Commercial and Residential Property Sector

Scale of China's Property Bubble Unprecedented in History

China's real estate asset bubble is unprecedented in history, having reached a scale five times the size of the U.S. property bubble at its peak. China presently has an estimated 65 million vacant residential units with an additional 36 million units planned. The commercial sector is 20% vacant in every major urbanized area and construction in progress will increase available space by more than a third. This massive misallocation of capital has also produced empty shopping malls; deserted airports; vacant railway stations; ghost industrial parks; "bridges to nowhere;" and even entire vacant cities which have remained uninhabited for years. The final phase of the property bubble has fostered competition among municipal governments to undertake construction of increasingly grandiose skyscrapers (see sidebar).

Lu Jiazui Financial Sector of Shanghai's Pudong District

> "In some cities, skyscrapers are often the result of an 'edifice complex' on the part of local officials, who want to construct iconic buildings as proof of economic power and achievement. After completion, some of these buildings have turned into white elephants whose cost far exceeds their revenues. **The $1.2 billion Shanghai World Financial Centre may fall into this category**, as demand for office and residential space is slowing down amid fears that China's over-heated property market is facing a downturn."
>
> - "Developers Hope to Avoid Skyscraper Curse" *China Daily* (March 16, 2009) [51]

[51] The 492 meter high skyscraper has been plagued with a high vacancy rate ever since completion in August 2008, prompting the building's owner to sell entire floors of space at prices nearly half that of high-end residential property. Source: "Mori Group Plans to Sell Commercial Space in Shanghai," *China Daily* (February 18, 2011).

{Propagation of} Skyscrapers as a Leading Indicator of Financial Crisis in Emerging Market Economies

First proposed by financial analyst Andrew Lawrence in 1999, the Skyscraper Index observes that construction of skyscrapers frequently acts as a precursor to economic crises. Examples include the Empire State Building in the U.S. (1930); Petronas Twin Towers in Kuala Lumpur prior to the 1997 Asian financial crisis; and the Burj Khalifa in Dubai preceding the Dubai sovereign debt crisis. The Chinese government is aggressively constructing skyscrapers across China with more than 200 presently under construction (equivalent to the entire existing stock of comparable U.S. skyscrapers) including the Pingan International Finance Centre in Shenzhen (2,165 ft.); Shanghai Tower in Shanghai (2,073ft.); Wuhan Greenland Financial Centre in Wuhan (1,987 ft.); Goldin Finance 117 in Tianjin (1,968 ft.); International Commerce Centre in Chongqing (1,493 ft.); Nanjing Tower in Nanjing (1,476 ft.); and China World Trade Centre Tower 3 in Beijing (1,083 ft.). Completion averages one skyscraper every 5 days, with a total of more than 800 planned over the next 4 years. A skyscraper is defined as any building in excess of 500 feet in height.

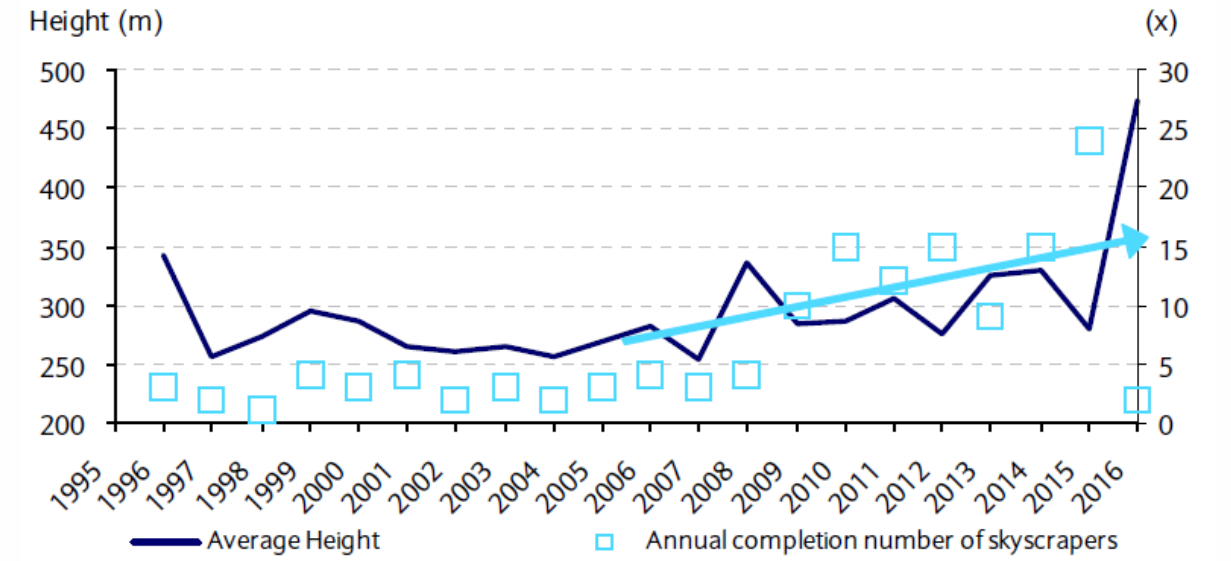
Sources: Motian City Research Institute; China Index Academy; "China's Risky Skyscraper Extravaganza," *Epoch Times* (January 31, 2012); China Real Estate Index System.

Four of the world's ten tallest buildings are located in China (Shanghai, Hong Kong, Nanjing, and Guangzhou) and 53% of all of the world's skyscrapers presently under construction are in China. Published estimates hold that by 2017, China will expand the number of skyscrapers by 87%.[79]

> *"Yet often the world's tallest building is often simply the edifice of a broader skyscraper building boom, reflecting a widespread misallocation of capital and an impending economic correction."* [80]
>
> - Barclays Capital Skyscraper Index

Large-scale construction projects in China are typically government funded; thus, property developers are not concerned regarding financing or finding tenants upon completion of the building. Global consulting firm McKinsey and Company estimates that China will build 50,000 new skyscrapers by 2030, the equivalent of 10 New York Cities. According to Zhao Zhijing, a member of the China City Planning Association, the buildings are often half-empty because few tenants can afford the rent.

China's Skyscrapers are Increasing in Height



Sources: Barclays Capital, www.skyscrapersnews.com

Skyscraper construction in China is moving inland from the coastal Pearl River Delta and Yangtze River Delta regions to second- and third-tier cities. Based upon current completion plans, approximately 80% of China's new skyscrapers will be constructed in second- and third-tier cities over the next six years. The city of Guiyang in southwestern China is planning to build

---

[79] Barclays Capital Equity Research: "Skyscraper Index" (January 10, 2012). See chart illustrating correlation of skyscraper construction activity with onset of economic crises (reproduced on the following page): http://www.zerohedge.com/sites/default/files/images/user3303/imageroot/2012/01/2012012_sky2.png
See also: http://www.macrobusiness.com.au/2012/02/skyscraper-index-points-to-trouble-for-china/

[80] Id.

SKYSCRAPER INDEX

Pervasive US economic recession with bank failures, known as Long Depression
1873 → 1878

British banking crisis, precipitated by the near insolvency of Barings Bank and a world recession
1890

US panic marked by the collapse of railroad overbuilding, a series of bank failures, and a run on gold
1893

US stock market crash and panic, the first stock market crash on the New York Stock Exchange
1901

US economic crisis, speculation in coffee, Union Pacific, monetary expansion from trust companies
1907 → 1910

US and European economic Crisis, end of extended Post-War booms speculation in land and stocks, monetary expansion from stocks bought on margin
1929 → 1933

US and worldwide economic crisis, collapse of Bretton Woods and OPEC price rises, speculation in stocks, property, ships and aircraft, monetary expansion from the Eurodollar market
1973 → 1975

Asian economic crisis, currency devaluation speculation in stock and property, monetary expansion from foreign lending
1997 → 1998

Dot-com bubble bursts causing a stock market crash and the loss of US$5trillion market value
2000 → 2003

Great Recession, rooted in US property market and the subprime lending crisis affected the entire world; financial crisis followed with large banks' collapse
2007 → 2010

1873	1889	1890	1894	1895	1899	1901	1908	1909	1913	1929	1930	1931	1972/73	1974	1997	2004	2010
Equitable Life Building	Auditorium Building	New York World Building	Manhattan Life Insurance Building	Milwaukee City Hall	Park Row Building	Philadelphia City Hall	Singer Building	Metropolitan Life	Woolworth	40 Wall Street	Chrysler	Empire State	World Trade Center	Sears Tower	Petronas Towers	Taipei 101	Burj Khalifa
New York	New York	New York	New York	Milwaukee	New York	Philadelphia	New York	New York	New York	New York	New York	New York	New York	Chicago	Kuala Lumpur	Taipei	Dubai
142 ft	269 ft	309 ft	348 ft	353 ft	391 ft	511 ft	612 ft	700 ft	792 ft	927 ft	1046 ft	1250 ft	1368 ft	1450 ft	1483 ft	1,671 ft	2717 ft
8 Stories	17 Stories	20 Stories	18 Stories	15 Stories	30 Stories	9 Stories	47 Stories	50 Stories	57 Stories	71 Stories	77 Stories	102 Stories	110 Stories	110 Stories	88 Stories	101 Stories	162 Stories

Source: Skyscraper Source Media, Barclays Capital

As the Skyscraper Index (first published in 1999) shows, the link between construction of the world's tallest building and an economic crisis has proved remarkably accurate. It may have started with the Tower of Babel, but over the past 140 years an unhealthy correlation exists between the building of world's the next tallest building and an impending financial crisis: New York 1930, Chicago 1974, Kuala Lumpur 1997, Dubai 2010.

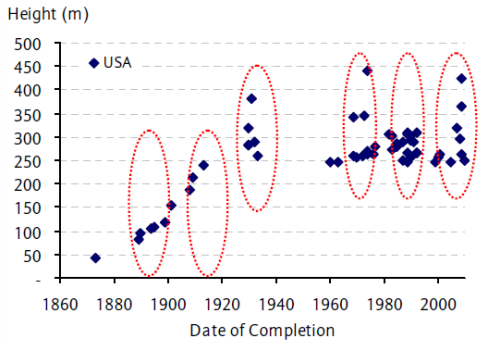
Skyscraper construction has been characterised by long periods of inactivity intersected by short periods of erratically timed, intense activity typically coinciding with excessive monetary expansion in the global economy. Skyscrapers are perhaps the ultimate architecture of capitalism.

The world's first skyscraper, The Equitable Life Building in New York was completed in 1873 at a height to its roof of 142ft. Later demolished in 1912, this first skyscraper coincided with a five-year recession in the US and Europe that started in 1873 and is now known as the Long Depression.

The Auditorium Building in Chicago completed in 1889 and the New York World Building, New York, completed in 1890, coincided with the British banking crisis of 1890 and a world recession. The Masonic Temple in Chicago, completed in 1892, The Manhattan Life Insurance Building in 1894 and Milwaukee City Hall, completed in 1895, all coincided with the US panic of 1893 marked by the collapse of railroad overbuilding, a series of bank failures and a run on gold. Until the Great Depression of the 1930s this was considered the worst depression the United States had ever experienced.

