BBVA | RESEARCH

China Real Estate Outlook

2014
Economic Analysis

- **After rapid increases in 2013, property prices are cooling now** on tighter financial conditions and market jitters over slowing GDP growth and financial fragilities. This moderating trend should help to curtail price misalignments, which we estimate to have widened in 2013.
- **We find a widening of housing price misalignments although the overvaluation remains modest (between 5-10%)** based on our in house model of equilibrium prices for real state in different Chinese cities.
- **Nevertheless, we expect prices to continue to increase in the coming year, but at a more moderate pace,** as the authorities ease policies to sustain growth momentum. Risks of a collapse in the housing market are low given the likelihood that macro policies will be geared towards sustaining growth at above 7%. Nonetheless, the reliance on shadow bank financing may bring further downside risks as the authorities strive to curb shadow banking.
- **Existing property tightening measures are likely to remain in place.** The focus now has shifted to supply side measures to curtail rapid price gains and ensure affordability. A national property tax remains on the medium-term agenda.
- **Over the medium term, we maintain our view of a robust outlook for the housing market given projected income growth and urbanization which should support demand.**

Index

Closing date: 22 April 2014

1. Introduction and Summary[1]

China's real estate sector remains the focus of intense interest given its large contribution to investment and growth (Charts 1.1 and 1.2), its importance for investors as a key asset class and its huge social implications. Indeed, the sector has come under increasing scrutiny over the past few years due to a sharp run-up in prices, increasing dependence on shadow bank financing and excess supply of units in some areas. More recently, there are signs that prices are beginning to cool under the weight of tighter credit conditions and slowing growth momentum.

In 2013 both sales prices and volumes rose rapidly which helped to sustain overall GDP growth at a healthy of 7.7%. At the same, however, the run-up in prices led to rising financial risks associated with a potential housing bubble, loan concentration, and dependence on shadow bank financing. From a social perspective, housing affordability became further stretched, especially in Tier 1 cities.

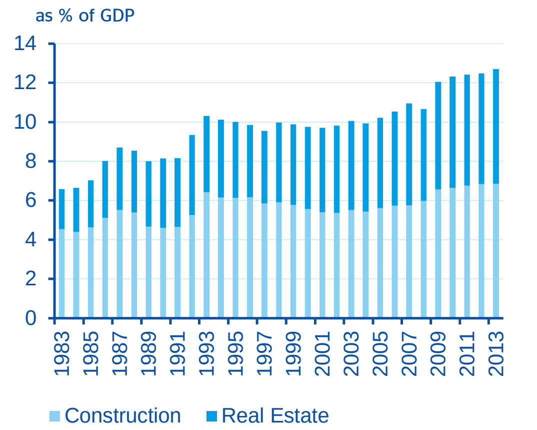
Curtailing further rapid rises in housing prices is high on the government's agenda. In this regard, supply-side measures have been announced in the October's Politburo meeting presided by President Xi Jinping, where he vowed to boost land supply and improve the commercial functioning of the residential housing market. The supply-side measures are thought to be more effective to contain housing prices.

Market trends appear to have cooled so far in 2014, as sentiment has dipped on mixed economic indicators, and concerns have increased about financial fragilities. At present, according to our in house model of equilibrium prices for real state in different Chinese cities, we find a growing price misalignment although, at a national level, the overvaluation remains modest (between 5-10%). Nevertheless, we expect prices to continue to increase in the coming year, but at a more moderate pace, as the authorities ease policies to sustain growth momentum. Over the medium term, we maintain our view of a robust outlook for the housing market given projected income growth and urbanization which should support demand.

One new development in the sector is the divergence trend across local markets. Housing prices in Tier 1 cities are supported by strong demand and limited supply. In contrast, prices in some smaller cities are dampened by weak demand and over-supply. In view of the divergence, the government has vowed to adopt differential housing policies across regions.

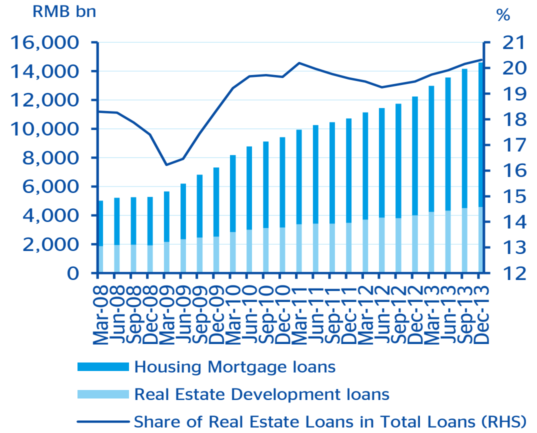
The remainder of the report is organized as follows. Section 2 updates recent developments and the outlook for the housing market; Section 3 updates our estimates of the degree of price misalignments relative to underlying fundamentals for key Chinese cities. Finally, Section 4 extends the model over a medium-term horizon.

Chart 1.1
Real estate sector's importance in the economy continues to rise



Source: NBS, CEIC and BBVA Research

Chart 1.2
Real estate loans account for one-fifth of bank credit



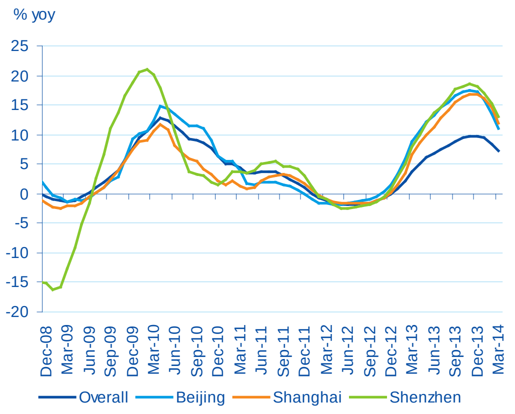
Source: NBS, CEIC and BBVA Research

1: The significant contribution of Stephen Schwartz, who was part of the BBVA Research team in Hong Kong during the preparation of much of this report, is gratefully acknowledged.

2. Recent Developments and Outlook for the Housing Market

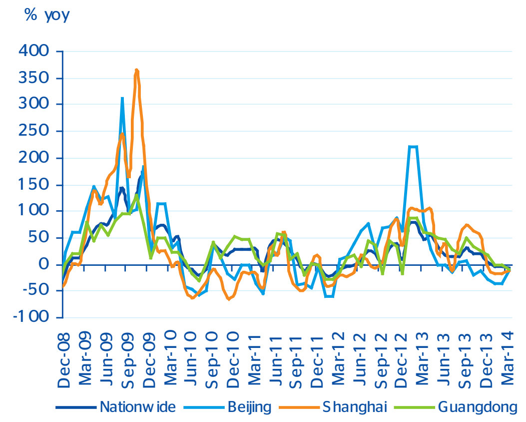
Despite official efforts to maintain housing affordability, the past year has seen a rapid rise in residential housing prices, especially in larger, Tier 1 cities. However, housing price increases appear to be moderating more recently on slowing GDP growth momentum and tighter housing financing. As such, nation-wide housing price growth appears to have peaked in Q4 2013 (Chart 2.1).[2] (See the appendix for a description of data sources). At the same time, the volume of housing transactions is also decelerating (Chart 2.2).

Chart 2.1
Housing price growth moderates recently



Source: NBS, CEIC and BBVA Research

Chart 2.2
Housing transactions decline as well



Source: NBS, CEIC and BBVA Research

Recent policy developments and supply-side measures

Concerned about deteriorating affordability (Chart 2.3), the central government introduced new guidelines to curtail housing prices in early 2013. Local governments followed with their own measures, including establishing growth targets for housing prices and capital gains taxes (see Appendix). As in the past, these policies tended to focus on the demand side.

Against this backdrop, China's new leadership has embraced supply-side measures to contain housing prices. In October 2013, the Politburo meeting presided by President Xi Jinping placed emphasis on the housing sector and stressed to boost land supply. The meeting also vowed to continue implementing the construction of 36 million public housing units through 2015, as outlined in the 12th Five Year Plan (which would bring the public housing stock to 20% of the total). Besides the supply-side measures, government officials (Finance Minister Lou Jiwei) have indicated they will accelerate legislation and implementation of a property tax, which will help to facilitate the healthy development of China's local government financing and hence improve land supply for the real estate sector.

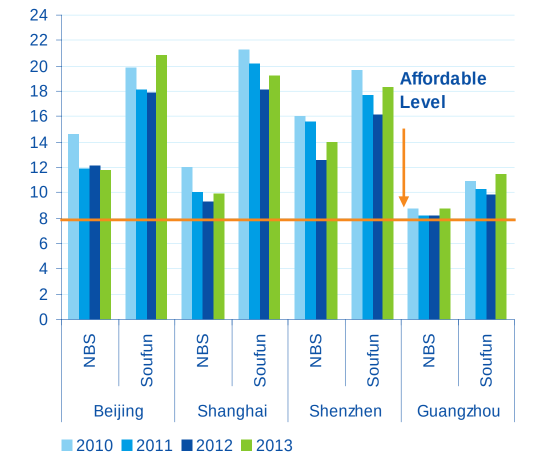
Price increases show divergence, led by Tier 1 cities

In Chart 2.4, we show that Tier 1 cities have led the price increases. In particular, Tier 1 cities with a population exceeding 10 million saw an increase of 10-15% y/y in March, compared to an average of 5-10% y/y for other cities. Meanwhile, housing inventories have been accumulating over the past years (Chart 2.5). While lacking city-wise data, it's believed that those unsold housing units are mainly concentrated in smaller cities, which have relatively soft demand but have produced relatively more housing supply over the past years. Looking ahead, a further divergence in local housing markets is likely to continue,

2: According to our estimates based on the official NBS data covering 70 major cities. Beginning in January 2011, the NBS discontinued publishing an aggregate housing price index, and provided instead individual city-level data for new and existing home sales, respectively. We aggregated these data into a housing price index that maintains the continuity with the pre-2011 data series.

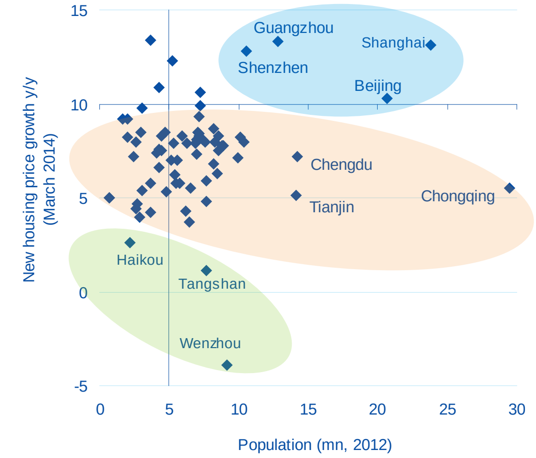
The divergence in local markets may have important implications for housing policies. While the government should curtail rapid housing price growth especially in Tier 1 cities, it will also want to avoid further deterioration or a possible collapse in some local markets, like in Wenzhou, Tangshan, and Haikou. Indeed, recently the government has vowed to adopt differential housing policies across regions.

Chart 2.3
Affordability ratios worsened in 2013*



* Residential housing price (30 sq meter pc) / Income pc.
Source: NBS, Wind and BBVA Research

Chart 2.4
Tier 1 cities lead housing price growth



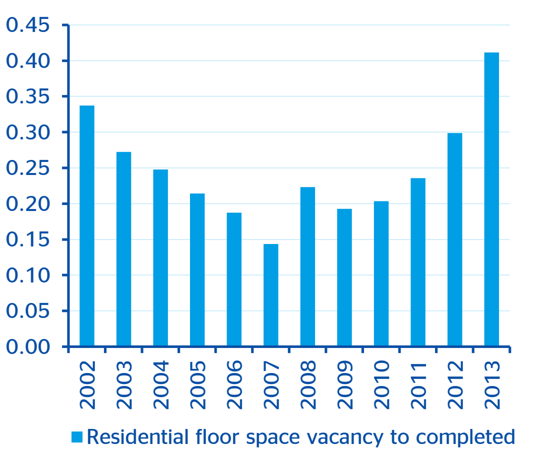
Source: NBS, CEIC and BBVA Research

The real estate sector cools in 2014

Market sentiment toward China has weakened in early 2014 (Chart 2.6) on concerns about the sustainability of growth momentum and rising financial fragilities, including risks of housing bubbles. While a majority of cities continue to report positive price gains as measures on a year-over-year basis, an increasing number of cities are reporting monthly price declines (Chart 2.7).

