



## Attention, Speculators: Here's a Lesson from Hong Kong's Housing Bubble

Published : May 18, 2005 in [Knowledge@Wharton](#)

Whenever housing prices soar -- in Shanghai, San Francisco or Santiago -- experts wonder whether the cause is a speculative bubble that could eventually burst, causing widespread distress. Such frenzied swings are not confined to real estate alone, of course, as any investor who lost his shirt during the dot-com mania of the 1990s knows. What causes such bubbles? Is there a way of spotting them while the bubble is actually being formed -- rather than after the fact? A new research paper that examines volatility in Hong Kong's residential market between 1992 and 1997 offers interesting insights into these questions.

In "The Anatomy of a Housing Bubble" [Grace Wong](#), a professor of real estate at Wharton, offers ways to spot future real estate bubbles in time to introduce corrective measures before the damage takes its toll. Wong's research explores the Hong Kong housing market, which saw a "real increase" in prices of 50% from 1995 to 1997, followed by a "real decrease" of 57% from 1997 to 2002. (Real increases and decreases refer to changes adjusted for inflation.) Transaction volumes, too, rose dramatically from 68,000 in 1995 to more than 172,000 in 1997, but fell to 85,000 the following year.

Wong says the movements in the underlying market and macro-economic fundamentals in Hong Kong during the period studied do not fully justify the dramatic price upswing or the changes in the volume of trading in homes. She says her study offers "a potentially powerful tool" to define, track and look for evidence of speculative activity in the housing markets. "My paper can be used as a diagnostic tool and not after the fact. We can track these movements when a price upswing is actually happening." That ability, she says, will arm policy makers, developers and others in the housing market to reassess their plans much before a bubble bursts. Central banks also could use such real-time market analysis to check for any wanton speculation in the housing market, and intervene with monetary policies like interest rate changes.

So how exactly does the diagnostic tool work? "When there are speculative activities in the asset market, we should see an increase in transaction volume as well," explains Wong. "This positive relationship between turnover and price should be on the top of any positive relationship implied by other theories such as liquidity premium (which states that as assets are traded more liquidly, prices go up.) What I did was make use of a unique data structure that allowed me to separate these stories apart and provide evidence on whether there is speculation." Wong cautions, though, that like other diagnostic tools, this one is probably not perfect.

"The interesting thing is, the bubble grows as speculative activities build up," Wong notes. "There is likely to be some speculative demand in the market at all times, but bubbles form only when there is substantial speculation. What we can do is to keep track of changes in turnover volume, separate increases in turnover due to speculation and those due to other factors, and therefore get a sense of how much speculation there is. When there is a frenzy of trading, a red flag should be raised and we should take a careful look at the fundamentals (which are difficult to measure) and housing prices."

Hong Kong is a suitable setting to draw lessons for markets elsewhere in the world, Wong says, for several reasons. It is a metropolitan city much like other major world cities, and its 1,102 square



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kilometers is about six times the size of Washington, D.C. It has home ownership rates of about 50% and well developed capital markets. The city's large-scale housing complexes allow researchers to work with an empirical framework; that would be more difficult in other situations with low transaction volumes and housing units that are not comparable.

For all the different components of her study, Wong uses a sample size of at least 200 large-scale housing complexes, called estates in Hong Kong. That sample increases to cover data representing up to 320 complexes in select cases. About half the roughly 2.3 million housing units in Hong Kong are provided by the public sector, and most are rental units. Wong's focus is primarily on the other half that are privately owned. The average Hong Kong estate has these characteristics: It is 18 years old and has 291 apartment sizes averaging 590 sq. ft. each. Wong's study reveals that average home prices rose from U.S. \$767 a sq. ft., adjusted for inflation, in the pre-upswing period (July 1993-June 1995) to \$992 in the post-upswing period (October 1995 to September 1997).

Wong's choice of the data sample and methodology helped her overcome some challenges that have typically dogged similar studies. She notes that from the Tulip Craze in the Netherlands in the 17th century to the technology stock bubble of the late 1990s, asset pricing models have been questioned. Also, there has been limited literature on speculation in markets because of the difficulties in measuring the fundamental value of assets. Wong was also confronted with the peculiarities of her target markets: housing stock is heterogeneous; transaction frequency is typically low; and location and local institutions play a significant role -- such as in specifying zoning laws -- in determining values.

Wong was able to overcome those obstacles by conducting a "within-city" analysis, using data sets covering 200-plus Hong Kong estates. But before arriving at that sample, Wong started out with raw transaction data for all real estate transactions in Hong Kong between 1994 and 1998. She excluded transactions involving non-residential sectors and non-livable space such as car parks to get to her next research stage. That meant going over nearly 350,000 property-level observations such as the settlement prices, gross square footage, building names and street addresses.

Wong provides evidence to underscore her theory of "overconfidence-generated speculation" in Hong Kong, supported by a model used in a February 2003 study by Jose Scheinkman and Wei Xiong of Princeton University in their paper, "Overconfidence and Speculative Bubbles." To test alternative theories on the relationship between speculation and turnover, she uses a model put out by Jainping Mei of the Stern School of Business at New York University, and Princeton University's Scheinkman and Xiong in their February 2004 paper, "Speculative Trading and Stock Prices: An Analysis of China's A-B Share Premia."

With that armory of data and methodology, Wong was able to establish that the price increases in Hong Kong were not caused by "a simple supply-side story, in which a sudden decrease in housing supply or rational expectations of future supply decreases" were the main culprits. Wong also discovered that so-called fundamental factors -- such as population growth and migration, wage trends, real interest rates and tax structures - did not spark the demand frenzy.

Wong also discounted the possible explanation of a "flight to quality" by investors after studying returns on equity stocks, bonds and foreign exchange. Here, Wong looked at Hong Kong's Hang Seng stock index, where she found the returns to the non-real estate components were at least as high as that to holding residential housing stock. She extended this part of the investigation to track Hong Kong housing prices alongside indices in stock markets in Singapore and Japan. Her finding: While all three experienced a downturn between 1996 and 1998, the "foreign stock market indices (Singapore and Japan) fell much earlier than Hong Kong housing prices, and they did not show the sharp upward movement before the fall." What this told her was that while the housing market crash may have been caused or aggravated by the regional economic downturn, the upswing before 1997 was rooted in factors specific to Hong Kong.

Wong also explored interest rate movements as a possible explanation to rising home prices. Here, she

found little evidence to support an argument that cheaper finance may have fueled the boom. The Hong Kong dollar is pegged to the U.S. dollar, and so the prime rate is often a reflection of the economic conditions in the U.S. rather than in Hong Kong

The report is a "work-in-progress," says Wong, who wants to continue with her research and refine her findings. "I want to dig deeper into this story," she notes. Without the benefit of adequate data and analysis, Wong won't allow herself to be drawn into speculation on where the next bubble might be, although she does see some evidence in U.S. coastal city markets including San Francisco and Boston that warrant "suspicion." She adds, however, that she cannot say "whether it is time to be alarmed, because I haven't studied the data."

Wong, who has and will continue to present her findings at conferences in Asia and the U.S., hasn't yet sent her work to government policy makers and regulators in Hong Kong, but she plans to distribute copies among peers and other academicians. Her next research project aims at exploring "the linkage between the extent of speculation in different parts of Hong Kong and land supply," she notes. Wong also plans to study the evolution of land use restriction variation across time and space in Hong Kong. "This is a very complex subject and it helps to have more minds focus on it," she says. "We will hopefully develop more sophisticated and more satisfactory theories on real estate."

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