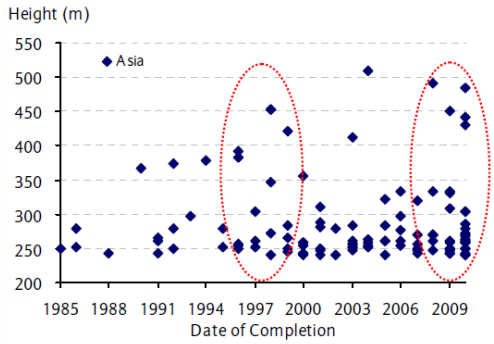
17 skyscrapers, the fifth largest number of any Chinese city. Fang Chenggang, a city of fewer than 1 million residents in Guangxi Province, is planning to construct a 528-meter high Asia International Finance Center, taller than the Shanghai World Financial Centre.[81] Chinese state media recently admitted that skyscrapers are facing sales and rental pressure following completion and that there is a risk of over-investment.[82] Barclays Capital emphasizes that in terms of gauging economic outlook, it is important to focus on the number of skyscrapers being built. Based upon skyscraper completion dates, the chart below depicts the U.S. building booms of the 1890s; 1930s; and 1970s; which correspond with various economic crises. It also presents data illustrating the late 1980s construction surge, which corresponds with U.S. savings and loan crisis, and the more recent activity which corresponds with the present financial crisis.

Figure 2: US building booms in the 1890s, 1910s, 1930s, 1970s



Source: www.skyscrapernews.com, Barclays Capital

Figure 3: Asia building booms in 1997-98, and 2007-2010



Source: www.skyscrapernews.com, Barclays Capital

Figure 4: Middle East building booms in 2007-12

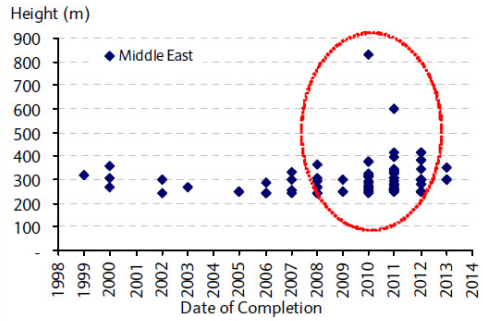
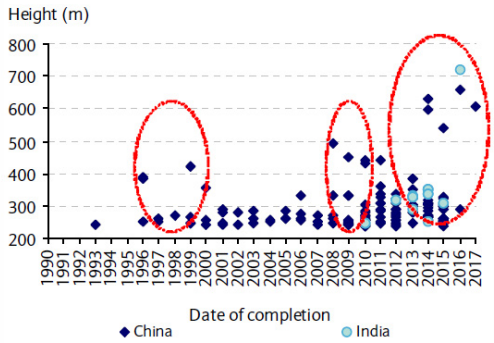


Figure 5: Looking forward, China, and India building booms in 2013-17



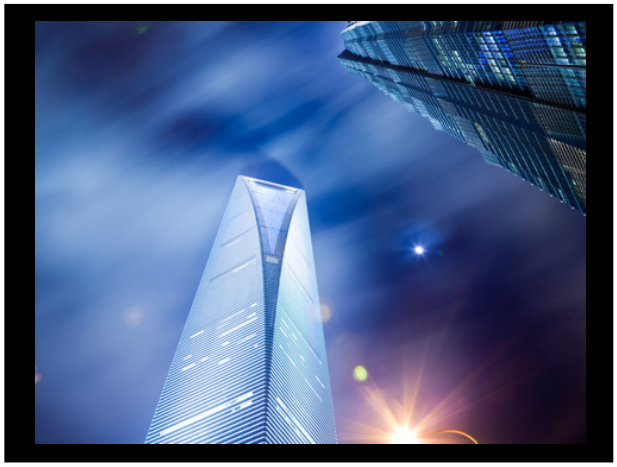
[81] "China's Risky Skyscraper Extravaganza," authored by Jin Jing, *Epoch Times* (January 31, 2012). The article concludes that the mass construction of skyscrapers in China is intended to create the illusion that China is a rising superpower with unlimited resources. According to Du Bingguo, chief researcher at China Index Academy in Shanghai commenting in regard to skyscraper construction, "If there is no new source of money supply, it will break the capital chain and inevitably there will be unfinished building structures."

[82] "Number of Chinese Skyscrapers Sky High," *People's Daily* (June 9, 2011). The article references the "2011 China Cities of Skyscrapers List," a **city competitiveness study** report **based on the number of skyscrapers**. The article is accessible at: http://english.people.com.cn/90001/90776/90882/7404469.html

According to Yu Jingyu, a senior bridge design engineer in China, construction of skyscrapers on such a scale is simply a display of local governments' extravagance and competition: "It makes no sense from the point of view of urban planning and development." Chang Ching-hsi, a professor of economics at National Taiwan University, has stated, "There is a saying in the field of economics: 'the prosperity of skyscrapers is the prelude to an economic and financial crisis.'" Source: Id.

Commercial Property Vacant Space

The predominant speculative and state-mandated GDP elements are also evident with respect to the extent of vacant office and commercial space (both existing and under development). As noted previously, the commercial real estate sector of the Chinese economy is presently 20% vacant across every major urbanized area, and new construction in progress is projected to increase the amount of commercial space available by more than a third of the existing stock. The speculative component has escalated further as non-real estate companies entered the real estate development business. Construction is presently underway of the planned 15.2 million square meters of new office space (equivalent to more than one-third of the total office space in Manhattan) in the Yujiapu Financial District of Tianjin and across the Hai River in Xiangluo Wan (Conch Bay). Construction is also in progress on all 48 of the planned skyscrapers in Conch Bay.



Video: Hugh Hendry Walking Tour of Wuhan's Central Business District

2011 Real Estate Investment Data [83]

Total Investment	Nominal Annual Growth in Total Investment	Investment in Residential Development	Nominal Annual Growth In Residential Investment	Percentage of Residential to Total Investment
6,174.0 Billion Yuan (Approx. $1 Trillion)	27.9% (5.3 Percentage Points Lower Than in 2010)	4,430.8 Billion Yuan (Approx. $700 Billion)	30.2%	71.8%
Total Floor Space Under Construction	**Nominal Annual Growth in Floor Space Under Construction**	**Residential Floor Space Under Construction**	**Total Floor Space Construction Started**	**Nominal Growth in Total Floor Space Construction Started**
5,080 Million Square Meters	25.3%	3,884 Million Square Meters	1,901 Million Square Meters	16.2%
Residential Floor Space Construction Started	**Nominal Annual Growth in Residential Floor Space Construction Started**	**Total Floor Space Completed**	**Nominal Annual Growth in Total Floor Space Completed**	**Residential Floor Space Completed**
1,460 Million Square Meters	12.9%	892 Million Square Meters	13.3%	717 Million Square Meters (13.0% Nom. Ann. Gr.)

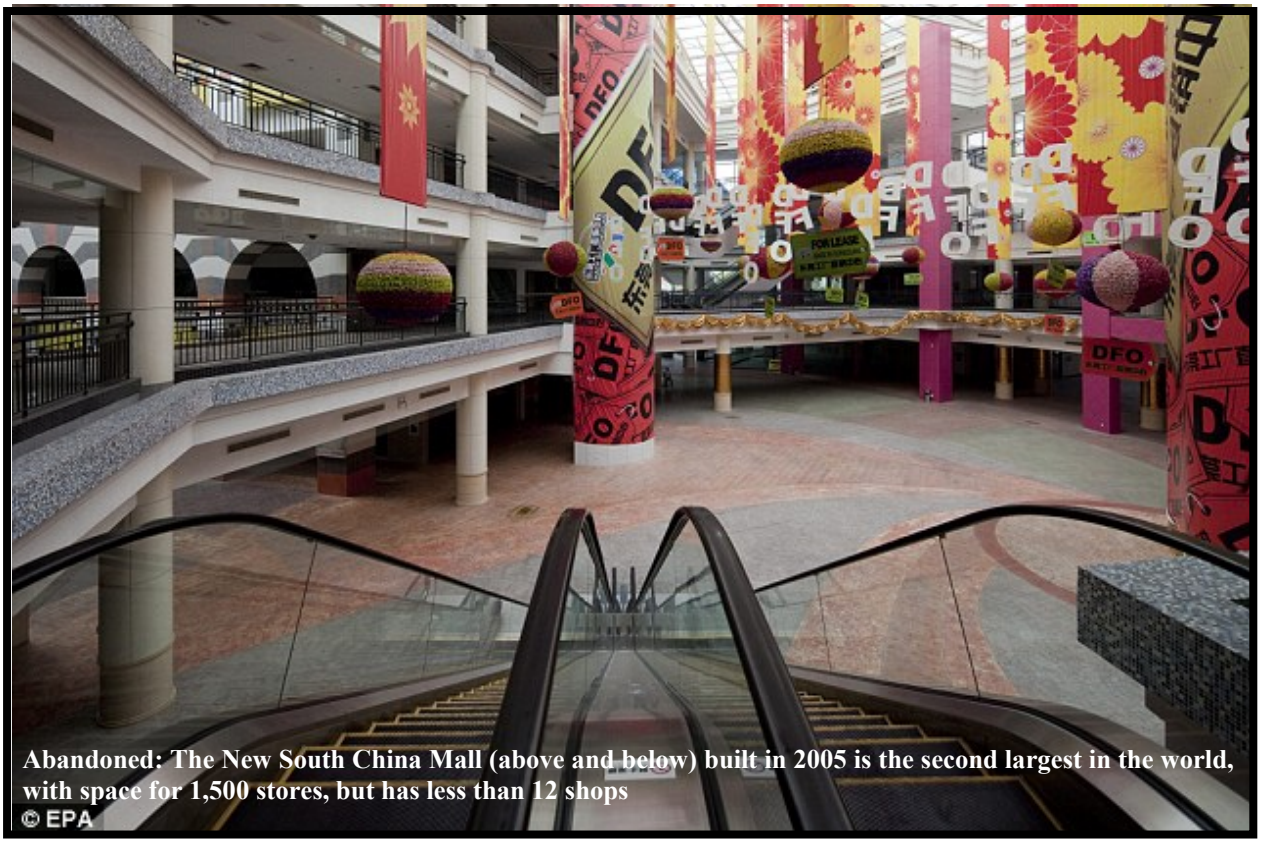
[83] Source: "National Real Estate Development and Sales in 2011," a report published by the National Bureau of Statistics of China (January 19, 2012). The report is accessible at: http://www.stats.gov.cn/english/newsandcomingevents/t20120119_402780050.htm
According to the report, at the end of 2011, residential and commercial floor space for sale reached 271.94 million square meters.

Vacant Shopping Malls

Huge NEW SOUTH CHINA MALL constructed in 2005 and which remains 99% empty


Huge NEW SOUTH CHINA MALL is the second largest shopping mall in the world (second only to Dubai Mall) and has capacity for 1,500 stores and 7.1 million sq. ft. with 99% empty
Image credit: Contrarian Edge

Vacant Shopping Malls



Abandoned: The New South China Mall (above and below) built in 2005 is the second largest in the world, with space for 1,500 stores, but has less than 12 shops
© EPA

Abandoned: The New South China Mall (above and below)
Image credit: Daily Mail

Mostly vacant Cloud Nine Shopping Mall in Shanghai

The Care City Shopping Mall in southwest Beijing, constructed during a national building binge, has few shoppers (Photo by David Pierson, Los Angeles Times / August 17, 2011)

"Housed in a five-story glass cube with a multiplex cinema and western brands like Gap and Sephora, the Care City Shopping Mall in southwest Beijing has all the ingredients for a great retail experience – except actual shoppers." [84]

- David Pierson, Los Angeles Times

In Chongqing, China's eighth most populous city, visible signs portending the onset of large scale economic malaise are becoming increasingly prevalent, including vacant towers and abandoned construction sites with unfinished buildings.[85]

---

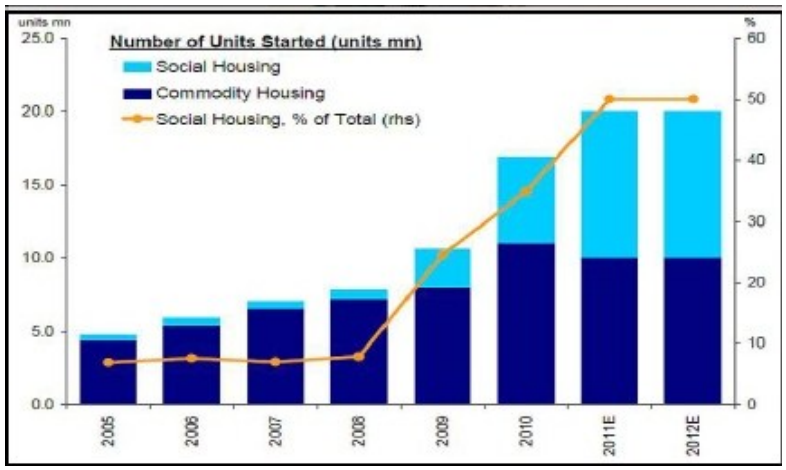
[84] *"China Feels After-Effects of Economic Stimulus,"* by David Pierson, Los Angeles Times (August 16, 2011). The report is accessible at: http://articles.latimes.com/2011/aug/16/business/la-fi-china-economy-20110817
Mr. Pierson describes: "[A] migrant worker from central Henan province, Cheng Yaohua earns $300 per month. He comes to the Care City mall to enjoy the free air conditioning during summer afternoons. While admiring the styles on display in the Gap, he shops at flea markets instead. "The clothes over there cost a tenth of my monthly salary. After I paid for rent and food, I'd have nothing left if I bought something there."

[85] Tim Staermose reports that while in Chongqing, he observed a new tower under construction adjacent to the hotel in which he was staying. When workers completed the 11th floor, they decided to tear it down and start over, building an even taller building (102 stories). Source: "Chongqing - the largest construction site in the world," Tim Staermose, Zero Hedge (July 13, 2011). The report is accessible at:
http://www.zerohedge.com/article/guest-post-chongqing-largest-construction-site-world
Mr. Staermose notes that while abandoned, unfinished buildings are a liability, completed yet empty buildings represent an even greater liability, evidencing the wasteful expenditure and misallocation of resources in the quest for temporary economic "growth." In reference to Chongqing, Mr. Staermose states, "[T]he sheer volume of downtrodden and destitute Chinese on the streets, coupled with rising consumer prices and declining output, all suggest that deep instability is looming. The Chinese have an old proverb: "Keep your broken arm inside your sleeve." They have been telling lies to the world and masquerading as an economic miracle for years, but the signs of stress are showing."

Residential Property Vacant Units

In addition to achieving state-mandated GDP targets, {the extent of vacant residential space evidences the fact that} the Chinese housing bubble is also largely the product of speculators and the deployment of speculative capital, rather than a function of the need for the type of housing which has been recently constructed. Residential development projects are undertaken by the central government, local governments via joint ventures with property development firms, state-owned enterprises acting as property developers and private development companies.

A study based on electricity non-usage over a consecutive 30-day period, conducted by the Chinese Academy of Social Sciences, found an estimated 64.5 million empty residential units within China's urban areas, an amount nearly equal to the total number of units developed over the past five years (65 million units).[86] In addition to the nearly 4 million square meters of housing under construction at the end of 2011, a further 36 million residential units are planned to be constructed by the end of 2015.[87] Although continued urbanization of China's population is frequently cited as the economic justification for the continued construction of empty residential units, China's urbanization has already matured. Approximately one-half of the apartments to be built in the current five year plan will be reserved for low-income households, and are expected to be financed by the state-owned banking system.



Source: Morgan Stanley

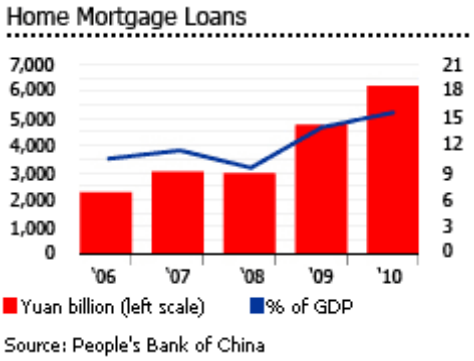
[86] Study led by Yi Xianrong, Chinese Academy of Social Sciences (July 2010). See related article entitled, *"China Economist Says Property Bubble a Threat,"* by Chris Buckley, Reuters (July 09, 2010). The article references an essay published in the People's Daily (July 10, 2010) written by Mr. Yi, wherein he wrote, "The problem now is that investment in the domestic property market has completely overturned China's traditional concepts of wealth management and investment and its price formation system" and that China's overheated property market is creating "misallocation of resources, price distortions, squandering of wealth…and is magnifying national financial risks, so that the economic structure cannot be adjusted, **ultimately leading to overall social instability**." The article is accessible at: http://in.reuters.com/article/2010/07/09/idINIndia-49994520100709

[87] The Chinese Communist Party's Five Year Plan (2011 – 2015). By the end of 2015, the central government plans to have nearly one-fifth of China's 218 million urban households living in state-subsidized apartments (a significant increase from 11% at the end of 2007). The four primary categories of state–subsidized housing programs include (1) two million units of "economic use housing" and "double limit housing" (which are sold at a discount to market prices); (2) just over two million units of "public rental housing" (which is rented at below market rates and can be purchased over time but not sold on the market); (3) more than 1.6 million units of "low-cost rental housing" (which are rented at the lowest rates and are reserved for households which qualify for "urban "minimum income insurance" subsistence living allowances paid by the state to the poorest eligible urban residents); and (4) four million new or renovated residential units located in "shanty areas" (comprising a diverse range of housing in city suburbs, factory dormitories, and accommodations at mines and on farms).

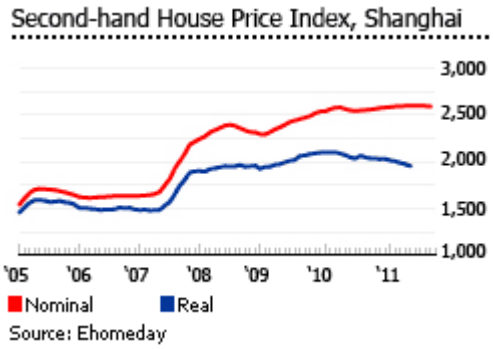
According to the National Bureau of Statistics of China, approximately three-quarters (76.4%) of the real estate floor space under development in China during 2011 was residential. In 2011, floor space under construction by real estate development enterprises accounted for 5,080 million square meters, an increase of 25.3 percent over the previous year (a decrease of 1.2 percentage points over the previous year), and decreased 2.6 percentage points over the first eleven months. Included in these figures is the floor space of residential building construction which equaled 3,884 million square meters, an increase of 23.4 percent.[88]

Housing Provident Funds Program

Originally implemented by the central government in 1998, the Housing Provident Funds ("HFP") program assists workers in accumulating sufficient savings in order to achieve home ownership. The HFP is a workplace-based savings program whereby participants may elect to deposit approximately 20% of their income towards a home purchase and such deposits are exempt from any tax. The government will also match an amount ranging from 20% to 40% of the participant's contribution, depending upon their job-ranking, and deposit such amount into the participant's account.[89]



Among the noteworthy characteristics of Chinese society is a preference for newly-built homes. Consequently, the secondary or resale home market is relatively thin.



Genesis of China's Property Bubble: Causative Influences

The following influences contributed to the acceleration in property price inflation in China's tier-one cities (commencing in 2004), tier-two cities (commencing in 2007), and tier–three cities (commencing in 2010):

- Pervasive inflation and an artificially low interest rate set by the central government resulting in a negative real rate on household savings;

- Lack of attractive domestic investment alternatives (e.g., negative real rate on bank deposit accounts; Shanghai Composite stock market is among the worst performing exchanges

[88] Source: "National Real Estate Development and Sales in 2011," report compiled by the National Bureau of Statistics of China (January 19, 2012). The report is accessible at: http://www.stats.gov.cn/english/newsandcomingevents/t20120119_402780050.htm

[89] The central government's Housing Provident Funds program is essentially similar in nature to the Individual Development Account ("IDA") program employed by many western foundations and Native American tribal governments to incentivize a person's desire to pursue self-improvement ambitions and to leverage the individual's income with supplemental monies to be applied toward the attainment of specific objectives (e.g., attainment of an advanced educational credential, workforce skills training, first home purchase, et al.).

in the world) and an undervalued currency (along with government restrictions) limiting external alternatives;

- Popular and widespread perception in Chinese society of real estate as a store of value which does not decline in price (i.e., the value of real estate only increases over time);

- Chinese cultural preference for home ownership (e.g., to establish marital eligibility) and a prevalent aversion to purchasing pre-owned homes;[90]

- Lack of premium land in China's larger cities;

- Expansion of China's domestic money supply (as a result of the stimulus program) in conjunction with speculative capital ("hot money") inflows into both top-tier and lower-tier cities (as low U.S. and western interest rates effectively export money to China);

- Municipal governments and LGFVs creating partnerships with property development companies to develop projects as both a source of municipal revenue from land sales and also to achieve central government GDP mandates;

- Government assistance to homebuyers in the form of a 'home purchase savings' subsidy;

- Government tax breaks and the absence of a significant national property tax;

- Availability of 'shark loan' financing;

- An unprecedented magnitude of credit expansion attributable to unregulated off-balance sheet bank lending (via private trust companies) and China's shadow banking system as the surge in off-the-books shadow credit continued to fund land purchases and construction;

- 'Land Fever' mentality (i.e., "if I don't buy a house now, I'll miss out");[1] and

- The property bubble was exacerbated as developers ignored the central government's tightening measures and continued adding housing stock in conjunction with sponsoring sales promotions.

Key Finding:

↣ China's housing and commercial property bubble is primarily the result of (1) state-sponsored (i.e., funded) investment in pursuit of GDP mandates, including local government land confiscations and subsequent sale or development; (2) private sector speculation within the housing sector; (3) investment in property development projects by state-owned enterprises; and lastly, (4) household formation amongst the middle class.

---

[90] An IMF study (2005) found an 86% level of home-ownership in China, versus 66% in the United States and an average of 65% in OECD countries.

