research

Chart 25
Property prices in Chongqing



Source: NBS, CEIC, and BBVA Research

Chart 26
Property prices in Tianjin



Source: NBS, CEIC, and BBVA Research

For **Beijing**, the estimates indicate that between 1998 and 2003, actual property prices were below equilibrium prices (Chart 21). After 2004, however, actual prices rose rapidly, by 60% over the last 6 years, while the fundamental factors determining demand have not risen at the same pace. At the end of 2006, actual prices crossed above equilibrium prices. It should be noted that equilibrium prices are estimated to have increased by around 30% in last 10 years, largely driven by population growth and rapid income growth. Our model estimates suggest there are at least 27% of overvaluation on average in Beijing's housing prices in the first quarter of 2010.

In **Shanghai**, our estimates show that actual property prices were mostly aligned with equilibrium prices, before 2003 (Chart 22). After 2003, actual prices rose rapidly and the deviation from equilibrium prices has been getting larger. Actual residential property prices have risen by over 78% since 2003. However, propelled by high income growth and limited supply of housing stocks, our model estimates suggest that equilibrium prices have also been rising quickly. Over the same period, they have increased by around 43%. Our estimates suggest at least a 31% overvaluation relative to equilibrium in Shanghai's housing prices on average at the end of 2009.

In **Shenzhen**, our estimates show that, in contrast to Beijing and Shanghai, until 2007 actual residential property prices were below estimated equilibrium prices (Chart 23). However, since 2007 actual prices have risen above the estimated equilibrium. During the global financial crisis, both actual and equilibrium prices fell sharply, by 14.9% and 8.7% respectively from 2008Q1 to 2009Q1. However, both prices bounced back quickly in 2009. Actual prices have reached pre-crisis levels, while the equilibrium prices still fell short by 10.7% of the pre-crisis level. The deviation between these prices has been widening, to an estimated 23% at the end of 2009. Fast growth in real income and population density pushed up equilibrium prices sharply during 2000-07, by an estimated 40%. However, equilibrium prices fell in 2008 due to sluggish income growth. Prior to 2008, real income grew 6% per year on average, while average growth since then has been -6.5%.

Guangzhou's property price developments are the outlier in our sample (Chart 24). Actual and equilibrium property prices were fairly well-aligned during 2002–2007. From 2008, however, actual prices fell *below* equilibrium, mainly due to the impact of the global financial crisis. However, actual prices rebounded back quickly in the second half of 2009 and the negative deviation had disappeared by the end of 2009. The actual and equilibrium property prices rose by 20% during 2002 – 2007, largely supported by high real income growth while the growth in population and housing stocks were quite stable. There is little overvaluation in Guangzhou over the decade. This may be attributed to the fact that Guangzhou's real estate market is relatively more mature than those in other cities.

In **Chongqing**, similar to our estimates for Beijing and Shanghai, our model suggest that actual property prices have been higher than the equilibrium prices since 2004 (Chart 25). Our model estimates the extent of overvaluation as of end-2009 at about 20%. This is despite a rapid rise in estimated equilibrium prices of 50% from 1999 to 2008, mainly due to the rapid growth of real income during this period. From 2008 to present, real income growth has been stagnant due to the impact of the global financial crisis, and equilibrium prices have not risen significantly.

Tianjin's actual property prices have risen by around 70% over the last 10 years (Chart 26). However, our model estimates suggest that equilibrium prices have increased by only about 29% over the same period, led by higher construction costs, steady growth in per capita real income and limited growth in urban population. As a result, Tianjin's overvaluation is estimated at at least 28% as of the end of 2009.

Table 4

Housing Fundamentals and Price Levels by City

	Average growth, 1999Q1-2010Q1					Estimated Over-valuation (2010Q1)
%	Real income	Construction costs	Population density	Actual prices	Equil. prices	
Beijing	11.0	0.4	3.0	6.2	2.8	+26.9
Shanghai	10.1	0.3	2.6	10.7	5.8	+30.6
Shenzhen	3.8	0.6	9.8	5.4	2.6	+22.6
Guangzhou	9.3	1.2	2.8	3.3	3.4	0.0
Chongqing	11.4	1.4	-0.5	8.5	5.4	+20.1
Tianjin	11.7	2.1	1.7	6.9	3.2	+28.5
Average	9.6	1.0	3.3	6.8	3.9	+21.5

Source: BBVA Research

From 1999 to 2009, actual prices increased by about 6.8% on average per year in these six cities; on the other hand, the equilibrium prices increased by 3.9% on average (Table 4). The rise in equilibrium prices in these six cities have been supported by rapid increases in real income (9.6% per year on average), population growth (3.3% per year on average), and rising construction costs (1% per year on average).

In conclusion, it appears that most regional markets, with the exception of Guangzhou, are experiencing a degree of overvaluation, and that some near-term correction is likely. We emphasize that these estimates are suggestive only, given limitations to the model. Overvaluation of property prices in these cities can be eliminated gradually as equilibrium prices catch up rapidly, making a hard landing scenario unlikely.

