

# What drives Hong Kong's residential property market—A Markov switching present value model<sup>☆</sup>

Qin Xiao<sup>\*</sup>

*Division of Economics, School of Humanities and Social Sciences, Nanyang Technological University of Singapore, S3-01C-120, Nanyang Avenue, Singapore 639798, Singapore*

Available online 1 May 2007

## Abstract

The property market of Hong Kong is one of the most volatile in the world. This study attempts to investigate the proposition that the Hong Kong residential market is only driven by fundamentals. The investigation is based on a Markov switching present value model, which explicitly accounts for a rational speculative bubble. The estimates show that not only does the model capture the asymmetric market responses to information and noise, but it also gives evidence on investor heterogeneity. The study also finds that the influence of the rational bubble is statistically significant.

© 2007 Elsevier B.V. All rights reserved.

*PACS:* 02.50.Ph; 02.50.Ed; 02.90.+p; 05.90.+m

*Keywords:* Speculative bubble; Markov switching; Kalman filter

## 1. Introduction

The property price of Hong Kong is one of the most volatile in the world. Many suspect that such observed price behavior is driven by speculative bubbles. Nevertheless, there have been relatively few research papers devoted to this topic [1]. In this study, the author will examine four classes of Hong Kong's residential properties: domestic premise class A, B, C, and D. These are defined as residential properties with saleable area less than 40, 40–69.9, 70–99.9, and over 100 m<sup>2</sup>, respectively. The time series are CPI (housing)-deflated monthly price and rent indices from March 1980 to February 2006.<sup>1</sup>

The study is motivated by two observations, the first being the change in price–rent ratio. The present value model suggests that the price and the rent indices should move more or less hand in hand. But this is not the case in the data. Instead, the price–rent ratio followed the price movement closely. The second motivation is the large discrepancies in price growth across different classes. During the two early expansions in the sample period, occurred in January 1991–April 1994 and January 1996–June 1997, the luxury end of the market

<sup>☆</sup>The author is very grateful to the anonymous referee for his/her constructive and detailed comments. Any remaining mistakes are the responsibilities of the author.

<sup>\*</sup>Tel.: +65 93458681; fax: +65 64763539.

*E-mail address:* [cxiao06@yahoo.com.sg](mailto:cqxiao06@yahoo.com.sg).

<sup>1</sup>Source: CEIC Economic Databases.

significantly outperformed the lower end. In particular, class D went through the most impressive price growth relative to other classes, especially class A. Between January 1991 and April 1994, class D price rose by 145.68% (in real terms, same for the rest), which is almost three times the price growth in class A. After the Asian financial crisis, the market tumbled all the way down. By September 1998, all classes shed more than half of the values. The property market, however, embarked on a remarkable recovery in mid 2003. In this recent expansion, class D again greatly outperformed class A (Fig. 1, Table 1). If these price growths are driven by economic fundamentals other than the rent, the impact of these fundamentals on different classes should have been similar. Do these observations imply the existence of a speculative bubble? If so, how much of the recent rise in the property prices can be attributed to a speculative bubble? These are the issues the current paper is interested in.

The literature on property price bubbles stretches back to the 19th century [2]. Yet, until the current date, bubble is not well defined. Loosely speaking, a bubble exists in a price if the price is other than what is warranted by its fundamentals. Here comes the trouble: what is or what are the fundamentals of an asset price? In the property price literature, there is no unified theoretical framework, which clearly defines THE FUNDAMENTALS. Typically, different researchers will use different fundamentals in their theoretical or empirical models [3–6].

This study will adopt the present value approach, which is well accepted in the financial economics literature, but will allow for asymmetric responses. The asymmetry is captured by a state variable following a first order Markov chain. This state variable is unobservable, but can be inferred from some observables using discrete Kalman filter [7]. The present value model was initially developed for the stock market. The property

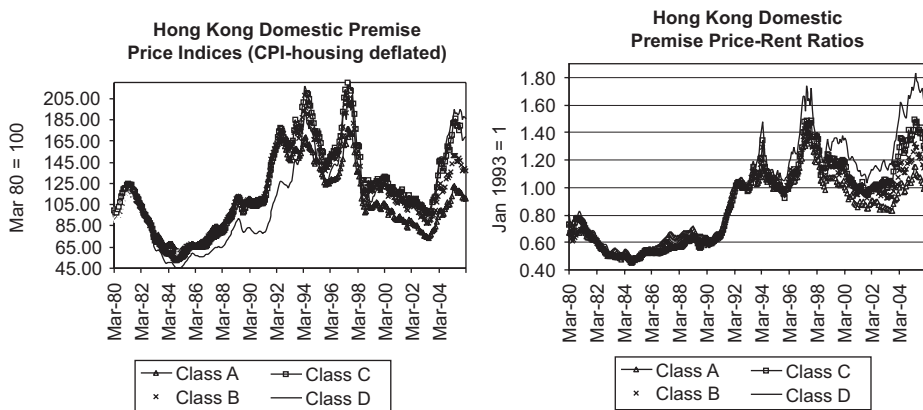


Fig. 1. CPI (housing)-deflated Hong Kong domestic premise price indices and price–rent ratios. The luxury end of the market went through the fastest growth during the recent market expansion. By April 2005, the price index of class D has reached 93.5% of its peak value in October 1997. This growth is largely unexplained by the corresponding rent growth.

Table 1  
Historical facts

	Total change by class (real)				Average change per month by class (real)			
	A (%)	B (%)	C (%)	D (%)	A (%)	B (%)	C (%)	D (%)
January 1991–April 1994	51.82	78.14	101.24	145.68	1.30	1.95	2.53	3.64
January 1996–January 1997	41.25	44.22	53.83	54.95	2.29	2.46	2.99	3.05
July 2003–May 2005	58.64	67.79	89.26	90.00	2.67	3.08	4.05	4.09

During the three expansions in the sample period, the luxury end of the market consistently outperformed the lower end. In particular, class D went through the most impressive price growth relative to the other classes, especially class A. Between January 1991 and April 1994, class D price rose by 145.68%, which is almost three times the price growth in class A. Between July 2003 and May 2005, the former again significantly outperformed the latter.

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات