

TRADING BETWEEN RISK & REWARD (II)

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Limitations

By applying the same analytical methods as in the previous article of ‘trading between risk & reward’ part I; the risk and reward of different sub-sectors of the property market was assessed. Most of the limitations of this method still persist.

Risk & Reward

Returns from various sub-sectors of the property market were highly cyclical and they tend to moved in tandem to a general trend. Popular segments such as residential and commercial had lower volatility, while less prevalent segments such as development land and industrial sector had higher volatility. 2013 proved to be a surprising year with the less volatile segments leading in returns. Some of main gainers in the commercial and residential market were the state of Johor, Perlis, and Putrajaya.

Risk/Reward Ratio

The calculation results from both coefficient of variance and Sharpe ratio were consistent in providing the best **risk-adjusted return** sectors. For the 10-year period, residential sector was the most ideal, followed by industrial, commercial, agricultural, ‘others’, and development land. For the 3-year period, the most favorable sector was industrial, followed by residential, commercial, development land, agricultural, and ‘others’.

Based on these ratios, the residential market is still the best sector to invest in, for the mid to long-term duration.

By applying the same analytical methods as in the previous article of ‘trading between risk & reward’ part I; the risk and reward of different sub-sectors of the property market was assessed. The only difference was the usage of actual Ringgit value as the data input, which is significantly different from the previous article of using the Malaysian House Price Index (MHPI).

However, majority limitations of the study still persist. The only improvement was the normality test; in which the data was more normally distributed.

Limitations

There were several limitations when using this method in the property market. However, the utilization of such method would indirectly shed some light on the significance of risk and reward. Those identified limitations include:

1. Normality test

The YOY rate of return for the average price per transaction (10-year period) is not quite normally distributed (skewed slightly to the left). Remedial would be to expand the time frame being studied to include more data sets. However, the degree of normality in such data sets has yet to be determined.

2. Model suitability

This method which is widely used in the securities market but is deemed less fitting in the property market. This is due to the unique nature of the property market compared to the securities market. Risk is not usually addressed and quantified in the property market.