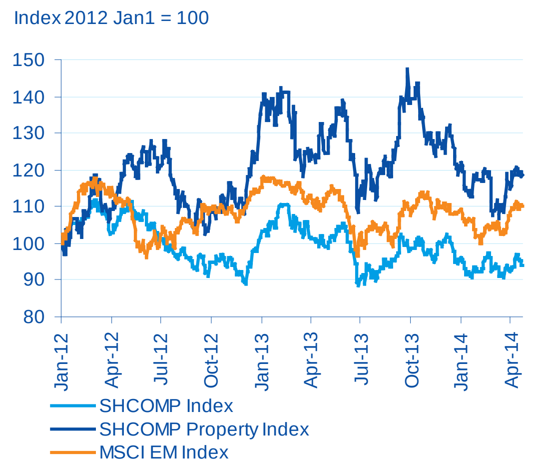
Real estate investment also weakens more recently (Charts 2.8), as do land sales and floor space starts (Charts 2.9 and 2.10).

Chart 2.5
Housing inventories have increased significantly…



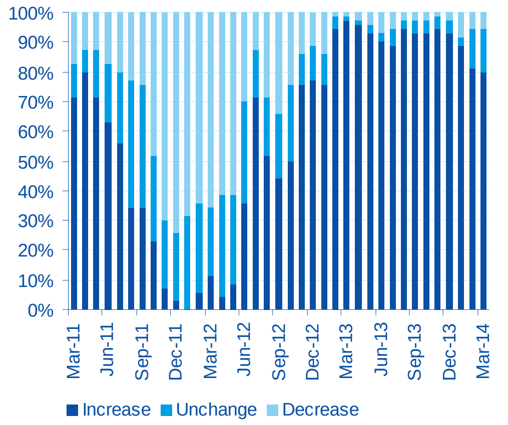
Source: NBS, Wind and BBVA Research

Chart 2.6
Property shares remain volatile



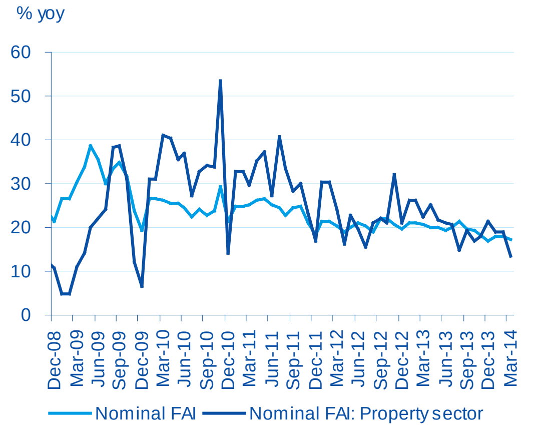
Source: Bloomberg and BBVA Research

Chart 2.7
Fewer cities report price increases



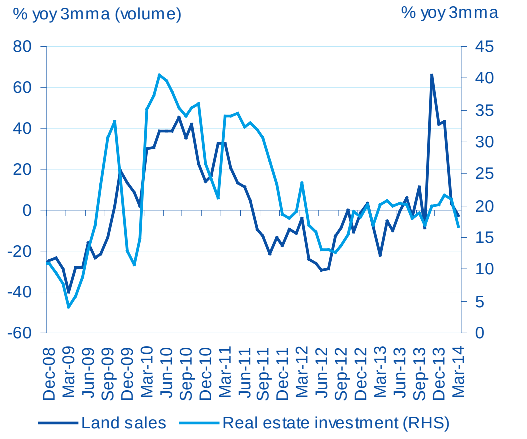
Source: NBS and BBVA Research

Chart 2.8
Real estate investment is weakening



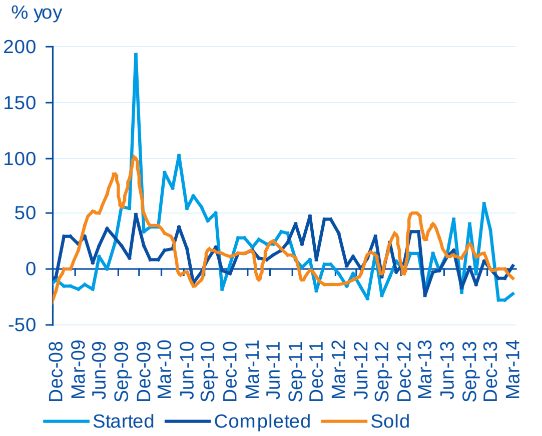
Source: NBS, CEIC and BBVA Research

Chart 2.9
Land sales are declining after a surge in late 2013



Source: NBS, CEIC and BBVA Research

Chart 2.10
Floor space starts and land sales decline

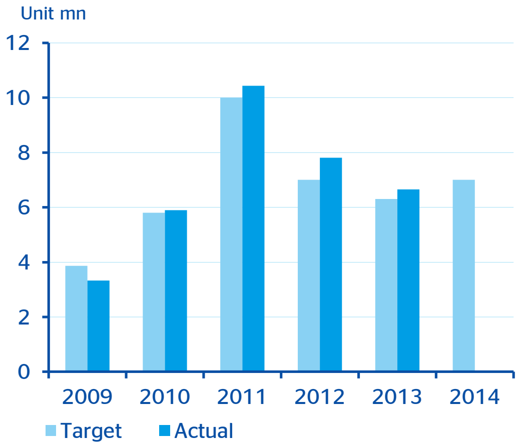


Source: NBS, CEIC and BBVA Research

Social housing construction is on track

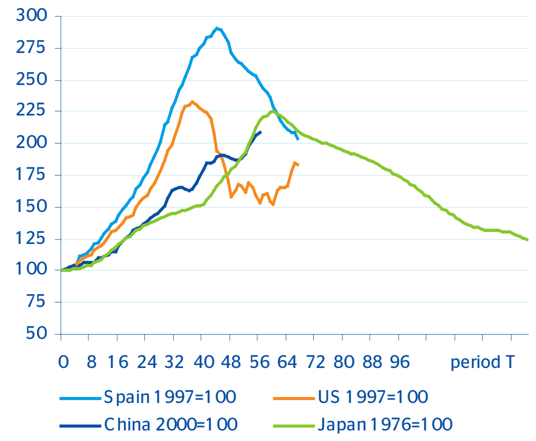
The government has pushed ahead with its plans to construct social housing, in line with the annual target of 6 million housing starts (Chart 2.11), and the objective of the 12th Five Year Plan to construct 36 million units by 2015. The full year target in 2013 for affordable housing starts (6.3 million units) was well achieved, according to the Minister of the Ministry of Housing and Urban-Rural Development (MOHURD). Around two-thirds of the total 36 million units target for the "12th Five Year Plan" period has already been met.