Propagation of the Property Sector Bubble

Residential property prices in China are cyclical and are characterized by increasingly outsized price movements amplified by government-mandated policies.[91]

Residential property prices increased dramatically throughout 2007, soaring 30% between April 2007 and June 2008, before the global financial crisis caused a decline in prices during the second half of 2008. Housing prices in China's major cities were lower in December 2008 than during the same month of 2007.[92]

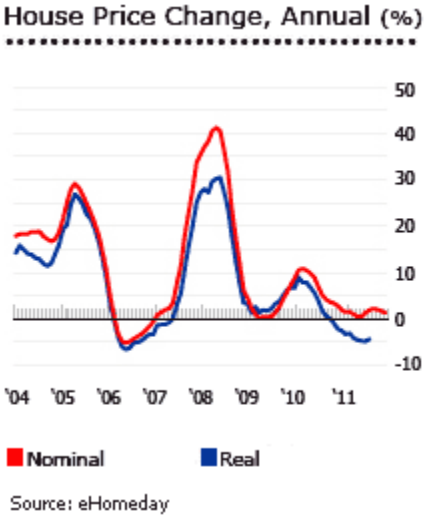
The latest cycle of residential property price increases began during the first half of 2009, when the central government intervened in the market in response to the global financial crisis and implemented the following fiscal measures intended to encourage demand for residential properties:

- The $586 billion stimulus program introduced in November 2008 contained allocations for housing and infrastructure projects in addition to allocations for manufacturing, education and industrial development. Local governments received authorization to issue $27.6 billion in bonds;

- From January through December of 2009, the property deed tax rate for first-time homebuyers was reduced from 1.5% to 1% if the subject property's area measured less than 90 square meters;

- Individuals purchasing residential properties in 2009 received an exemption from stamp duty and land value-added tax; and

- In the event that the residential property was sold within two years from the date of purchase, the sales tax would be calculated based upon the profit increment derived from the resale price, rather than upon the entire original purchase price. If the property was held for more than two years, the seller is exempted from the 5.5% business tax.



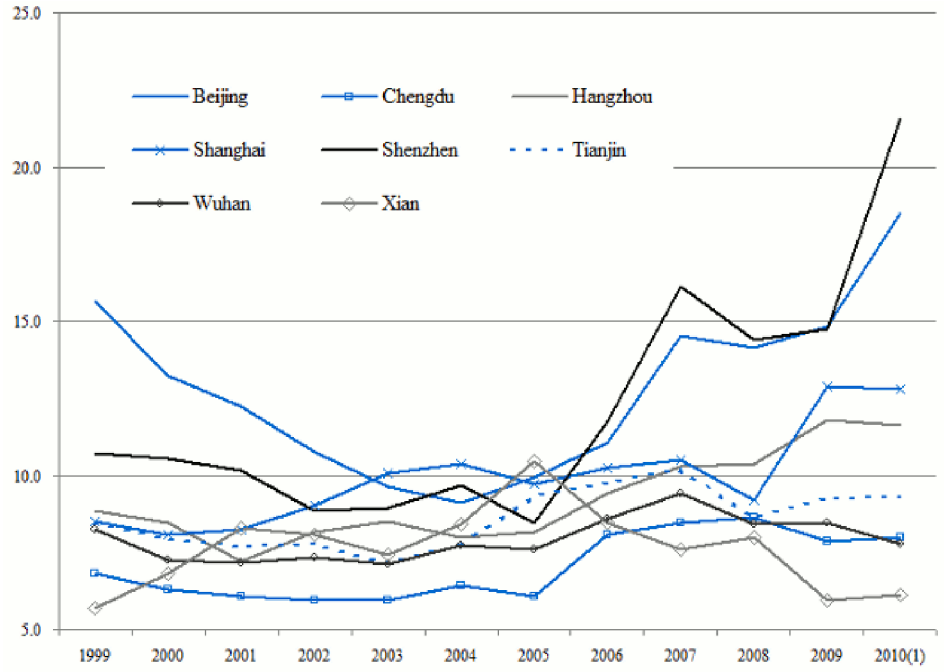
---

[91] Conclusions based upon an analysis of historical data. The Global Property Guide website provides timely property data and trends for various countries around the world including China. The site is accessible at: http://www.globalpropertyguide.com/

[92] China Real Estate Index System. Real estate prices in Shanghai increased by over 150% between 2003 and 2010. Source: *"Market Defies Fear of Real Estate Bubble in China"* by David Barboza, New York Times (March 04, 2010). The article is accessible at: http://www.nytimes.com/2010/03/05/business/global/05yuan.html?_r=2
Also noteworthy is that Tianjin is projected to have more prime office space than can be absorbed in 25 years at the current rate. Source: *"The China Bubble"* by Gady Epstein, Forbes (December 28, 2009). The report is accessible at: http://www.forbes.com/forbes/2009/1228/economy-ponzi-debt-peking-china-bubble.html
The report states: "Tianjin, a gritty metropolis not far from Beijing, will soon have more prime office space than will be filled in a quarter-century at the current absorption rate."

In addition to the above measures, lending policies were relaxed (e.g., reduced interest rates for home buyers and lower capital requirements for developers) to encourage purchase and development of residential properties. As a result, property prices in Shanghai increased by an average of 19% each month (over the prior month) from March 2009 through July 2009.[93]

Price-to-Income Ratios in Eight Major Chinese Markets: 1999 - 2010



Source: Wu, Jing, Joseph Gyourko and Yongheng Deng. "Evaluating Conditions in Major Chinese Housing Markets", NBER Working Paper 16189, July 2010.

During 2009, commercial banks began a new wave of credit expansion by engaging in unregulated off-balance sheet lending utilizing private trust companies, further stimulating property prices. Municipal governments auctioned land parcels, often confiscated from local residents without compensation or seized for a fraction of the land value, and subsequently sold to developers at substantial profit, financed by unregulated off-balance sheet bank loans.

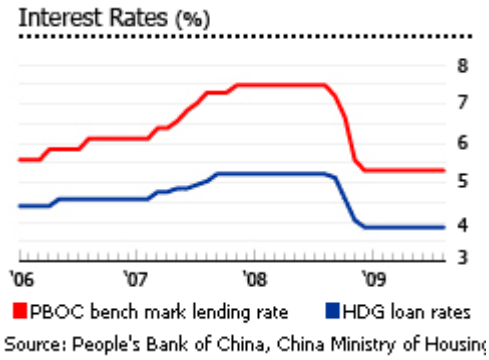
Effects of Government Economic Stimulus Program

The central government's economic stimulus program launched in November 2008 significantly expanded available credit and accelerated property price increases in China's tier-1 cities, with housing prices rising nearly 70% in Beijing and 47% in Shanghai between January and August

[93] *"Boom and Gloom,"* by Wang Ying. China Daily (August 25, 2009). In a December 2011 research report entitled, *"China's Investment Boom: on the Edge,"* Pivot Capital notes that Chinese real estate valuations have exceeded the U.S. on both an income-adjusted basis as well as on an absolute price basis, and cites as an example the fact that the average home price in Guiyang (the capital city of Guizhou, which is the poorest province in China) is approximately equivalent to the average home price in Phoenix, Arizona, a comparable size city but with a per capita GDP 10x that of Guiyang. Pivot's research report is accessible at:
http://www.scribd.com/ValueWalk/d/74974616-PGVF-2011-China-Investment-Boom-on-the-Edge

2009.[94] Sales volume was 80% higher for the first 10 months of 2009 as compared to the same period in 2008.[95]

In an attempt to forestall the domestic effect of the global financial crisis, the central government also reduced interest rates, resulting in total financing for real estate developers increasing by 43% during the first 10 months of 2009.



Sources of Funding For Real Estate Development Enterprises [96]

Total Funding	Nominal Annual Growth in Total Funding	Domestic Loans	Foreign Investment	Self-Raised Funds	Other Sources [97]
8,324.6 Billion Yuan	14.1% (12.1 Percentage Points Lower Than in 2010)	1,256.4 Billion Yuan (No Change From 2010)	8.14 Billion Yuan (An Increase of 2.9% From 2010)	3,409.3 Billion Yuan (An Increase of 28.0% From 2010)	3,577.5 Billion Yuan (An Increase of 8.6% From 2010)

Local Governments at Risk

Local governments are facing increasing pressure as revenues decline as a consequence of plummeting land sales as developers halt land purchases and abandon plans for new construction projects.[98] The severity of the crisis is most pronounced in Tier-2 and Tier-3 cities (e.g., Dalian revenue down 50%, Wuxi -34%, Nanjing -29%, Wuhan -21%) than in Beijing (-14.4%) and Shanghai (-13%), causing financial stresses as cities struggle to pay for basic services (e.g., police and teachers' salaries and healthcare), much less repay the massive amount of debt borrowed to finance stimulus projects.[99] In addition, the amount of debt which municipal entities have borrowed for stimulus projects may also be vastly understated by official statistics.[100]

---

[94] Source: National Bureau of Statistics of China (NBSC").
[95] Id.
[96] Id. at 83.
[97] Other sources include deposits and advance payments (2.161.0 billion yuan: an increase of 12.1% from 2010), and personal mortgage loans (836.0 billion yuan: a decline of 12.2% from 2010).
[98] *"Governments in a Hole as Land Sales Plummet,"* by Zhu Yishi, Caixin (December 19, 2011). The article reports that some city governments are forcing local developers to continue buying land whether they want to or not. The article states that as some property development companies begin edging toward bankruptcy, municipal revenue from land sales in 25 cities declined by 11% between January and November (2011) compared to the same period of 2010. Research agency Centaline Property reported that no buyers came forward to bid on 117 plots offered in 35 major cities in November (2011), compared with 22 plots which went unsold the previous month. Examples of failed land auctions include Jinan, the capital of Shandong Province (where not a single developer bid on 9 plots offered in early November) and Guangzhou (where 32 plots failed to sell in November). Anticipated revenue from the failed Guangzhou auctions comprised nearly 30% of the city's annual fiscal budget. The article is accessible at: http://english.caixin.com/2011-12-19/100339928.html
[99] Id.
[100] *"China Debts Dwarf Official Data With Too-Big-to-Finish Alarm,"* by Michael Forsythe and Henry Sanderson, Bloomberg News (December 18, 2011). The article is accessible at: http://www.bloomberg.com/news/2011-12-18/china-debts-dwarf-official-data-with-too-big-to-complete-alarms.html

The Yujiapu development project embodies many of the risks endemic to the present state of the Chinese economy.

According to Bloomberg News:

> "A copy of Manhattan, complete with Rockefeller and Lincoln centers and what passes for the Hudson River, is under construction an hour's train ride from Beijing. And like New York City in the 1970s, it may need a bailout."
>
> "The project includes a 588 meter-high office tower (taller than the 541 meter-high '1 World Trade Center' currently under construction in the real Manhattan, being built with the help of the Rockefeller family's Rose Rock Group. Steven Rockefeller Jr. attended a Dec. 16 groundbreaking event for the project, which includes the skyscraper inspired by the Rockefeller Center in New York, Zhao Jia, an outside spokesperson for Rose Rock, said. The Lincoln Center is advising on the construction of a performing arts center." [101]

The Yujiapu development is only one of many such development projects financed by debt issued by local government financing entities, which the Bloomberg study of 231 such entities found to comprise at least $622 billion in debt, an amount larger than the size of the European Union bailout fund. While no one knows for certain how many local government financing vehicles exist in China, estimates range from 6,576 (June 2011 report by the National Audit Office) to more than 10,000 (June 2011 report by the People's Bank of China). The entities raise funds through the issuance of debt including bonds, notes, commercial paper and bank loans. The concern is that repayment difficulties will emerge in the wake of falling property prices, upon which municipalities are dependent for revenue.