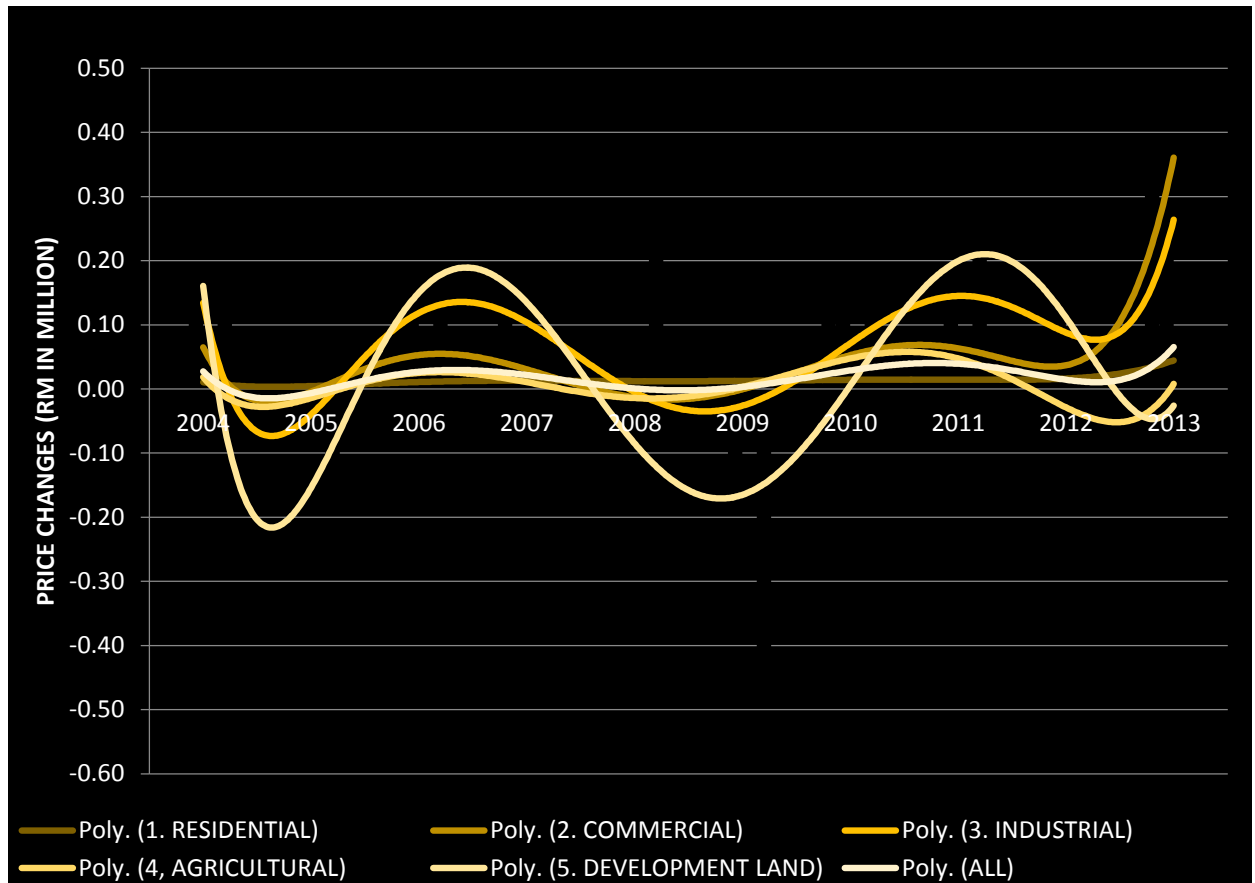
3. Mode of return

As mentioned earlier, the mode of return is only calculated as house price appreciation and not taking into account other factors such as rental income and cost.

4. Market efficiency

Property market is not as efficient and liquid as the securities market. There may be time lag and delays when adjusting to a changing variable. Critical decision-making information was not readily available to the public.

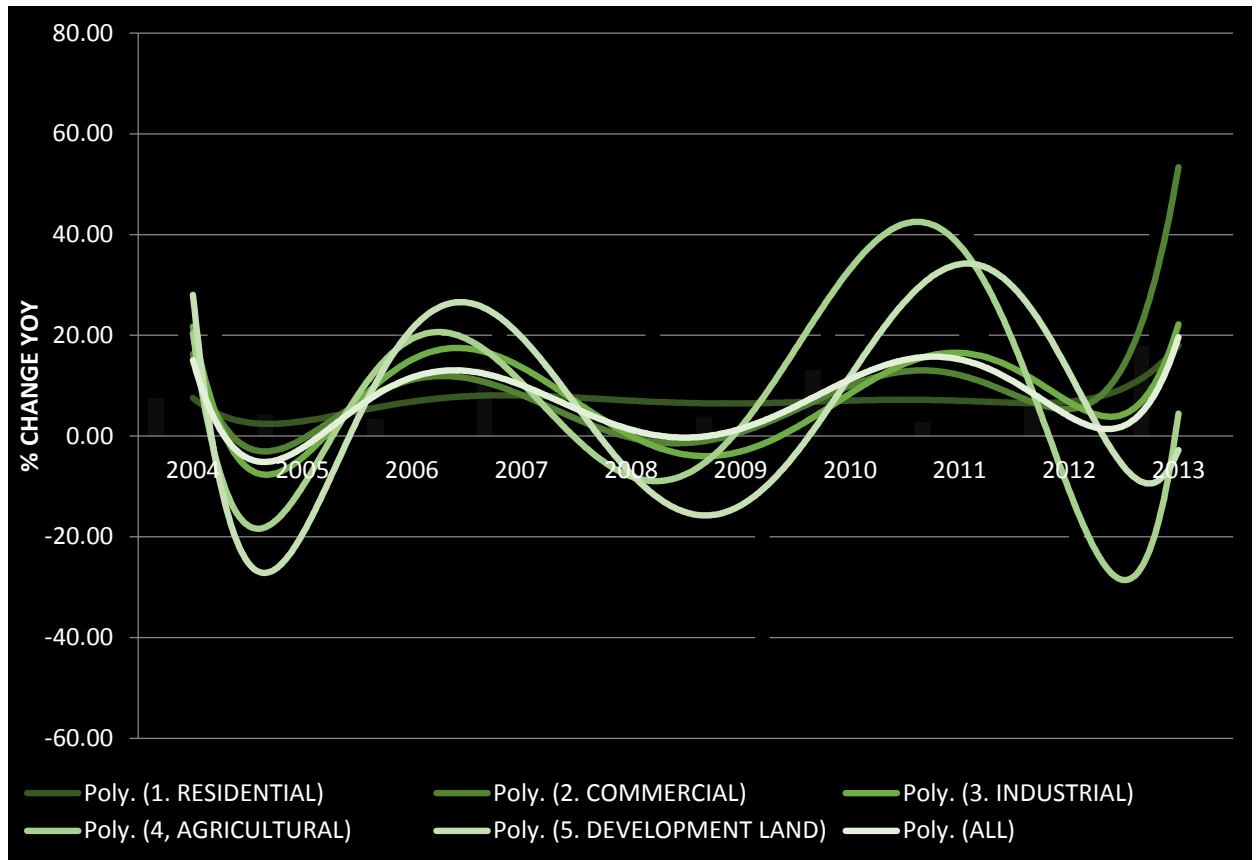
Figure 1: Annualized average returns from 2004 – 2013 (NAPIC, 2014).