Chart 2.11
China aims for target of 7 million units of affordable housing starts in 2014



Source: Wind and BBVA Research

Chart 2.12
International comparison of housing price bubbles



Source: NBS, Haver and BBVA Research

Housing price increases expected to moderate in 2014

We expect housing prices to continue to rise in the coming year, but a slower pace than in the past year on adequate supply and soft demand. On the supply front, real estate investment and housing supply in 2014 is likely to remain strong, after robust land purchases for real estate development in the second half year of 2013; on the demand front, slowing economic growth and weaker investor sentiment arising from rising financial risks may weigh on demand. A moderate housing price growth will help to mitigate risks of housing bubbles, which have been quite worrisome from international experience (Chart 2.12).

We do not anticipate a collapse in the national real estate market in 2014, as overall demand should be supported by sustained, albeit slowing, GDP growth in 2014 of around 7.5%, and demand should remain robust over the medium term due to expected income growth and urbanization (see Section 4). We, nevertheless, also expect a further divergence in local housing markets as smaller cities such as Wenzhou remain more relatively vulnerable, due to weak local economy, high local government debt, and the over-supply issue.

Finally, on the financing front, the reliance on shadow banking financing by some real estate developers, as widely reported by the media, may bring further downside risks to the sector as the authorities strive to curtail shadow banking lending. Under this circumstance, some local real estate developers, especially those in smaller cities with sluggish demand, may be difficult to access financing and could not pay back their debts in time. The market's sentiment would be hit hardly by any events of insolvency or default by the developers; nonetheless, the risks should be contained as the authorities will keep prudent and prevent any nation-wide crisis.

3. A widening of housing price misalignments in major cities

As in previous Real Estate Outlook reports, we seek to assess the degree of price residential housing price misalignments relative to fundamentals. To that end, we update our model of equilibrium housing prices with data through end-2013. Given the sharp run-up in housing prices over the past year (notwithstanding the more recent moderation), we find that that gap between national housing prices and equilibrium levels has increased, although the degree of overvaluation remains moderate at just 5-10%. That said, pockets of larger overvaluation are present in Tier 1 cities and, with prices falling in a number of smaller cities such as Wenzhou.

A model of equilibrium housing prices

Our empirical model of housing prices estimates the degree of misalignment between actual (nominal) and equilibrium housing prices based on a framework of supply and demand. The model incorporates panel data going back to 1995 and covers 35 major cities (see the Appendix for details). The underlying factors in the model include current income growth, population density, and construction costs. These factors determine the equilibrium prices by affecting housing demand and supply. In general, higher income growth and higher population density will increase housing demand and result in higher equilibrium prices, all else equal. On the other hand, higher construction costs and higher interest rates on real estate loans will reduce housing supply, also driving up equilibrium prices.

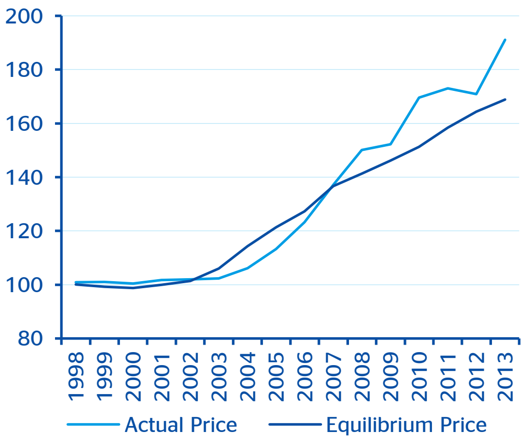
As with any modelling exercise, there are limitations. And with uncertain data quality, the results are intended only to be suggestive, rather than as a prediction of near-term price levels.

Price misalignments have widened in Tier 1 cities

After moderating for two consecutive years in 2011 and 2012, the rapid rise in housing price over the past year has led to a widening of the degree of housing price overvaluation relative to fundamentals. In particular, we estimate that the degree of misalignment widened to about 7% in 2013 from near-alignment of just 1-2% in 2012 and similar to the magnitude of misalignment estimated in 2011. The widening of the degree of misalignment is due to the rapid housing price growth of 6.5% in 2013, outpacing the growth of 2.4% in underlying equilibrium prices.

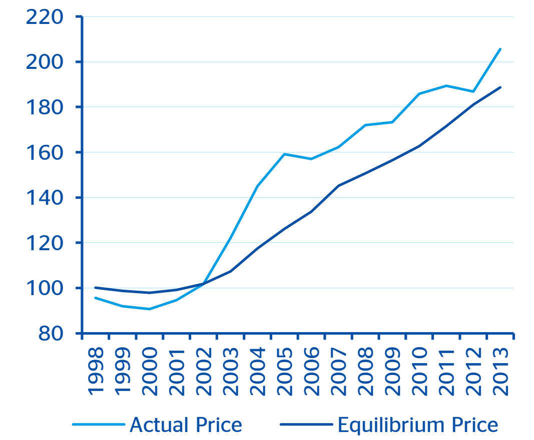
In 2013, housing prices accelerated in all six of the largest metropolitan areas (Beijing, Shanghai, Shenzhen, Guangzhou, Chongqing, and Tianjin) (see Charts 3.1-3.6 and Table 3.1). For Beijing, the degree of price overvaluation widened to 13% (from 4% estimated in 2012), while for Shanghai and Shenzhen the overvaluation gap widened to around 9%. In Chongqing and Tianjin, where the observed property prices have not strayed far from the estimated equilibrium prices for most of the sample period, the misalignments have risen slightly to 3-4%. For Guangzhou, which had been an outlier in our estimates, showing an undervalued property market in 2012, rapid price increases mean that an overvaluation now exists, of around 3% (from an undervaluation of 6.4% in 2012).