5. Medium-term Outlook

The outlook for China's real estate sector over the medium term is for continued strong growth. We would expect the trends of real income growth, urbanization, and construction to continue. If so, equilibrium prices should continue to rise steadily with strong demand side support.

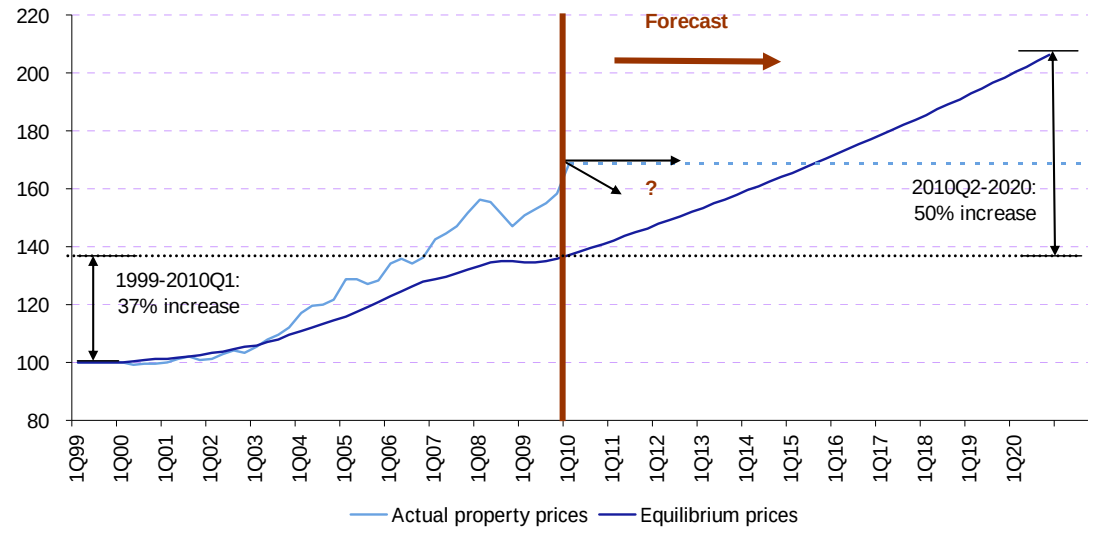
Using our model to project medium-term equilibrium housing values…

We can forecast the evolution of equilibrium housing values over the medium term (Chart 27). Once again, our estimates are suggestive given the model's limitations and the usual uncertainties surrounding medium-term projections. Our baseline projection through 2020 assumes real income growth of 10% per year, urbanization (measured as the growth in urban population) of 2% per year, and increase in housing supply of 7% per year. These assumptions are open to discussion, but appear reasonable in light of recent trends and estimates of China's medium-term growth prospects, investment rates, and demographics (see World Bank, June 2010).

Our estimates suggest an increase in equilibrium housing values of 50% over the coming decade, equivalent to an increase of 22% from current (actual) housing prices. The results suggest that either current prices will adjust downward toward equilibrium levels in the near term, or else the pace of increases will moderate so that current and equilibrium prices converge over the coming few years.

Changes in the assumptions above, of course, would affect our estimates. In particular, additional increases in assumed income growth or urbanization rates would result in higher equilibrium prices all else equal. On the other hand, an increase in the growth of housing stocks would result in lower equilibrium prices. Our model results are most sensitive to changes in assumed income growth, which have the highest explanatory power. In fact, recent news pointing to rising wages could well result in income growth higher than potential GDP growth (8-9% by our estimates) over the medium term.

Chart 27
Actual and Equilibrium Housing Prices

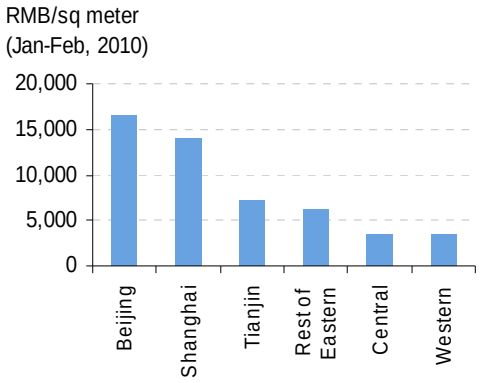


Source: CEIC and BBVA Research
Note: Average residential housing prices in China's 6 largest cities.