Absolute terms

In this section, changes in average price per transaction were measured in absolute terms (exact Ringgit changes). It was observed from the polynomial curves that returns were highly cyclical and most sub-sectors moved in tandem to a general trend. The most volatile market was development land, followed by the industrial sector. Residential units tend to have lower volatility compared to the other sub-sectors. The market witnessed some surprises in 2013, with the commercial sector leading in price appreciation, followed by the industrial sector.

Figure 2: Annualized average returns from 2004 – 2013 (NAPIC, 2014).



Relative terms

While in this section, changes in average price per transaction were measured in relative terms (percentage changes). It was observed that movements for polynomial curves in relative terms were almost similar to their absolute counterparts. Tracking the overwhelming gain in the commercial sector, both the industrial and residential segments posted superb price appreciation in 2013 as well.

In the commercial sector, some of the top gainers were the state of Johor with YOY average price appreciation of 242.64%, followed by Putrajaya (152.74%), Perlis (112.08%), Melaka (59.26%), and Penang (42.79%).

Whereas in the residential market, the top gainers were Kelantan (82.19%), Perlis (49.57%), Johor (39.59%), Putrajaya (38.81%), and KL (37.63%).

It was surprising that the state of Selangor was not in the list of top gainers. In both instances; Johor, Perlis, and Putrajaya were within the group of top 5 gainers (JPPH, 2014).

Risk/Reward Ratio

Table 1: Average return (reward) and standard deviation (risk) for 10 years and 3 years.

SUB-SECTOR	R	C	I	A	DL	O	ALL
MEAN (10 YRS): 2004 - 2013 (RM IN MILLION)	0.02	0.06	0.09	0.01	0.03	0.02	0.02
MEAN % Y-O-Y (10 YRS)	7.79	11.64	9.73	9.88	8.42	15.12	8.73
STD. DEVIATION (10 YRS)	5.25	19.59	11.72	20.74	26.14	42.68	8.82
SUB-SECTOR	R	C	I	A	DL	O	ALL
MEAN (3 YRS): 2011 - 2013 (RM IN MILLION)	0.02	0.15	0.16	0.02	0.09	-0.20	0.04
MEAN % Y-O-Y (3 YRS)	9.62	21.94	13.73	14.70	14.26	-24.12	12.08
STD. DEVIATION (3 YRS)	7.63	27.14	7.00	39.99	18.88	7.97	7.66

R = Residential, **C** = Commercial, **I** = Industrial, **A** = Agricultural,
DL = Development Land, **O** = Others, **ALL** = All sectors

Reward (Return)

For the 10-year period, annualized average return in relative terms was the highest for properties classified under ‘others’ (15.12%), followed by commercial (11.64%), agricultural (9.88%), industrial (9.73%), development land (8.42%), and lastly residential (7.79%).

In the 3-year period, the highest annualized return was observed for commercial (21.74%), followed by agricultural (14.70%), development land (14.26%), industrial (13.73%), residential (9.62%), and ‘others’ (-24.12%).