Chart 3.1
Beijing



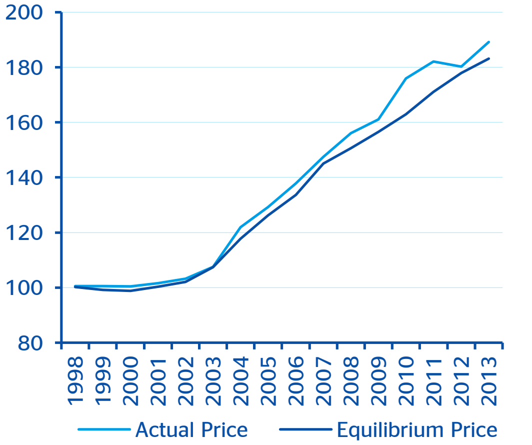
Source: NBS, CEIC and BBVA Research

Chart 3.2
Shanghai



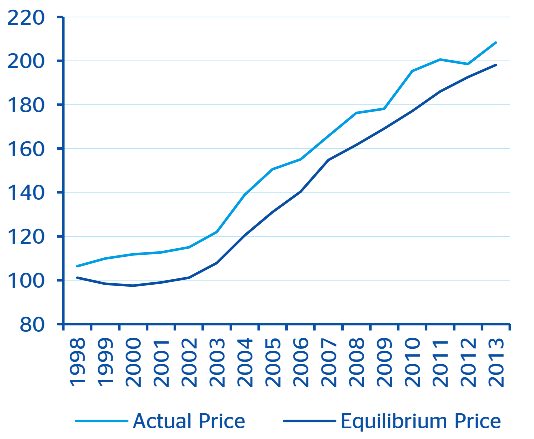
Source: NBS, CEIC and BBVA Research

Chart 3.3
Tianjin



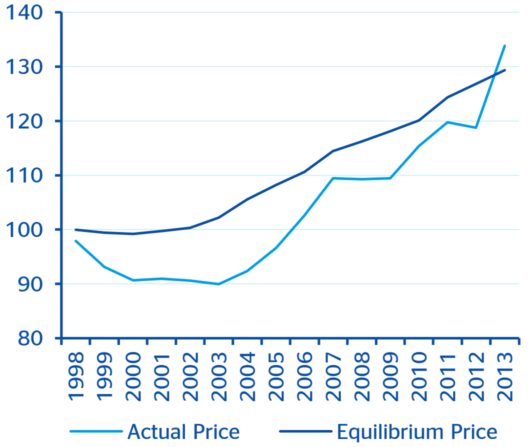
Source: NBS, CEIC and BBVA Research

Chart 3.4
Chongqing



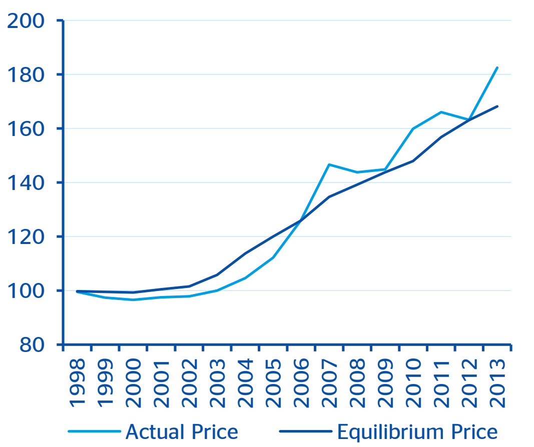
Source: NBS, CEIC and BBVA Research

Chart 3.5
Guangzhou



Source: NBS, CEIC and BBVA Research

Chart 3.6
Shenzhen



Source: NBS, CEIC and BBVA Research

In conclusion, the relatively higher overvaluation at present suggests that, at an aggregate level, housing price misalignments may have worsened, adding to the weight of financial fragilities. Nevertheless, we emphasize that these estimates are subject to limitations to the model.

Table 3.1
Housing Fundamentals and Price Levels by City

%	Average growth, 2000-2013					Estimated Over-valuation (2013)
	Real income	Construction costs	Population density	Actual prices	Equil.prices	
Beijing	9.5	0.4	3.4	5.2	4.2	+13.2
Shanghai	9.1	0.3	3.2	6.7	5.2	+8.9
Shenzhen	4.3	0.6	3.5	5.2	4.2	+8.5
Guangzhou	7.5	1.2	4.4	3.1	2.1	+3.4
Chongqing	9.5	1.4	0.3	5.0	5.6	+5.1
Tianjin	9.7	2.1	2.9	5.0	4.9	+3.2
Average	**8.3**	**1.0**	**3.0**	**5.0**	**4.4**	**+7.1**

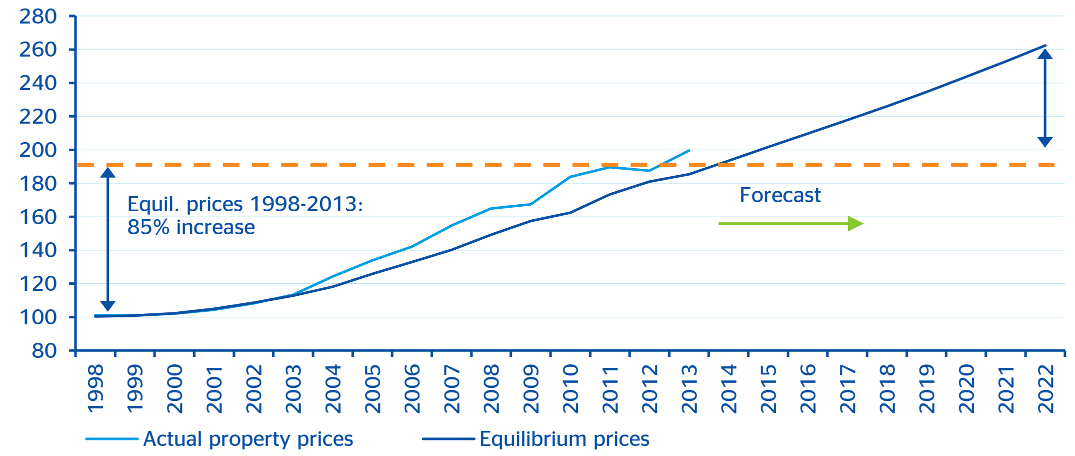
Source: BBVA Research

4. Medium-term Outlook

Our medium-term outlook for China's real estate sector remains relatively upbeat on expectations of continued strong underlying fundamentals. This is based on our projection of continued trends in real income growth, urbanization, and construction spending.

We update our supply and demand framework to project nominal equilibrium housing values over the medium term (Chart 4.1). As in our previous Real State Outlooks, our baseline projection, through 2022, assumes real income growth of 8% per year, urbanization (measured as the growth in urban population) of 2% per year, and increase in housing supply of 5% per year. The projections also assume an average future inflation rate of 3-4%. The resulting projections are for an increase in nominal housing prices of 40% through 2022, equivalent to an increase of 10% in real terms. However, these results should be taken with caution, given the model's remaining limitations and the usual uncertainties surrounding projections of this nature.