> *"The real problem is the real estate market cannot fall, the price can't go down. If the property really falls, the local government financing vehicle problems will really come out. Not only will they have problems, but the banks will have problems."* [102]
>
> - Huang Jifa, Deputy General Manager for Investment Banking, Industrial and Commercial Bank of China Ltd.
>
> *"In many of these projects, like the mini-Manhattan, it's never going to make money. Maybe the government can write a check from somewhere else. But that means education gets affected, health gets affected. There's a cost somewhere else, because they're wasting all these resources. You should be more worried than you think. Certainly more worried than the banks will tell you. You know how this story ends – badly."* [103]
>
> - Fraser Howie, Managing Director, CLSA Asia-Pacific Markets (Singapore)

See related Bloomberg article entitled, "China Debts Dwarf Official Data Prompting Alarms: Methodology" at: http://www.bloomberg.com/news/2011-12-18/china-debts-dwarf-official-data-prompting-alarms-methodology.html

[101] Id. The Bloomberg study found that in order to build Yujiapu, Tianjin officials are increasing the level of borrowing which is already equivalent to at least half the annual per capita income of the city's 13 million residents.

[102] Id.

[103] Id.

Many of the LGFVs do not receive sufficient annual revenue to cover interest payments, let alone pay down principal. Rather than having any plans to repay debt other than through additional borrowing, they count on banks rolling over the payments due into the entities' outstanding debt.

> *"In the past, Chinese banks could carry borrowers like this indefinitely. But today they don't have the large cash reserves they used to do this. I don't see how all of this doesn't turn into a major problem at some point."* [104]
>
> - Charlene Chu, Banking Analyst at Fitch Ratings Ltd. (Beijing)

Tianjin was reliant on land sales for 41% of its income in 2009 and although the Bloomberg report stated that an official at Tianjin's foreign affairs office said no one was available to answer questions about whether the city's financing vehicles had sufficient cash flow to service their debts, some Chinese officials apparently remain sanguine on the matter.

> *"There is no risk."* [105]
>
> - Xu Hongzhi, Chief Accountant for Tianjin Binhai Construction

China's Banking System at Risk

The escalating exposure to real estate beginning with the government's stimulus program in November 2008 and continuing through 2011 and into 2012 has placed China's banking system at risk.[106] Declining housing prices have exceeded the parameters of the 'stress test' mandated by the China Banking Regulatory Commission, which sought to determine the impact on the Chinese financial system resulting from a 30% decline in the volume of housing transactions and a 50% fall in prices.[107] The CBRC has not released the results of the test and refused to comment, although an unnamed senior government official reportedly stated that banks were often unaware that loans to large state-owned enterprises had been channeled into real estate

---

[104] Id.

[105] Id.

[106] Describing the situation as it existed in 2010, Jim Chanos stated, "There's almost 70 billion in square feet under construction in high rises in commercial, residential and light manufacturing. And we estimate about 30 billion square feet, and that's with a 'B,' is commercial, that we would just consider office space. To put that in perspective, that's a 5x5-foot cubicle for every man, woman and child in China. These are really staggering, staggering numbers… The banking system is the problem. The banking system is loaded with bad debts. Remember the state controls the banking system there, and the assets of the banking system are suspect." Source: CNBC interview (February 04, 2010). The video of the interview is accessible at: http://www.cnbc.com/id/35235406/Chanos_Bullish_on_Cisco_Bearish_on_China_Greece

[107] *"Property Deal Slump Exceeds Chinese Stress Test,"* by Simon Rabinovitch, Financial Times (November 22, 2011).The article is accessible at: http://www.irishtimes.com/newspaper/finance/2011/1122/1224307948846.html During the month of October (2011), the volume of property transactions fell 39% year-on-year in China's 15 largest cities, adversely affecting developers' cash flows and ability to repay bank loans. According to the article, one analyst stated, "Before property prices drop 30 per cent, one needs to think how much sales are down and, more importantly, how much construction is down. Not only will that impact on steel and cement, but it also would mean a drop in industrial production, investment and jobs." See related article: *"China Property Dip Sparks Bank Fears,"* by Simon Rabinovitch, Financial Times (November 21, 2011). The article is accessible at: http://www.ft.com/intl/cms/s/0/e608bf90-13ed-11e1-9562-00144feabdc0.html

subsidiaries thereby further increasing banks' exposure to property prices.[108] The Chinese experience mirrors earlier problems with stress testing in the European Union, in which regulators underestimated the potential impact arising from a sovereign debt crisis. Additionally, the risks to China's banks posed by loans to local governments are greater than generally thought, as the CBRC has determined that approximately 20% of total loans "have been misclassified as fully covered by cash flows." [109] To properly adjust the accounting for such loans will require banks to apportion greater reserves and demand additional collateral from pressured local governments.[110]

2010 – 2012: Growth in Property Price Appreciation Peaks; Prices Begin to Collapse

● Data Point (April 2010)

In an attempt to slow and reverse housing prices, the central government begins implementation of new administrative controls, including purchase restrictions. Property developers ignore these restrictions and continue adding new construction.

● Data Point (January 2011)

The central government implements additional measures intended to reverse property price trends, including the introduction of specific limits on home purchases in over 40 Tier-1 and Tier-2 cities.

● Date Point (February 2011)

Home transaction volumes in Beijing slumped 70% month-on-month, following the 15 new property rules unveiled in line with the State Council's eight guidelines on the property market.

● Data Point (March 2011)

In March of 2011, prices of new homes in Beijing fell 26.7% in one month, following the government's new tightening measures.[111] Also in March, the volume of new home purchase transactions in Beijing reportedly fell nearly 51% from the same month of the previous year, and nearly 42% compared to the previous month (February 2011), a trend experienced by a large number of major cities monitored by the China Index Research Institute (CIRI). Home transactions in those cities shrank 40.5% year-on-year on average in March, according to CIRI data. The fall in transaction volume seems to be widespread, with a fall of just over 40% year-on-year in major cities. [112]

---

[108] Id.

[109] *"Even More Evidence of a China Hard Landing,"* by Russ Winter, The Wall Street Examiner (March 23, 2012). The article is accessible at: http://www.wallstreetexaminer.com/blogs/winter/?p=4721

[110] The LGFVs sample comprising the Bloomberg study was limited to just 231 LGFVs, which accounted for more than three-quarters of the total local government debt reported outstanding at the end of 2010 by the National Audit Office. The disproportionately large share of debt owed by these 231 LGFvs, relative to the existence of a total of 6,576 (National Audit Office estimate) to 10,000-plus (PBoC estimate) LGFVs, suggests that the total debt outstanding by local governments (and thus Chinese state banks' exposure) is grossly under-reported. LGFVs account for nearly half of all local government debt reported by the National Audit Office.

[111] *"Beijing House Prices Fell,"* by Chen Si, China Daily (April 12, 2011). The article is accessible at: http://www.china-daily.org/China-News/Beijing-house-prices-fell-19/
See also: *"Housing Prices in Beijing Declined in March,"* by People's Daily Online (April 12, 2011). The article is accessible at: http://english.peopledaily.com.cn/90001/90778/90860/7347844.html

[112] Article by Business China, referenced in a report entitled, *"Is China's Hard Landing Already Happening?"* by Edward Harrison, creditwritedowns.com (April 14, 2011). The report is accessible at: http://www.creditwritedowns.com/2011/04/is-chinas-hard-landing-already-happening.html

● **Data Point (August / September 2011)**

Property prices begin to collapse as developers experienced funding constraints and begin liquidating inventories.

Key Finding:

↣ The financial constraints faced by property developers, which continued to build inventory following the central government's administrative measures, are the underlying cause of the collapse of property prices, as opposed to the mere operation of the central government's administrative controls.

Inflection Point: Leading Indicators Portend Collapse of the Property Sector

As noted, the Chinese property market began to collapse in early 2011, when the central government implemented policies intended to end rampant property speculation.[113] In March 2011, Beijing residential prices declined by 27.6% within one month. The decline in China's property prices intensified during September 2011, coinciding with a downward trend in copper prices as shown in the chart below.[114]

[113] The measures adopted by the central government during January 2011 included an increase in the minimum down payment required on mortgages (i.e., from 50% to 60%), the elimination of mortgage discounts offered to first-time home buyers, the imposition of restrictive mortgage qualification standards, establishment of residency requirements, imposition of a limitation on the number of residential units a purchaser is allowed to buy, and enactment of a tax on property sold within five years of purchase. Despite such measures, during H1 2012, the government encouraged banks to offer discounts on mortgages to first-time home buyers.

[114] Source: Bloomberg (September 27, 2011). Copper is a base metal predominantly used in building construction, power generation and manufacture of electronic products. Accordingly, copper tends to be highly sensitive to macroeconomic trends. In recent years, China has been the world's largest consumer of global copper production (estimated by Goldman Sachs Group at 27% although other sources estimate 40%) with 56% of such consumption generated by construction and infrastructure. Copper utilized in property development is estimated by Standard Chartered Bank to comprise 10% of China's total copper production. Power generation consumes the most copper in China, with power grid development being the largest single consumer of copper. Recently, an unprecedented rise in cancellations of copper warrants has occurred, with the principal reason being the removal of the metal from London Metal Exchange warehouses and delivery into China to be used for trade finance when the arbitrage gap opens sufficiently, indicating a serious lack of liquidity in China. This hypothesis is confirmed by a significant increase in copper stocks in bonded warehouses. Copper has also been used by clothing manufactures, food companies and others to speculate on copper prices and RMB appreciations (e.g., a clothing manufacturer purchases imported copper utilizing a bank letter of credit and resells it in the open market immediately for RMB, and then pays the cost of the letter of credit later in dollars).

Commensurate with the central government's implementation of new policies designed to restrain property price increases, China's central bank increased the reserve requirement for banks in an attempt to achieve a contraction in available credit. As a result, on average there has been zero net increase in residential property prices since the end of September 2011.

The effect on the property sector resulting from the imposition of price controls has also proved a source of contentious debate among Chinese policymakers, with the consensus appearing to favor continuation of such controls. Local officials in several Chinese cities initially ignored the central government's mandate, but subsequently complied.[115]

Hey, driver! Want to buy a home? Just 18,000 yuan a square meter.
An agent in downtown Shanghai took to the streets in search of buyers.

Image credit: Yong Kai / China Daily

● Data Point (October 2011)

The volume of housing transactions in China's 15 largest cities declined by 39% over the previous year, exceeding the parameters of the Chinese Banking Regulatory Commission's 'stress test' of Chinese banks. Property developer Greenland Group, backed by the Shanghai municipal government, halted any new land purchases.

---

[115] According to recent reports, central government policymakers appear committed to maintaining property price controls. See, e.g., *"China's Property Controls to Stay,"* China Daily (May 06, 2012). The article is accessible at: http://www.chinadaily.com.cn/xinhua/2012-06-05/content_6102683.html
See also: *"Firm Hold,"* by Lan Xinzhen, Beijing Review (February 13, 2012). The article is accessible at: http://www.bjreview.com/print/txt/2012-02/13/content_424902.htm

● Data Point (November / December 2011)

Residential property prices fell in November relative to the previous month in 49 cities of the 70 tracked by the central government. The China Index Academy reported that home prices in 100 Chinese cities tracked by private real estate researchers declined by an average of 28% in November from October, the third monthly decline in a row.[116] Revenue from property auctions in Shanghai, traditionally China's top city for land sales, declined 13% for the period of January through November relative to the same period of 2010. Property prices began collapsing in Tier-2 cities, as home prices in Sanya on Hainan, China's southern province island, dropped 28% year-on-year and sales volume fell by 52%.[117] In Qingdao, located in the northeastern coastal province of Shandong, developers are reportedly offering 30% - 50% discounts in an effort to attract buyers.[118] Discounts offered to new buyers are reportedly causing incidents involving owners of previously-purchased properties smashing windows of developers' sales offices and demanding refunds for property purchased prior to such discounts. Property developers including Evergrande Real Estate Group Ltd. and Longfor Properties Co. Ltd. posted a drop of 53% for sales in December, compared with the previous year, evidencing that China's property bubble, as well as its consequences, is a nationwide phenomena and not confined to Beijing and Shanghai.[119] Discounting was far more pervasive in Tier-2 and Tier 3 cities such as Chengdu, Hefei, and Kunming, than in Beijing and Shanghai.