Risk (Standard Deviation/Volatility)

For the 10-year period, annualized average standard deviation was the highest for ‘others’ (42.68), followed by development land (26.14), agricultural (20.74), commercial (19.59), industrial (11.72), and residential (5.25).

In the 3-year period, the highest annualized standard deviation was observed for agricultural land (39.99), followed by commercial (27.14), development land (18.88), ‘others’ (7.97), residential (7.63), and industrial (7.00).

Figure 3: Risk/reward ratio (Coefficient of variance).

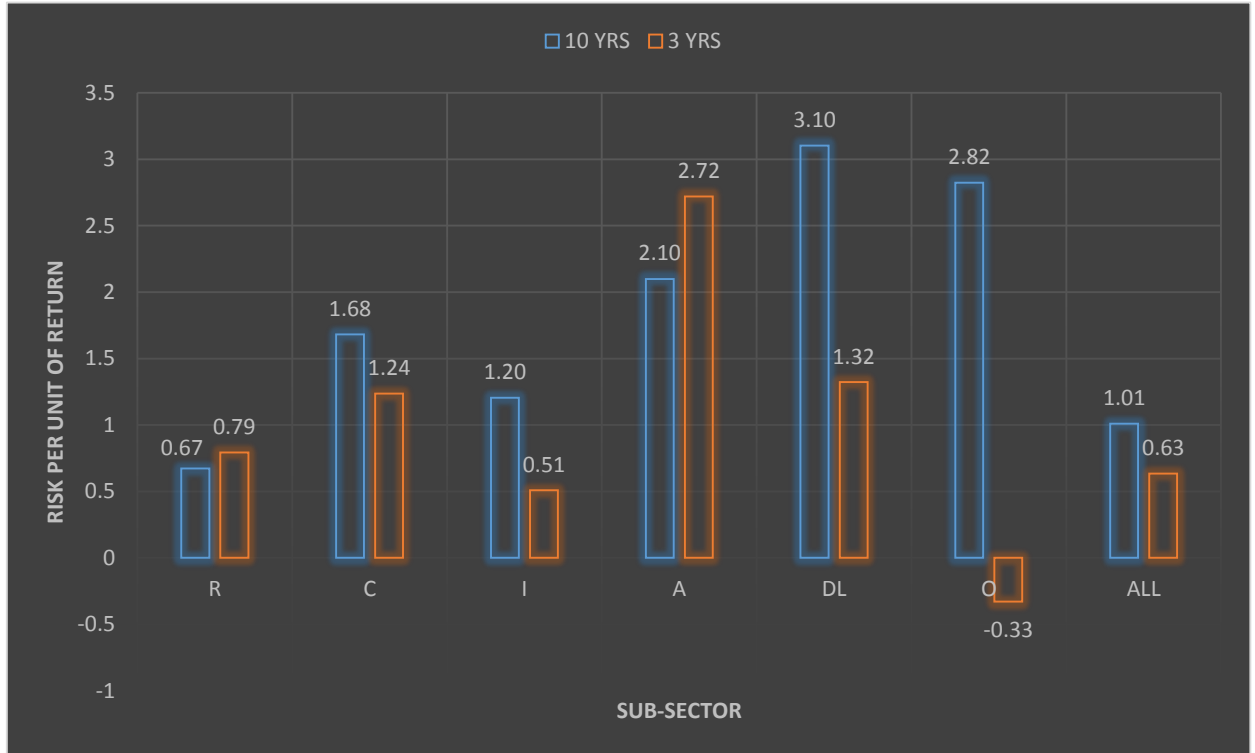


Figure 4: Reward/risk ratio (Sharpe ratio).