A shift to smaller cities is possible…

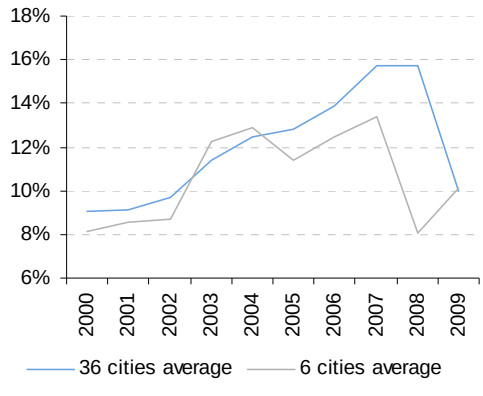
Housing prices in first tier cities are likely to remain high. Along with the rapid growth of household income, the market may gradually shift its focus from first to second or even third tier cities, all the more so given the apparent overvaluation in first tier cities. Property markets in other smaller second and third tier cities have so far not been exposed significantly to the problems of over-valuation (Chart 28). However, over the medium term there is a high likelihood for them to face the same challenges, which should be monitored closely. This is all the more likely given that income growth rates in China's second-tier cities show signs of outpacing income growth in the major first-tier cities (Chart 29).

Chart 28
Residential housing prices



Source: NBS, CITIC Bank, and BBVA Research.
Note: Data are available only for provinces.

Chart 29
Income per Capita growth in the 6 major first-tier cities versus the second-tie



Source: NBS, and BBVA Research

Medium-term policy challenges will persist….

Over the medium term the government will therefore continue to face challenges in seeking to smooth fluctuations in the property sector. Areas of focus, in our view, should be on implementing sound financial incentives and tax policies, including the introduction of a property sales tax, as now under discussion. In addition, local government fiscal reform would help to remove incentives of local officials to see rapid property price increases in support of over-inflated collateral used to borrow through special purpose vehicles in order to finance local government projects. And most importantly, efforts are needed to ensure adequate investment in low-cost affordable housing (see Section 3, Box 2).

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Appendix

Description of empirical models for estimating equilibrium prices

To estimate the equilibrium property prices, we use a demand-supply framework of fundamental property prices.[8] Under this framework, if the housing market adjusted to shocks instantaneously, then the model could be closed at the equilibrium:

$$p_t^{d*} = p_t^{s*} = p_t^* \quad \text{(A2.1)}$$

In the long-run demand equation, the determinants include housing stocks (s), per capita household income (y), real user cost of residential capital (measured in real interest rate; rr) and population density (dens). To obtain the long-run demand price pd*, we use an inverted housing demand function as follows:

$$p_t^{d*} = \alpha_1 s_t + \alpha_2 y_t + \alpha_3 rr_t + \alpha_4 dens_t \quad \text{(A2.2)}$$

The coefficients of income and population density should be positive (α_2, α_4>0), while housing stock and user cost are expected to be negative (α_1, α_3<0).

On the supply side, it is assumed that market entry and exit ensure that property developers make zero profits in the long run. Therefore, given the construction cost (c), the long-run supply price, ps*, induces a sufficiently high investment rate to cover depreciation and expected housing stock growth. This relationship can be expressed as follows.

$$p_t^{s*} = \alpha_5 \left(i/s\right)_t + \alpha_6 c_t \quad \text{(A2.3)}$$

where i/s is the investment rate; i, the real residential investment, is proxied by fixed asset investment (FAI) for real estate adjusting by FAI deflator and c is the real construction cost. Since higher prices encourage investment, the coefficient of the investment rate is expected to be positive (α_5>0). Property prices are expected to respond to construction cost positively (α_6>0).

After confirming the existence of long-run relationship by applying co-integration tests, we estimate the short-run price dynamics by using an error-correction mechanism.

The short-run demand equation is as follows:

$$\Delta p_t = \lambda_d \left(p_{t-1} - p_{t-1}^{d*} \right) + \beta_0 + \beta_1 \sum_{i=0}^{4} \Delta y_{t-i} + \beta_2 \sum_{i=0}^{4} \Delta w_{t-i} + \beta_3 \sum_{i=0}^{4} \Delta rent_{t-i} + \beta_4 \sum_{i=0}^{4} \Delta dens_{t-i} + \beta_5 \sum_{i=1}^{4} \Delta p_{t-i} \quad \text{(A2.4)}$$

where w is the real household wealth proxied by Shanghai Stock Exchange Composite Index deflated by CPI and rent is the real rental index deflated by CPI.

The short-run supply equation is as follows:

$$\Delta\left(i/s\right)_t = \lambda_s \left(p_{t-1} - p_{t-1}^{s*} \right) + \theta_0 + \theta_1 \sum_{i=0}^{4} \Delta p_{t-i} + \theta_2 \sum_{i=0}^{4} ygap_{t-i} + \theta_3 \sum_{i=0}^{4} \Delta q_{t-i} + \theta_4 \sum_{i=1}^{4} \Delta s_{t-i} \quad \text{(A2.5)}$$

where ygap is the output gap; and q is the new floor space completions of residential buildings

The deviations of the observed housing prices p from pd* = ps* will give us an indication as how much the actual price are overvalue or undervalued relative to the equilibrium long-term price.

[8] See McCarthy and Peach (2004), "Are home prices the next 'bubble'?" *Economic Policy Review*, Federal Reserve Bank of New York. In addition see Leung, Chow, and Han (2008), "Long-term and short-term determinants of property prices in Hong Kong, " Hong Kong Monetary Authority, for an application of the similar approach that applies to the Hong Kong property market.

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