Chart 4.1
Actual and equilibrium housing prices



Note: Average residential housing prices in China's 35 big and middle-size cities.
Source: NBS, CEIC and BBVA Research

Looking ahead, we expect the government to introduce supply-side policies to contain excessive growth in housing prices. However, measures to foster a healthier real estate sector, over and above price movements, seems also warranted. Key ones are urbanization policies and local government fiscal reforms. On the latter, it seems important to remove the incentives of local officials to use land sales as a main source of revenue.

5. References

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6. Appendix

Policy measures and initiatives in the property market

Table 6.1
Chronology of Real Estate Policy Measures and Stances, April 2010 – March 2014

Date	Policy Description
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 contract 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	MHURD, PBOC & BOC jointly issue 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.
October 2010	Mortgage loans for 3rd or more homes are banned nationwide; the minimum down payment ratio is raised to 50% and mortgage rates are set at 1.1 times the PBOC's benchmark lending rate; the minimum down payment ratio for first home purchase is set at 30%; loans to developers with a record of regulation violations are suspended.
October 2010	Adjustment of the deed tax rates and preferential personal income tax rates: 1) For purchases of single and ordinary homes, the deed tax rate is halved, and for the purchases of such homes smaller than 90 sq.m., the rate is reduced to 1.0%. 2) For those who sell their self-use homes and then purchase a new home within one year, the personal income tax is no longer exempted.
October 2010	The CBRC reduces the discount that banks are allowed to apply on mortgages for first-home purchases. The new discount is set at 15%, from 30% previously. (The 30% mortgage rate discount for first home purchases was launched in 2008 as part of China's stimulus package.)
November 2010	Restrictions announced on provident fund loans, with the interest rate for second houses raised by 10%. Second home purchases by provident fund loans apply only to ordinary housing to improve living conditions; first installment shall be no less than 50%, and interest rates cannot be lower than 1.1 times of the rate set for the first housing provident fund loan.
November 2010	Ministry of Housing and Urban-Rural Development and SAFE jointly announce restrictions on home purchases by non-residents. According to the measure, a foreigner can at most buy one house for personal residence under the condition that he or she can provide the proof of working in China for more than a year. For residents of Hong Kong, Macao and overseas Chinese, the measure still applies with minor relaxations.
January 2011	The State Council unveils 8 new measures to toughen curbs on the property market: 1) Require local governments to set housing price targets in line with local income levels for 2011; 2) Accelerate the construction of social security residential properties; 3) Business tax for housing sales within 5 years of purchase must be levied on total sales value; 4) The down payment ratio for second-home purchases must not be less than 60%, up from 50%, with interest rate at least 1.1 times of the benchmark rate; 5) Strengthen the management of land supply for housing; 6) Purchase restrictions imposed in all large- & medium-sized cities. Families already owning a property are restricted to buy only one more, while those already owning 2 or more properties are prohibited to purchase additional properties; 7) Strict implementation & accountability for local governments over the housing price control targets; 8) Improvements in guidance for media's housing market coverage.
January 2011	Shanghai and Chongqing announce the long-expected property tax on trial basis, to be imposed on new purchases.
January 2011	The State Council requires local governments to publish and meet their annual housing price targets (set in line with the income growth of their regions).
March 2011	The National People's Congress (NPC) passed the 12th five-year plan of 2011-2015, in which the central government targets to build up 36 million units of public housing in next five years (10 million units in 2011).

Continued on next page

Table 6.1
Chronology of Real Estate Policy Measures and Stances, April 2010 - March 2014 (Cont.)

Date	Policy Description
May 2011	NDRC begins to impose a "one house one price" policy, under which developers are required to enhance public information disclosure about the offering price and available supply volume when selling residential properties.
June 2011	NDRC permits the local government financing vehicles (LGFVs) to issue bonds to finance the public housing program.
July 2011	The State Council unveils 5 new measures: 1) Local governments should strictly implement the tightening policy on the property market. 2) Local governments should make efforts to meet the target and start 10 million units of social housing by the end of November. 3) Further curb speculative investment and expand home purchases restrictions to second and third tier cities where housing prices have observed excessive increases. 4) Implement the residential land supply as planed this year. 5) Prevent excessive increases in housing rents.
August 2011	The Ministry of Housing and Urban-Rural Development outlined five standards on decisions for implementing home purchases limits.
October 2011	The central government suspends Foshan city's plans to ease property purchases limits.
December 2011	During the Central Economic Work Conference, the government introduces a commitment of "bring housing prices back to reasonable levels" for the first time in official announcements
January 2012	Premier Wen reiterated the government will continue the curbs on property market speculations and bring housing prices back to a reasonable level in the State Council meeting.
February 2012	The central government called off policy fine-tuning in two cities (Contract tax subsidy in Wuhu and housing purchase restrictions easing in Shanghai).
March 2012	Premier Wen mentioned that "Home prices are still far from returning to reasonable levels" and insisted the strict regulations of real estate sector will continue during the 11th National People's Congress.
April 2012	Premier Wen said the government will further consolidate the effect of property market curbs and keep the restrictions in the State Council meeting.
May 2012	During the six provinces economic situation informal discussion held in Hubei, Premier Wen said to stabilize the property tightening measures and strictly implement the differentiated policies on mortgage, tax and purchase restrictions. "Put stabilizing economic growth in a more important position."
June 2012	Different central government agencies (MOHURD, NDRC, PBoC and CBRC etc) separately clarified rumors about easing curbs on the property market and reaffirmed the tightening measures will continue.
July 2012	During Premier Wen's field investigation in Jiangsu province, he vowed to curb real estate speculations and considers it as a long term task.
July 2012	The State Council sent eight inspection teams to investigate the implementations of ongoing property tightening measures with differential credit polices by local governments in 16 cities and provinces since July.
July 2012	In the Central Political Bureau meeting, the government has reaffirmed to prioritize stable economic growth and the ongoing measures to curb speculative demands will continue.
August 2012	During Premier Wen's field investigation for social housing projects in Tianjin, he reiterated the government should continue to resolutely curb real estate speculations which are still in the "critical period".
November 2012	The Housing and Urban-Rural Development Minister Jiang Weixin said that the government will continue the curbs on the property sector in the near future, during the 18th National Party Congress.
December 2012	In the Central Political Bureau meeting, the central government delivered messages that the property tightening policy will not be relaxed.
December 2012	During the Central Economic Working Conference, the authorities pledged to maintain the continuity and stability of current housing policies, but notably drops a reference from the previous year to, "bring housing prices back to reasonable levels".
February 2013	Premier Wen Jiabao held a cabinet meeting on Feb 20th to unveil 5 measures: 1) Local governments should improve the accountability system for stable housing price and setup growth target for new commodity residential housing prices. 2) Curb speculative demand and implement home purchase restrictions in cities with excessive price growth. 3) Increase commodity housing and land supply. 4) Facilitate construction of social housing project. 5) Enhance the supervision on the property market.
March 2013	The State Council intensified measures to curtail rising property prices on Mar 1, including detailed instructions for local governments to implement strictly an existing 20% capital gains tax on secondary home transactions. Other measures include the implementation of annual price targets, expansion of housing purchase restrictions to all regions, selective increases in down payment requirements and mortgage rates for second unit home purchases. Local governments including major municipalities and others started to launch detailed city-level measures and annual price targets required by the State Council.

Continued on next page

Table 6.1
Chronology of Real Estate Policy Measures and Stances, April 2010 - March 2014 (Cont.)

Date	Policy Description
July 2013	President Xi Jinping held a consultative meeting of the Central Committee of the Communist Party of China (CPC) on the economic strategy for the 2H 2013. Xi reiterated the government will promote stable and healthy development of the property market.
November 2013	In the detailed "blueprint" of the Third Plenum, the central government called for the market to play a "decisive role", focusing more on facilitating urbanization through reforms to the Hukou system and rural land rights and expanding the property tax.
November 2013	It was reported that cities with rapid housing price increase so far this year are under pressures from the Ministry of Housing and Urban-Rural Development (MOHURD). Local governments of major tier 1 cities and some tier 2 cities announced new tightening measures, generally considered to be mild. They include higher down payment of second home purchase and requirements to non-resident buyers.
November 2013	The Ministry of Housing and Urban-Rural Development (MOHURD) issued a statement to strengthen the supervision on the distribution of social housing projects.
December 2013	In the Standing Committee meeting of the Politburo, China pledges better management in the real estate sector.
March 2014	The government pledges to take differentiated policies on different tiers cities. A two-way approach has been introduced, including curbing speculation demand and increasing housing supply in large cities on the one hand, and reducing inventories in those cities with excessive supply on the other hand. The government targets to start construction of 7 million units of social housing in 2014.
March 2014	The China Securities Regulatory Commission has reopened the stock market to listed property developers for refinancing through private placements, which has been halted since the second quarter of 2010.

Source: Media reports, press releases, and Government websites

Table 6.2
Review of local government annual housing price target (2013)

Local government		Policy statement	Price increases (y/y, 2013 Dec)	Price increases (y/y, 2014 Mar)	Additional tightening
Shanghai	Municipality	Strictly implement property measures to maintain stable housing price	21.9%	15.5%	Released
Beijing	Municipality	Maintain stable housing price compared to 2012	20.6%	13.0%	Released
Guangzhou	Sub-provincial city	Housing price increase less than the residents' real disposable income growth	20.4%	13.4%	Released
Shenzhen	Sub-provincial city	Housing price increase less than the residents' real disposable income growth	20.3%	13.0%	Released
Xiamen	Sub-provincial city	Housing price increase less than the residents' real disposable income growth	16.9%	13.7%	Released
Nanjing	Sub-provincial city	Housing price increase less than the residents' real disposable income growth	15.6%	11.3%	Released
Shenyang	Sub-provincial city	Housing price increase less than the residents' real disposable income growth	13.2%	10.0%	Released
Fuzhou	Prefecture-level city	Housing price increase less than the residents' real disposable income growth	13.3%	10.7%	Released
Zhengzhou	Prefecture-level city	Housing price increase no more than the residents' real disposable income growth	12.0%	8.3%	Released
Taiyuan	Prefecture-level city	Housing price increase less than the residents' real disposable income growth	12.1%	11.3%	Released
Changsha	Prefecture-level city	Housing price increase less than the residents' real disposable income growth	12.3%	9.4%	Released
Wuhan	Sub-provincial city	Housing price increase less than the residents' real disposable income growth	10.9%	8.6%	Released
Hangzhou	Sub-provincial city	Housing price increase less than the residents' real disposable income growth	11.5%	8.1%	Released
Xi'an	Sub-provincial city	Housing price increase much less than the residents' real disposable income growth	10.9%	9.2%	Released
Urumqi	Prefecture-level city	Housing price increase less than the residents' real disposable income growth	10.7%	8.0%	Released
Harbin	Sub-provincial city	Housing price increase less than the residents' real disposable income growth	10.7%	7.4%	Released
Nanchang	Prefecture-level city	Housing price increase less than the residents' real disposable income growth	10.4%	7.3%	Released
Qingdao	Sub-provincial city	Housing price increase much less than the residents' real disposable income growth	10.5%	8.2%	
Chengdu	Sub-provincial city	Housing price increase less than the residents' real disposable income growth	9.7%	8.3%	
Hohhot	Prefecture-level city	Housing price increase less than the residents' real disposable income growth	10.6%	8.7%	
Nanning	Prefecture-level city	Housing price increase less than the residents' real disposable income growth	10.3%	8.7%	
Chongqing	Municipality	Housing price in the main district increase less than the residents' real disposable income growth	9.5%	7.3%	
Dalian	Sub-provincial city	Housing price increase less than the residents' real disposable income growth	10.1%	8.3%	
Shijiazhuang	Prefecture-level city	Housing price increase less than the residents' real disposable income growth	10.1%	8.2%	
Xining	Prefecture-level city	Housing price increase less than the residents' real disposable income growth	9.9%	9.2%	
Hefei	Prefecture-level city	Housing price increase no more than the residents' real disposable income growth	10.7%	9.2%	
Jinan	Sub-provincial city	Housing price increase less than the residents' real disposable income growth	9.4%	8.1%	
Yinchuan	Prefecture-level city	Housing price increase less than the residents' real disposable income growth	9.2%	8.8%	
Changchun	Sub-provincial city	Housing price increase less than the residents' real disposable income growth	8.8%	8.3%	
Tianjin	Municipality	Housing price increase less than the residents' real disposable income growth	8.3%	5.7%	
Lanzhou	Prefecture-level city	Housing price increase less than the residents' real disposable income growth	8.0%	5.9%	
Kunming	Prefecture-level city	Housing price increase less than the residents' real disposable income growth	6.9%	6.5%	
Guiyang	Prefecture-level city	Housing price increase less than the residents' real disposable income growth	7.4%	6.0%	
Ningbo	Sub-provincial city	Housing price increase less than the residents' real disposable income growth	7.8%	6.3%	
Haikou	Prefecture-level city	Housing price increase no more than the residents' real disposable income growth	2.4%	2.6%	