Key Finding:

↣ Although the central government's property price controls remain unpopular with speculators, local officials and property development firms, a policy reversal of property price controls by the central government appears unlikely given the following factors: (1) the prevailing housing affordability thresholds in China's Tier-1 cities; (2) the risks endemic to property price appreciation expectations acting to perpetuate inflation expectations; and (3) the central government's policy credibility risk.[120]

---

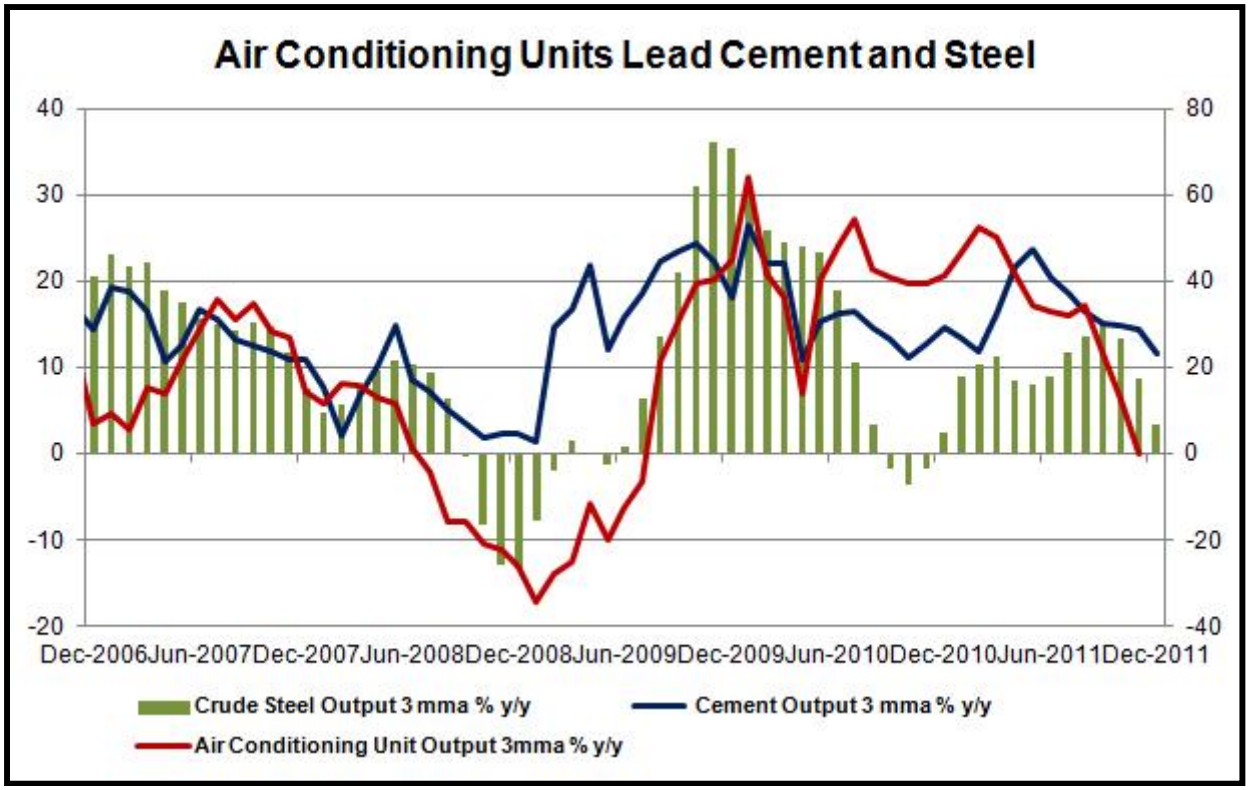
[116] *"Governments in a Hole as Land Sales Plummet,"* by Zhu Yishi, Caixin (December 19, 2011).

[117] *"Hainan Home Bubble Pops as Curbs Deflate Prices,"* by Bonnie Cao, Bloomberg News (December 19, 2011). Chen Zheng, a Sanya resident and property agent, is quoted as stating, "I don't think today is like 20 years ago, when there was just nothing to sustain the market but speculation. But for sure, last year's boom has gone forever." The article is accessible at: http://www.bloomberg.com/news/2011-12-19/sanya-home-bubble-pops-as-property-curbs-deflate-prices-in-china-s-hawaii.html

[118] *"China's Real Estate Bubble Has Burst. The View From Qingdao,"* by Dan Harris, China Law Blog (December 20, 2011). The report is accessible at:
http://www.chinalawblog.com/2011/12/china_real_estate_the_bubble_has_already_brust_but_has_anyone_noticed.html
See related article at:
http://www.chinalawblog.com/2011/12/the_impacts_of_chinas_real_estate_crash_a_hard_rain_is_gonna_fall.html

[119] *"Buyers and developers face some harsh home truths,"* by Hu Yuanyuan, China Daily (November 16, 2011). The report is accessible at: http://www.chinadaily.com.cn/cndy/2011-11/16/content_14101590.htm

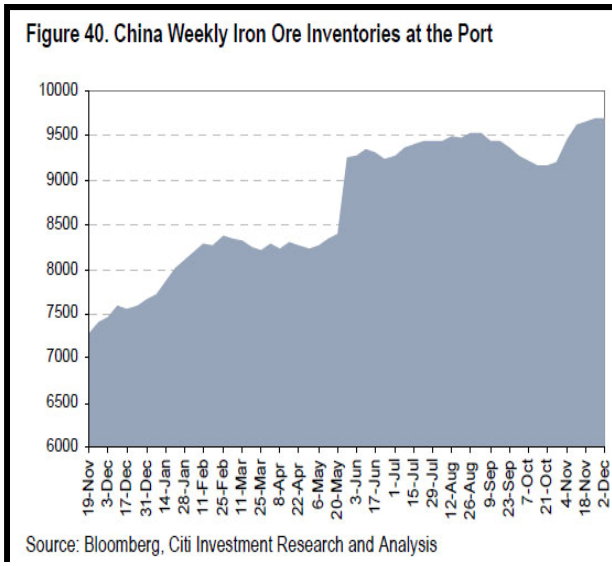
[120] According to Wei Yao, an economist with Societe Generale, although affordability of housing has improved following the government's price controls, it is not happening quickly enough. In China, a house-prices-to-income ratio of approximately 7 is generally considered reasonable (which compares with a ratio of about 4 in western countries). The prevailing price-to-income ratios in China's largest cities remain extremely high: 12.4 in Shanghai, 11.6 in Beijing and 15.6 in Shenzhen. The problem, according to Rosealea Yao of research firm GK Dragonomics, is that policymakers target the most expensive cities, which only account for a quarter of China's national sales volume yet the government's price controls have a nationwide impact. Notably, in Qingdao which has a price-to-income ratio of 7, property sale have fallen by a third during the first H1 2012. Chang Le, a local construction engineer, stated that the public's expectations of a property price collapse has dampened enthusiasm. Mr. Chang added that construction activity has slowed significantly, stating, "[W]e can go back over our old work and do the same thing twice, but there isn't really much useful new work to do." Source: *"China Moves to Lift Property Market,"* by Simon Rabinovitch, Financial Times (June 24, 2012). The report is accessible at: http://www.ft.com/intl/cms/s/0/4e8e7bb4-bc2b-11e1-a836-00144feabdc0.html

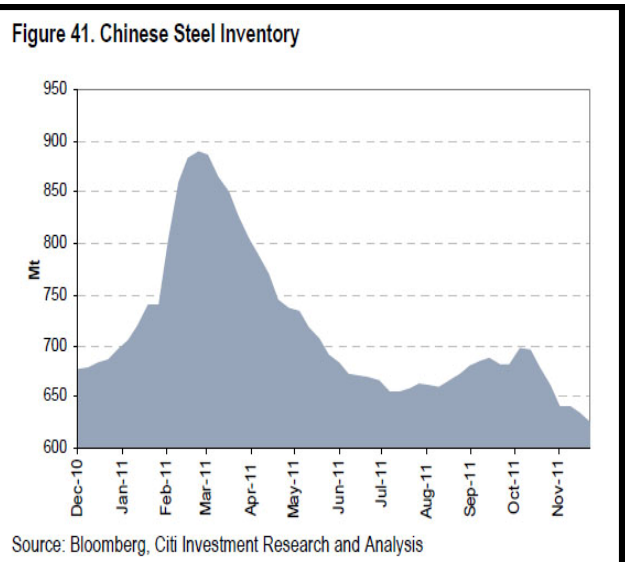


Sources: China National Bureau of Statistics, Wind Information
Credit: Sean Maher: http://www.deadcatsbouncing.com

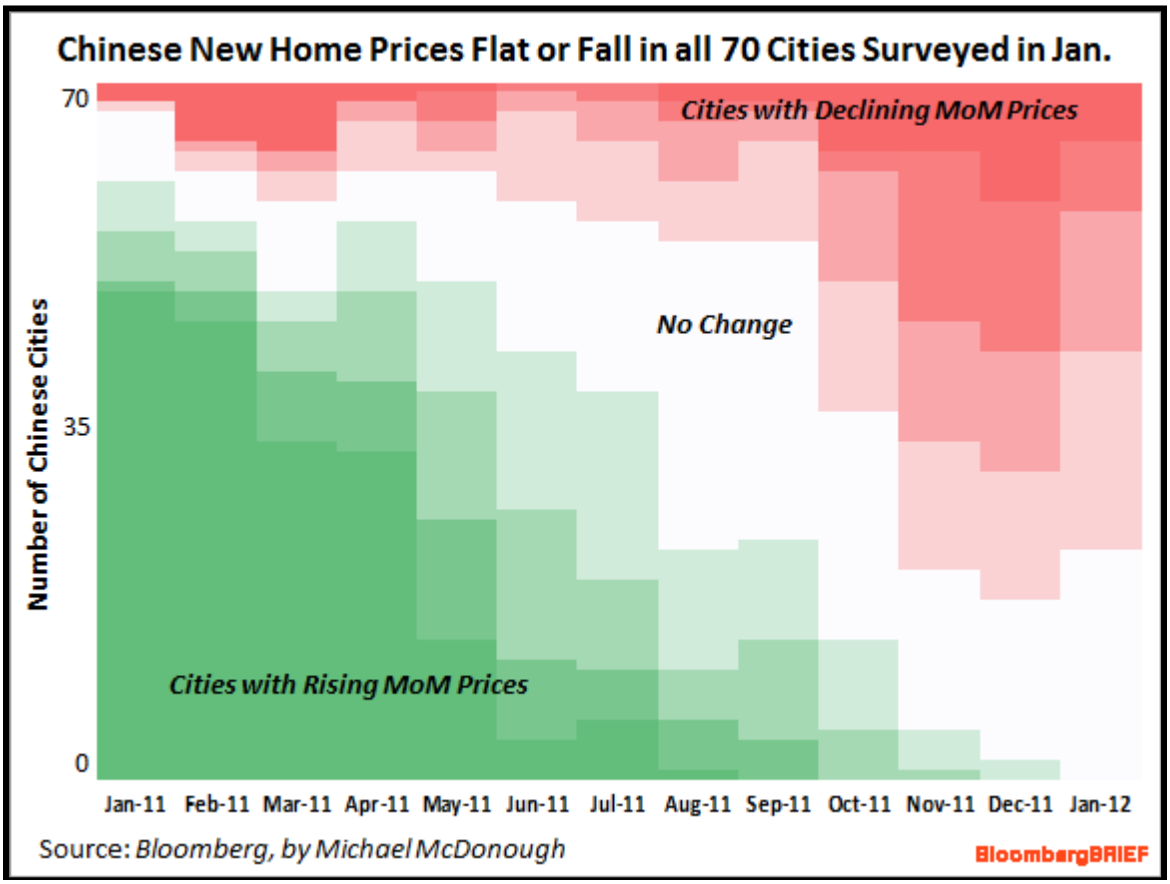
Construction Activity Leading Indicators