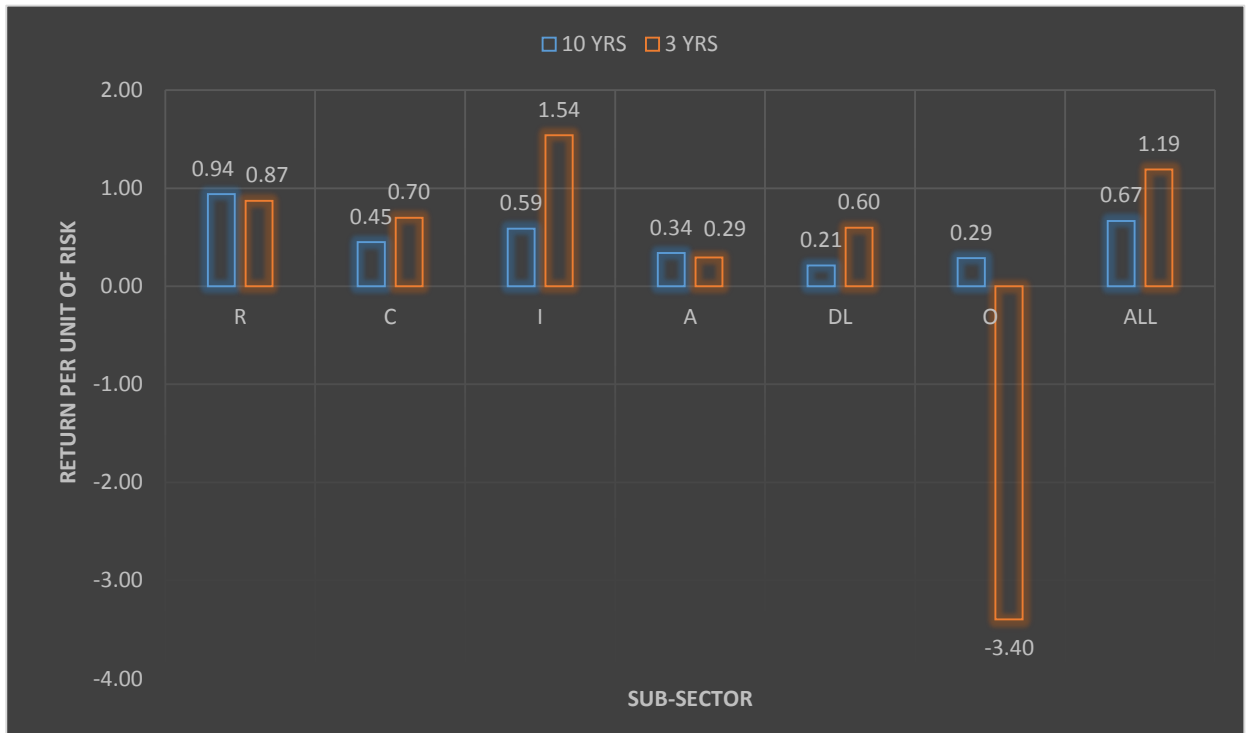


Table 2: Ranking of sub-sectors in terms of favourability; using coefficient of variance and Sharpe ratio.

COEFFICIENT OF VARIANCE	SECTOR	VALUE	SHARPE RATIO	SECTOR	VALUE
10 YRS	R	0.67	10 YRS	R	0.94
	ALL	1.01		ALL	0.67
	I	1.20		I	0.59
	C	1.68		C	0.45
	A	2.10		A	0.34
	O	2.82		O	0.29
	DL	3.10		DL	0.21
3 YRS	I	0.51	3 YRS	I	1.54
	ALL	0.63		ALL	1.19
	R	0.79		R	0.87
	C	1.24		C	0.70
	DL	1.32		DL	0.60
	A	2.72		A	0.29
	O	-0.33		O	-3.40

R = Residential, **C** = Commercial, **I** = Industrial, **A** = Agricultural,
DL = Development Land, **O** = Others, **ALL** = All sectors

Risk/Reward ratio

The general risk/reward ratios used are as follow:

1. Coefficient of Variance = Standard Deviation / Mean Return

: (Amount of risk per unit of return)

2. Sharpe Ratio = [Mean Return – Risk-free rate) / Standard Deviation

: (Amount of return per unit of risk)

The order of ranking for **risk-adjusted returns** were consistent for both Coefficient of variance and Sharpe ratio.

For the 10-year period, residential sector was the most ideal, followed by industrial, commercial, agricultural, ‘others’, and development land.

For the 3-year period, the most favorable sector was industrial, followed by residential, commercial, development land, agricultural, and ‘others’.

JPPH. (2014) *Property Market Report 2013*, Putrajaya: Valuation and Property Services Department.

NAPIC. (2014) *Key Statistics*, [Online], Available: <http://napic.jpph.gov.my/portal> [15 Jun 2014].

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