Source: NBS, CEIC, media reports and BBVA Research

Housing price data in China

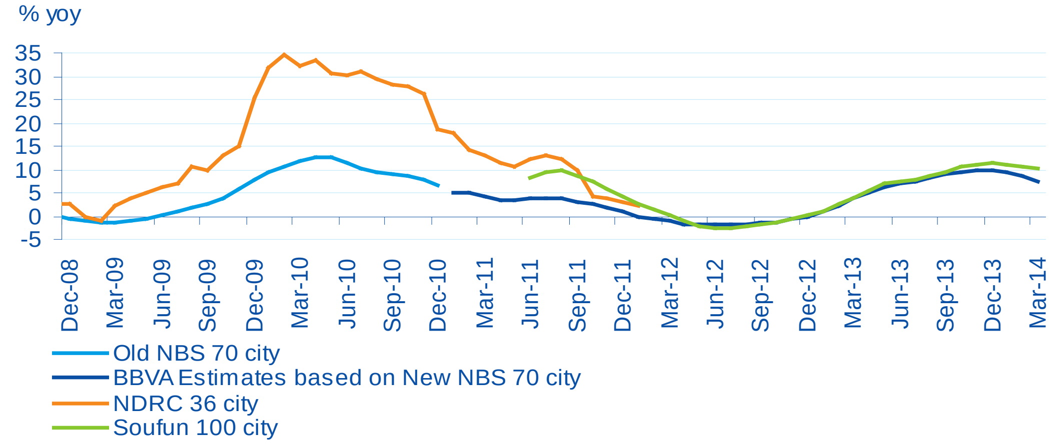
There are three major housing price data in China. The NBS 70 city housing price is the official statistics, the methodology of which has been reformed and improved since Jan 2011. The new series is considered more reliable compared to the previous one ended in 2010. The NDRC 36 city housing price is another official source provided by different government agency. The Soufun 100 city housing price is provided by the China Index Academy, a recognized private property research agency in China. More details about the different housing prices in China are listed below (Table 6.3). Since the NBS no longer provide a nationwide housing price data in the new 70 city series, we estimate the growth changes based on the individual city housing prices (Chart 6.1). Although these housing prices usually have differences in value terms due to the different sample sources and data collection methodology, their general growth trends are similar especially more recently.

Table 6.3
Different housing prices data in China

	Time series	Source	Release date	Sample collection methods
Old NBS 70 city	2005.07 – 2010.12	National Bureau of Statistics	the 10th day of the following month	Data are collected from real estate developers and sellers through sampling survey.
New NBS 70 city	2011.01 – Present	National Bureau of Statistics	the 18th day of the following month	New home sales data are collected based on network transactions records from city-level housing departments.
NDRC 36 city	2007.01 – 2012.01	National Development and Reform Commission		Data of transaction price are collected through sampling survey.
Soufun 100 city	2010.06 - Present	China Index Academy	the 1st working day of the following month	Data are collected from field survey, real estate developers, sellers and agents, government information disclosure.

Source: NBS, Media reports and BBVA Research

Chart 6.1
China housing prices from different sources



Source: CEIC, Wind and BBVA Research

Data and methodology for assessing equilibrium housing prices

Below we summarize data used in this report. All data are expressed as year-on-year changes, and were retrieved from the CEIC database and compiled by BBVA research.

Table 6.4
Summary of Data

Variables	Sample and frequency	Notes	Sources
Aggregate housing price index	Monthly, 2005.7-2013.12	Data after 2011 compiled from disaggregate price index	NBS, CEIC, and BBVA calculation
City housing price index	Quarterly, 1998.1-2013.12, 70 cities.	Data after 2011 compiled from disaggregate price index	NBS, CEIC, and BBVA calculation
M2	Quarterly, 1998.1-2013.12		CEIC
Inflation	Quarterly, 1998.1-2013.12		CEIC
Income per capita	Yearly, 1998-2012		CEIC
Lending rate	Quarterly, 1998.1-2013.12	Five-year lending rate	CEIC
Urbanization	Yearly, 1998-2012	Population/area	CEIC

Source: NBS, CEIC and BBVA Research

In January 2011 the NBS discontinued the publication of an aggregate housing price index at the national and city level. To make the data consistent with historical series, we have reconstructed an aggregate price index for 2011 and the following from city-level new-construction and second-hand price indices (which are still published by NBS). The weights used to construct the aggregate price index are estimated using price data prior to 2010 by regressing aggregate price index on their components.

Description of empirical model for estimating equilibrium prices

To estimate the equilibrium property prices, we use a demand-supply framework of fundamental property prices[3]. Under this framework, if the housing market adjusted to shocks instantaneously, then the model could be closed at the equilibrium:

$$p_{it}^{d*} = p_{it}^{s*} = p_{it}^{*} \qquad \text{(A2.1)}$$

Note that our prices and determinants are at the city-level, with index *i* indicating cities. In the long-run demand equation, the determinants include housing stocks (s), current and expected 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:

$$p_{it}^{d*} = \alpha_1 s_{it} + \alpha_2 y_{it} + \alpha_3 y_{i,t+1} + \alpha_4 y_{i,t+2} + + \alpha_5 rr_t + \alpha_6 dens_{it} + \alpha_t \qquad \text{(A2.2)}$$

The coefficients of income and population density should be positive (α_2, α_3, α_4, α_6>0), while housing stock and user cost are expected to be negative (α_1, α_5<0). Here the time-specific fixed-effect α_t controls for the common impact of macroeconomic fluctuations, such as changing money supply, on the housing prices in different cities.

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.

$$p_{it}^{s*} = \alpha_5 \left(\frac{i}{s}\right)_t + \alpha_6 c_t \qquad \text{(A2.3)}$$

3: 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.

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).

In practice, we combine equations (A2.2) an (A2.3) to estimate its reduced-form version using panel-data estimator in Eviews. The deviation between the actual prices and the prices predicted by the model will give us an indication of housing price mis-alignment.

In addition to the fundamental-based model above, we also estimate a time-series model on the growth rates of national aggregate price index:

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