Nearly every recently constructed apartment in China has an air conditioning unit installed. As illustrated above, air conditioning unit production correlates with inflection points regarding steel and cement production, yet foreshadows both by approximately 3 months. The two charts below show steel production based upon Chinese port inventories of iron ore and existing steel inventory:





The preceding charts suggest potentially deeper structural problems within the Chinese economy.[121]



● Date Point (January 2012)

New home prices in Beijing declined 24% during the month of January (2012) to $2,800 per square meter according to data released by the Beijing Municipal Commission of Housing and Urban-Rural Development. Zero home sales were reported in Beijing over the week-long Lunar

[121] Source: Fortress Commodities Fund Investor Letter (November 2011), which also states, "A recent trip to visit steel companies outside Beijing underlined the impact of extremely tight liquidity and continued restrictive policy in the Chinese housing market. Steel capacity cuts – through idling or accelerated maintenance outages – are now commonplace and the speed of these cuts has certainly surprised the market. Construction is the principal end-market blamed for this weakness; given the very large inventory overhang and the continued lack of liquidity, this is not surprising. In our equity universe, we have also seen numerous companies expressing concerns regarding China construction demand. Zoomlion, China's second largest construction machinery company, recently said, 'Demand for construction machinery has shrunken drastically and growth will no doubt continue to slow next year.' **Within the context of declining housing starts, plummeting transaction volumes and the beginning of a meaningful move down in housing prices, these shifts in the steel market have been an interesting harbinger of more substantial problems in the Chinese economy**. Our principal concern is the extension of housing weakness into the banking system through the mechanism of both failing developers as well as the opaque and informal lending. We are concerned that the recent strength in iron ore, steel and copper has been misinterpreted by the market. In our view, any suggestion that the Chinese market is undergoing a substantial restock is misplaced." Note further the following statement in the firm's December 2011 Investor Letter: "Our macroeconomic outlook remains pessimistic**.** Global linkages in trade and finance amplify changes in growth dramatically now, and we continue to believe in a **negative growth event with China at its epicenter**."

New Year holiday.[122] Weak transaction volume was also reported by the mainland media for Guangzhou, Hangzhou, Nanjing and Wuhan.[123] Average new home prices fell in January, month-on-month, in 48 of the 70 cities monitored by the National Bureau of Statistics, marking the fourth monthly fall in a row and strengthening evidence that a nationwide cascading price collapse is already underway.[124] This developing trend represents a sharp contrast with the pattern evident a year ago when new home prices fell in only three of the cities.

● Date Point (February 2012)
According to the National Bureau of statistics, average new home prices fell month-on-month in 45 of the 70 large and mid-size cities monitored by the central government.

● Data Point (March / Q1 2012)
Average new home prices fell month-on-month in 37 of the 70 cities tracked. As the decline in prices of newly-built housing accelerated throughout the first quarter of 2012 with prices falling in more than half of the cities tracked, property development firms began launching promotions intended to disguise price discounts. Such promotions continue to include group discounts, no-fault returns, 'buy one, get one free' promotions, and gifts such as luxury automobiles and bars of gold.[125]

Key Finding:

↣ Such pricing discounts are excluded from official price statistics, thus the real collapse of property prices is significantly greater than officially reported.

● Data Point (April 2012)
Average new home prices fell month-on-month in 46 of the 70 cities tracked by the government.

● Data Point (May / Q2 2012)
Average new home prices fell month-on-month in 54 of the 70 cities tracked by the government.

Property Sector Price Collapse

Writing in China Economic Weekly**,** Cao Jinhai, an economist with the Chinese Academy of Social Sciences, forecast an average 40% decline in national housing prices from peak to eventual trough. For the biggest cities, he expects the average drop to top 50%.[126] According to China Index Academy, average prices in Shanghai have already declined 40% from their 2009 peak.[127]

---

[122] *"Zero Home Sales in Beijing a Technical Issue – Deutsche,"* by Reuters (January 31, 2012). The article states that an official of the Beijing Municipal Commission of Housing and Urban-Rural Development reported that zero home sales occurred in Beijing during the week-long holiday. The lack of home sales was subsequently explained by Deutsche Bank AG as "the result of a technical issue." Deutsche Bank stated further that "concern over the issue is misplaced."
[123] Id.
[124] *"China Home Prices Fall for Fourth Month on Curbs,"* by Langi Chiang and Jason Subler (Reuters, February 18, 2012). Prices of new homes in Shanghai fell sharply by nearly 41% (relative to the previous week) during a period of 1 week (January 23-29) in early 2012. Although some observers have attributed the sudden price drop to the Chinese Lunar New Year celebration, property consultant Shanghai UWin Real Estate Information Services Co. released an update stating that compared to the previous week, the volume of new home transactions was down by over 89%, comprising just 36% of the 7 year average for Chinese holidays including the Lunar New Year. UWin property analyst Zhijian Huang stated that property developers will be forced to continue price discounts in order to extract enough cash flow to survive.
[125] Research note issued by Anne Stevenson-Yang, J Capital Research (December 2011).
[126] Source: *"China's economy begins to unravel,"* by Michael McCullough, Canadian Business (January 17, 2012). The report is accessible at:
http://www.canadianbusiness.com/article/66217--prediction-china-s-economy-begins-to-unravel
[127] Id.

Capital Flight ("Hot Money" Outflow): Systemic Risks

Although China's Ministry of Commerce has publicly stated that China hopes to attract an average of $120 billion of foreign direct investment in each of the next four years, the Commerce Ministry reported that foreign direct investment inflows from the European Union fell 42.5% in January as compared to one year ago.[128] As foreign capital inflows slow and then reverse, the effect will be to exacerbate the property collapse.

Key Findings:

↣ (i) As property prices collapse throughout the sector, banking system stress will increase significantly since property is the primary collateral basis for both bank loans as well as speculative debt contracted through China's shadow banking system.

↣ (ii) Capital flight ("hot money" outflow) will accelerate the property collapse.

↣ (iii) Magnified risk of top-down social unrest and political instability will manifest as household intergenerational savings vanish from declining property prices.

Total Foreign Direct Investment
(Excluding Investment in the Financial Sector)

2012				
May	Apr	Mar	Feb	Jan
9.2	8.4	11.7	7.7	9.9
(-1.91%)	(-2.38%)	(-2.83%)	(-0.56%)	(-0.3%)

Jan 2012 vs. Jan 2011
(-37.49% YoY)

2011												2010	
Dec	Nov	Oct	Sept	Aug	Jul	Jun	May	Apr	Mar	Feb	Jan	Dec	Nov
12.2	8.8	8.3	9.0	8.4	8.3	12.9	9.2	8.5	12.5	7.8	10.0	14.0	9.7

Unit: US$100 Million / %: Year on Year (YoY)

Source: The Investment Promotion Agency of The People's Republic of China Ministry of Commerce.
Website: http://www.fdi.gov.cn/pub/FDI_EN/Statistics/FDIStatistics/default.htm

Foreign investment in Chinese property development declined by - 91.4% in March and declined again by -80.8% in April 2012, relative to the same months of the previous year. This emerging trend, in conjunction with the oversupply of housing and the amount of non-economic fixed asset

[128] *"China Jan FDI Falls 0.3 pct y/y to $9.9 Bln."* Reuters (February 15, 2012). PBoC data confirms October 2011 as the first month in which a decline in money inflow has occurred since 2007. The period of November/December 2011 – January 2012 represents the first period comprising three consecutive months wherein the rate of inflow into China has declined year-on-year.

investment committed to date, portends a substantial and adverse impact to China's future GDP growth.

Key Findings:

↣ (i) The construction sector accounts for 20% of GDP and has grown beyond the underlying demand.

↣ (ii) Property investment accounts for approximately one-fourth of gross fixed asset investment ("FAI"), and net FAI accounts for over 50% of China's GDP growth.

Every year China builds enough new residential space to accommodate at least 60 million people, while only 20 million persons relocate into cities annually. At the end of 2011, new residential floor space under construction amounted to 4.6x the amount sold during the entire year.[129] Beijing, a single Chinese city, now has 50% more vacant housing than the United States.

Experience with housing bubbles in the U.S. and Japan has demonstrated that the post-collapse phase of a property bubble is characterized by prolonged economic stagnation. A Chinese property sector collapse may also impact global trade relationships as China is the primary importer of many of the materials utilized in construction, e.g., steel, cement, copper, chemicals and other raw materials.

> *"The biggest risk to China's economy is the desire to maintain past economic growth rates by maximizing investments in property – an unproductive asset. It supports short-term growth by sacrificing long-term growth as capital's average productivity declines over time."* [130]
>
> - Andy Xie, former Chief Economist for Asia at Morgan Stanley

> *"And yet, while the party touts the economic success of the "Chinese model," many of its poster children are heading for the exits."* [131]
>
> - Wall Street Journal

> *"Domestic money in China will be the first to head for the exit – insiders will always know more than outsiders about the underlying economic conditions. So the exodus of cash could indicate that the Chinese story is coming to a close – and that will have significant consequences for the global economy."* [132]
>
> - EconoMonitor

---

[129] Sources: *"China Losing its Shine,"* Societe Generale Cross Asset Research (January 11, 2012), and *"China Real Estate Unravels,"* Patrick Chovanec, An American Perspective from China website (May 16, 2012). Dr. Chovanec notes that a survey conducted at the end of Q1 2012 by China's central bank (PBoC) found that only 14.1 % of Chinese consumers planned a home purchase during Q2, the lowest reported level since 1999.

[130] *"Trapped Inside a Property Bubble,"* Andy Xie, Caixin (January 10, 2010). The article is accessible at: http://english.caixin.com/2010-01-10/100106991.html

[131] *"Plan B for China's Wealthy: Moving to the U.S., Europe,"* by , Wall Street Journal ( ). The report is accessible at: http://online.wsj.com/article/SB10001424052970203806504577181461401318988.html

[132] *"Cash Exiting China,"* by Tim Duy, EconoMonitor (May 31, 2012). The report is accessible at: http://www.economonitor.com/blog/2012/05/cash-exiting-china/

Comparative Real Estate Sector Growth Data: 2010 – 2012 [133]

The Dynamics Driving China's Real Estate Downturn

(Prof. Patrick Chovanec, Tsinghua University, May 16, 2012)

	nominal rate of growth year-on-year, same period						
	2010	2011	2012				
			1Q	YTD	Jan-Feb	Mar	Apr
Property sales are falling ...							
Property Sales (in RMB)	18.3%	12.1%	-14.6%	-11.8%	-20.9%	-7.8%	-4.5%
Residential only	14.4%	10.2%	-17.5%	-13.5%	-24.7%	-9.7%	-2.9%
Office	31.2%	16.1%	-10.2%	-14.0%	-23.5%	5.9%	-23.4%
Retail	46.3%	23.7%	10.5%	4.2%	17.2%	4.5%	-9.5%
... leading to a deepening decline in new starts ...							
Floor Space Started	40.7%	16.2%	0.3%	-4.2%	5.1%	-4.2%	-14.6%
Residential only	n/a	12.9%	-5.2%	-7.9%	0.0%	-9.8%	-14.4%
... which is driving down land sales.							
Land Sales Revenues (in RMB)	65.9%	-1.9%	2.5%	-13.7%	5.8%	-3.6%	-54.7%
Total Land Area Sold	28.4%	2.6%	-3.9%	-19.3%	-0.5%	-8.5%	-52.5%
Financially pressed developers rushed to cash out whatever was already in their pipeline ...							
Floor Space Completed	4.5%	13.3%	39.3%	30.2%	45.2%	32.4%	2.8%
Residential only	2.7%	13.0%	40.0%	30.1%	47.9%	31.4%	0.8%
... but in the face of slowing sales, this only added to the stock of unsold inventory.							
Floor Space "For Sale"	n/a	26.1%	n/a	n/a	39.4%	35.5%	33.4%
Residential only	n/a	35.8%	n/a	n/a	52.0%	47.4%	44.1%
As burst of completions peters out, and new starts drop, investment growth noticeably decelerates ...							
Investment in Real Estate	33.2%	27.9%	23.5%	18.7%	27.8%	19.6%	9.2%
Residential only	32.9%	30.2%	19.0%	13.9%	23.2%	15.2%	4.0%
... and foreign investors pull back							
Foreign Investment in Property Development	66.0%	2.9%	-22.4%	-42.9%	24.4%	-91.4%	-80.8%

Credit: Dr. Partick Chovanec, Associate Professor, School of Economics and Management, Tsinghua University.

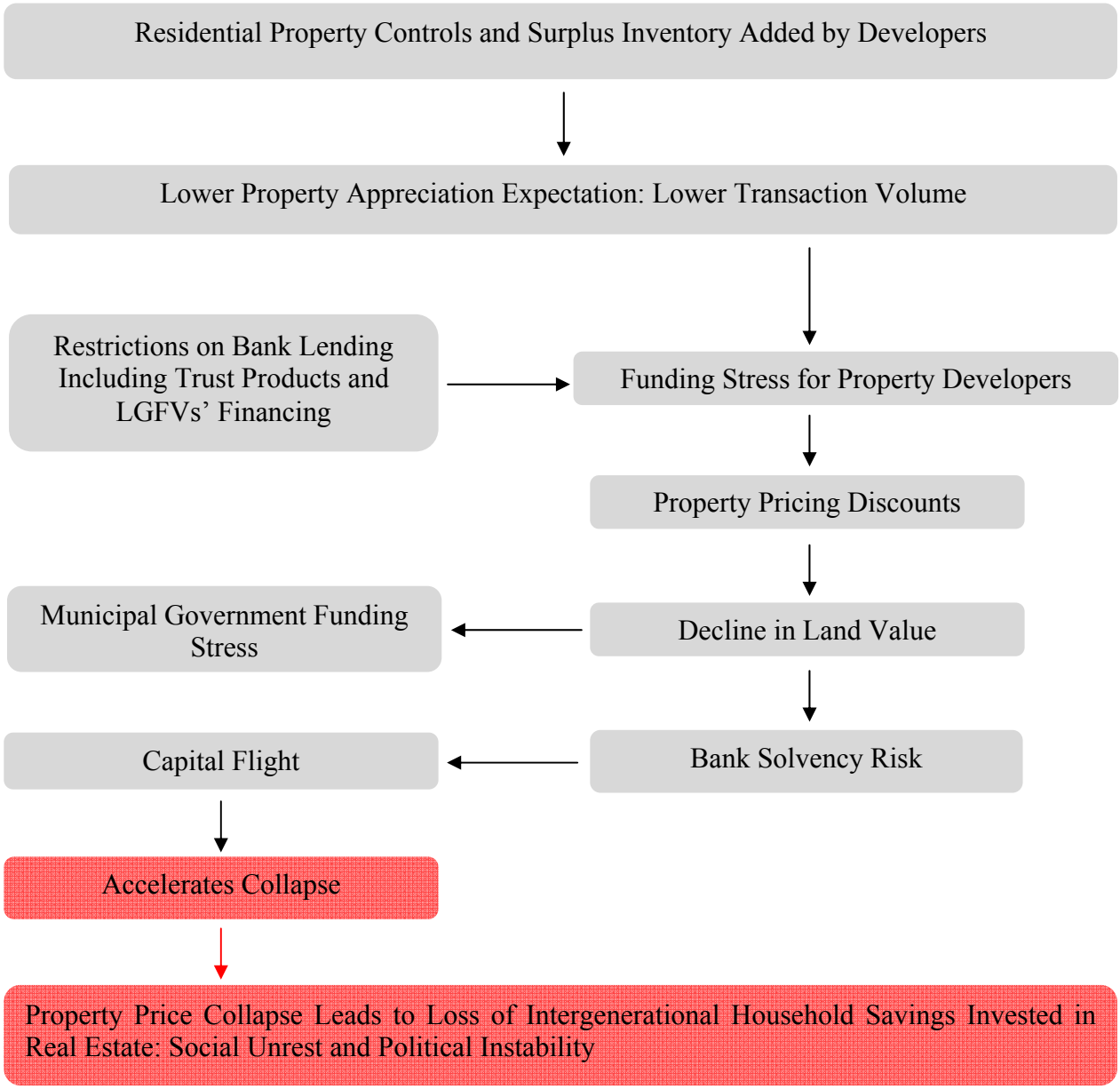
> *"No one has hit the panic button yet. Everyone is holding out hope that at some point it turns around somehow. But I also think that's a triumph of hope over reason."* [134]
>
> - Dr. Patrick Chovanec, Associate Professor Tsinghua University

---

[133] Data source: *"China Real Estate Unravels,"* Patrick Chovanec, Associate Professor, Tsinghua University. The article appears on Dr. Chovanec's website which is captioned, "An American Perspective from China," and is accessible at: http://chovanec.wordpress.com/2012/05/16/china-real-estate-unravels/
The chart is accessible at both the above link and at: http://chovanec.files.wordpress.com/2012/05/re-chart-png.png

[134] Id.

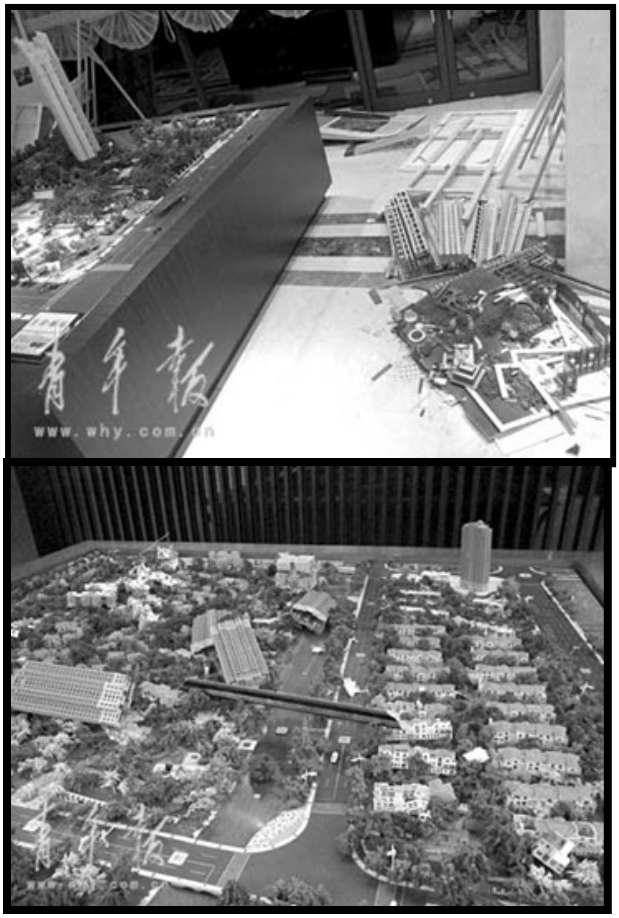
Systemic Dynamics of Property Sector Price Collapse



> *"This is a politically-driven bubble – and it's already massive. Unless the trend is reversed, by reforming incentives for local governments, China's property bubble could mushroom in two years from what's now a dangerous level. The burst could happen in 2012, endangering social and political stability."* [135]
>
> - Andy Xie, former Chief Economist for Asia at Morgan Stanley

[135] "Trapped Inside a Property Bubble," Andy Xie, Caixin (January 10, 2010). The article is accessible at: http://english.caixin.com/2010-01-10/100106991.html

The devastation of intergenerational household savings as housing prices fall has already resulted in incidents involving mobs of angry new-homeowners smashing office windows of property development firms.[136] Such incidents may reasonably be expected to grow in both number and ferocity as the collapse of the property bubble spreads throughout China's tier-2 and tier-3 cities.



Protestors angered by the loss in value of their newly purchased homes caused by discounts offered by developers smash windows of property firms in Shanghai in late October 2011.

Rampant property speculation has created an unprecedented bubble in which collapsing prices will negatively impact China's banking system, local governments and the opaque and informal lending system, exerting a destabilizing effect on both social stability and political institutions.[137]

---

[136] *"Is the Bubble Finally Bursting? Shanghai Developers Slash Home Prices, Owners Revolt"* (Shanghaiist.com, October 26, 2011). Excerpt: "If Beijing isn't careful, there won't be a housing complex model left un-smashed in Chinese real estate offices." The story is accessible at:
http://shanghaiist.com/2011/10/26/is_the_bubble_finally_bursting_shan.php
Related article:
http://www.ministryoftofu.com/2011/10/homeowners-in-shanghai-ravage-developers-offices-amid-falling-housing-prices/
In hopes of avoiding a backlash from angry homebuyers by offering discounts on new purchases, one developer in Wenzhou is instead hoping to attract buyers by offering a free BMW. *"Chinese Property Buyers Get BMW Thrown In,"* Financial Times (November 08, 2011).

[137] A forward-looking research report published in mid-2010 by the National Bureau of Economic Research examined price-to-rent ratios in eight major Chinese cities and discovered that user costs were no more than 2% - 3% of home value, implying that extremely high expected capital gains would be necessary to justify such low user costs of owning. Based upon the authors' findings, the report concluded that even a modest decline in expected appreciation would be likely to cause housing prices to decline by more than 40% in China's major cities. The report also noted that land values have increased in China by nearly 800% over a 7 year period, with half the increase occurring during the 2 years prior to the study (i.e., between 2008 and mid-2010). Source: *"Evaluating Conditions in Major Chinese Housing Markets"* by Jing Wu, Joseph Gyourko, and Yongheng Deng (NBER Working Paper No. 16189, issued July 2010).