



مؤسسة النقد العربي السعودي

DO SAUDI STOCK MARKET VALUES REFLECT THEIR FUNDAMENTALS?

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Outline

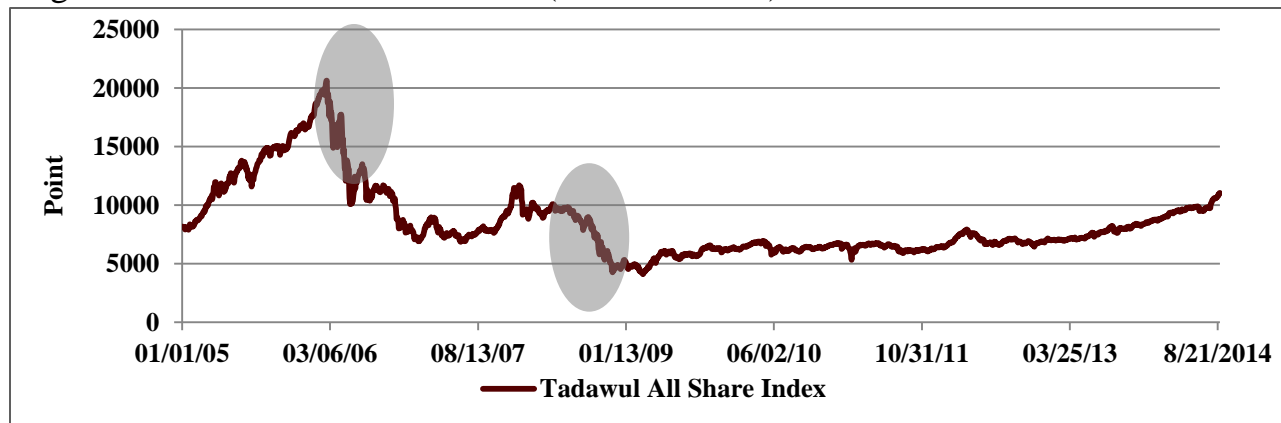
1. Introduction
2. Research Method
3. Empirical Results
4. Conclusion

1. Introduction

Table 1: Percentage Decline in Market Index during Previous Downturns

	Market Index	
	2006	2008
One Day Before Market Initial Reaction	20,634.86	8,981.99
15 Days Later	14,900.04	7,216.71
% Change	-27.79%	-19.65%
Three Months Later	10,173.28	4,424.23
% Change	-50.70%	-50.74%
Lowest Level	6,905.56	4,264.52
<i>Data Source: Tadawul</i> % Change	-66.53%	-52.52%

Figure 1: Tadawul All Share Index (2005- Current)



Data Source: Tadawul

1. Introduction (Continued)

- **Questions:**
- Do security prices reflect their fundamentals?
- What causes market values to deviate from fundamentals?
- Do these factors exist in the Saudi stock market?
- Do Saudi stock market values reflect their fundamentals?

1.1 Do security prices reflect their fundamentals?

A fundamental value is defined as the discounted present value of the sum of expected future cash flows.

The efficient market hypothesis: Security prices fully and accurately reflect all available information, which simply means that:

- Prices are right.
- Competition will quickly eliminate any profits.

If all assumptions are met, then security prices should reflect their fundamental values.

1.1 Do security prices reflect their fundamentals? (Continued)

- The efficient market hypothesis does not always hold.

Due to:

- Market frictions and constraints
- Investors' behavioral biases

1.2 What causes market values to deviate from fundamentals?

There are four main factors:

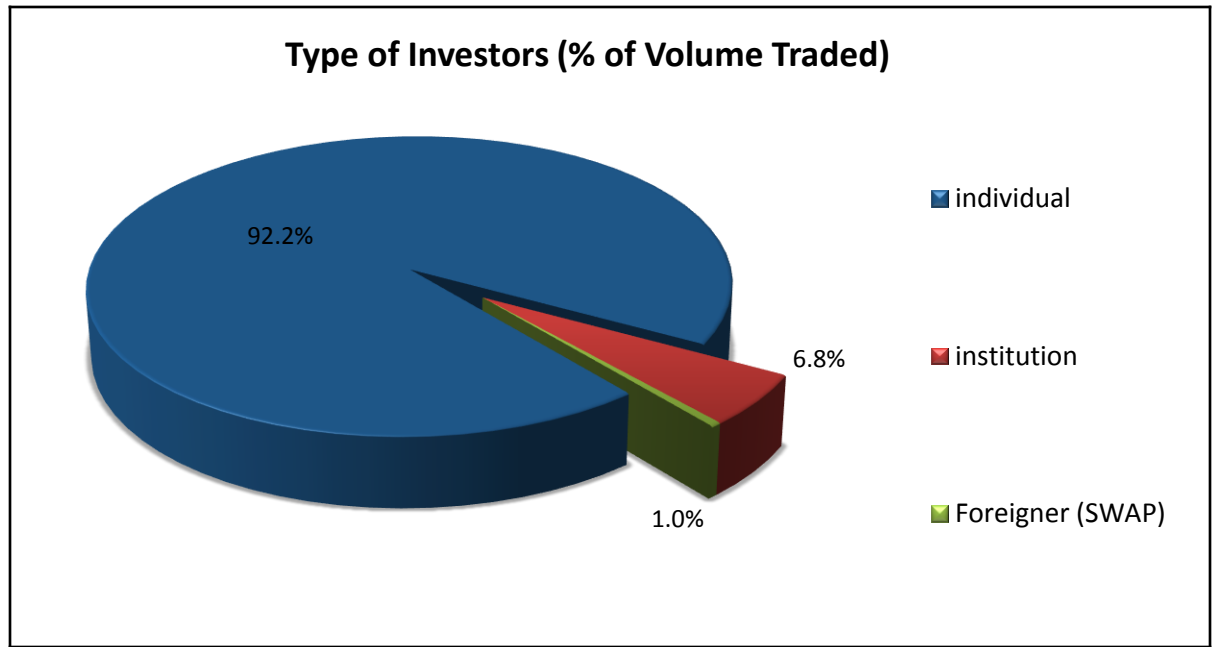
- Asymmetric information
- Limited liability
- Existence of overconfident agents
- Herd behavior

1.3 Do these factors exist in the Saudi stock market?

- It is difficult to directly test for the existence of some of these factors
- **Limitations of the Saudi stock market are as follow:**
 1. Lack of institutional investors
 2. Limited market access by foreign Institutional investors
 3. Market Concentration
 4. Restrictions on short selling

1.3.1 Lack of Institutional Investors

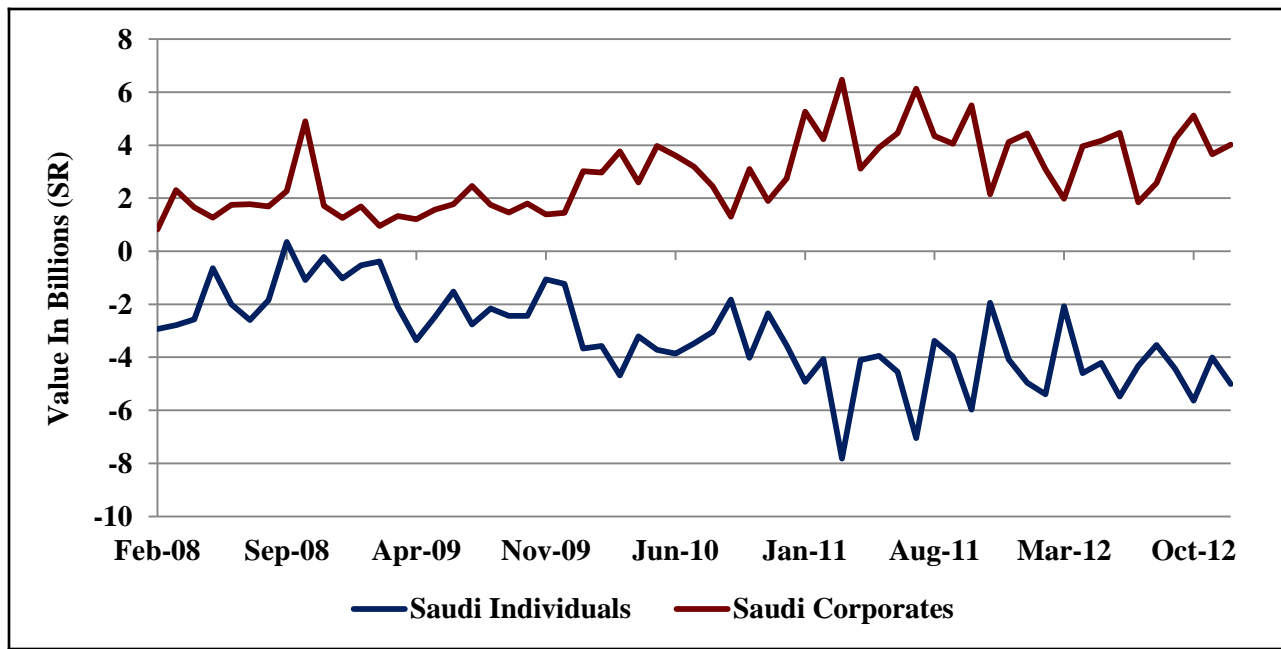
Figure 2: Investors Trading Statistics based on Type (April 2014)



Data Source: Tadawul

1.3.1 Lack of Institutional Investors (Continued)

Figure 3: Net Buy and Sell Position of Saudi Individuals and Saudi Corporates



Data Source: Tadawul

1.3.1 Lack of Institutional Investors (Continued)

Table 2: The Correlation between Different Types of Investors (Feb 2008-Dec 2012)

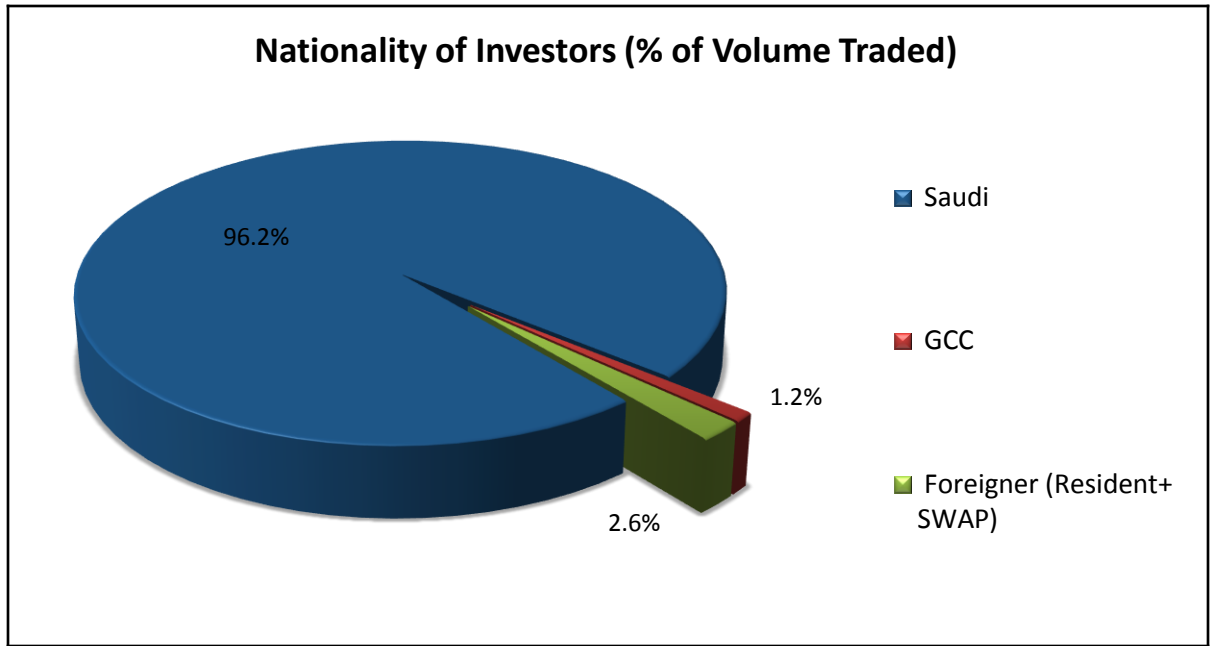
	Saudi individual	Saudi Corporate	Saudi Mutual Fund	GCC Citizens	Arabs (NON-GCC)	Foreigners (NON-Arabs & GCC)	Foreigners (Swap)*
Saudi individual	1	-0.80	-0.62	-0.20	0.03	0.55	-0.18
Saudi Corporate	-0.80	1	0.34	-0.24	-0.26	-0.49	-0.28
Saudi Mutual Fund	-0.62	0.34	1	-0.09	-0.17	-0.53	-0.01
GCC Citizens	-0.20	-0.24	-0.09	1	0.36	0.20	0.17
Arabs (NON-GCC)	0.03	-0.26	-0.17	0.36	1	0.29	-0.29
Foreigners (NON-Arabs & GCC)	0.55	-0.49	-0.53	0.20	0.29	1	-0.23
Foreigners (Swap)*	-0.18	-0.28	-0.01	0.17	-0.29	-0.23	1

Data Source: Tadawul

*The coefficients of the row and column of Foreigners (Swap) are based on the period from March 2009 until Dec 2012.

1.3.2 Limited Market Access by Foreign Institutional Investors

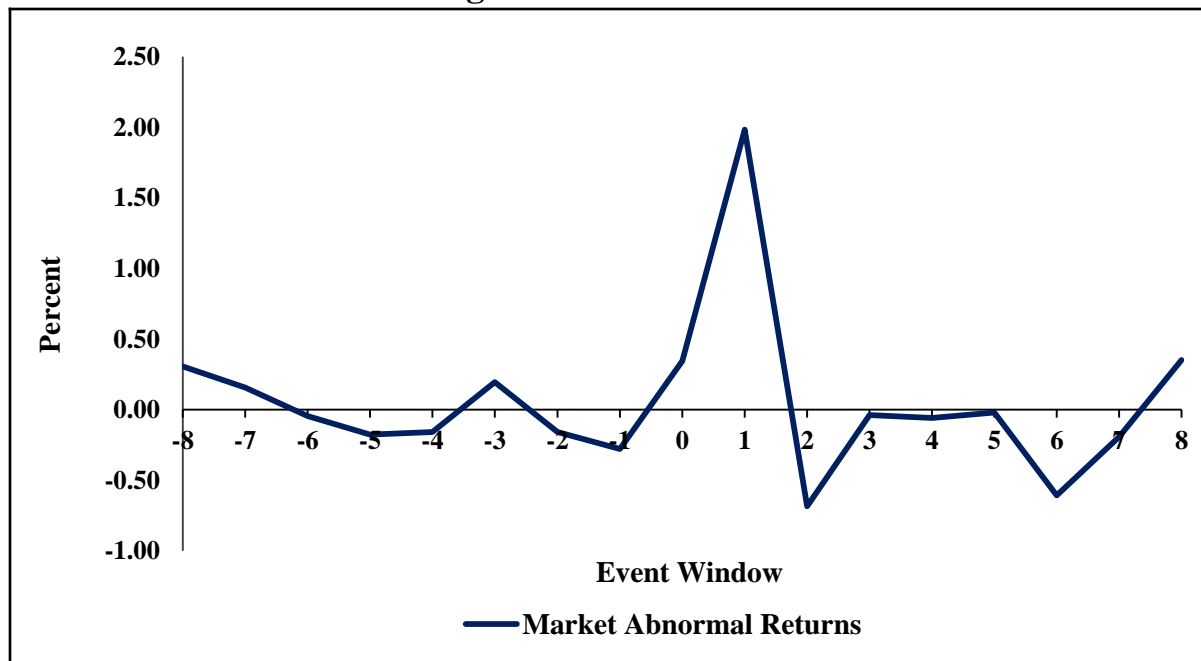
Figure 4: Investors Trading Statistics based on Nationality (April 2014)



Data Source: Tadawul

1.3.2 Limited Market Access by Foreign Investors (Continued)

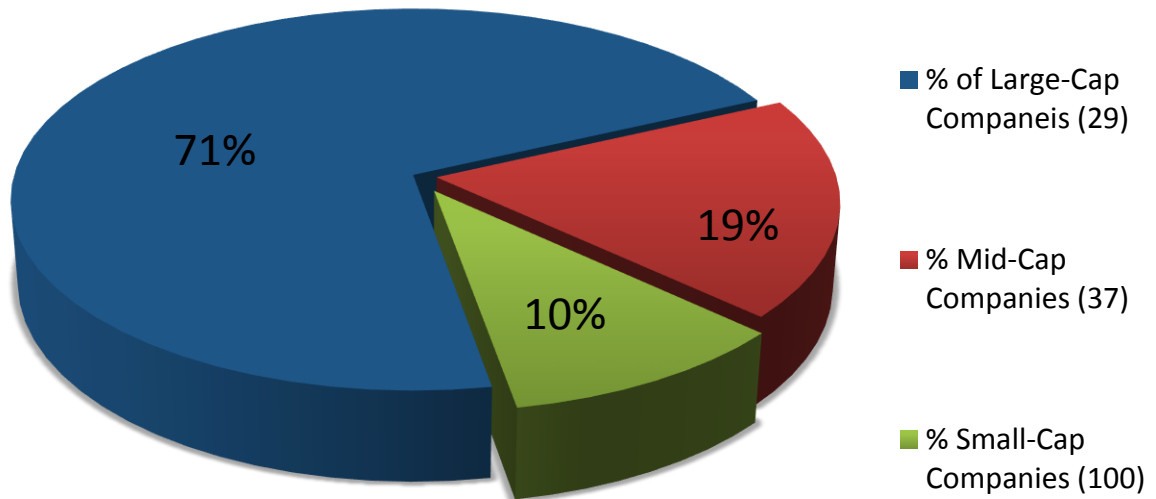
Figure 5: Market Reaction to the Announcement of Approving the Measure that Allows for Direct Foreign Investment



Data Source: Tadawul

1.3.3 Market Concentration

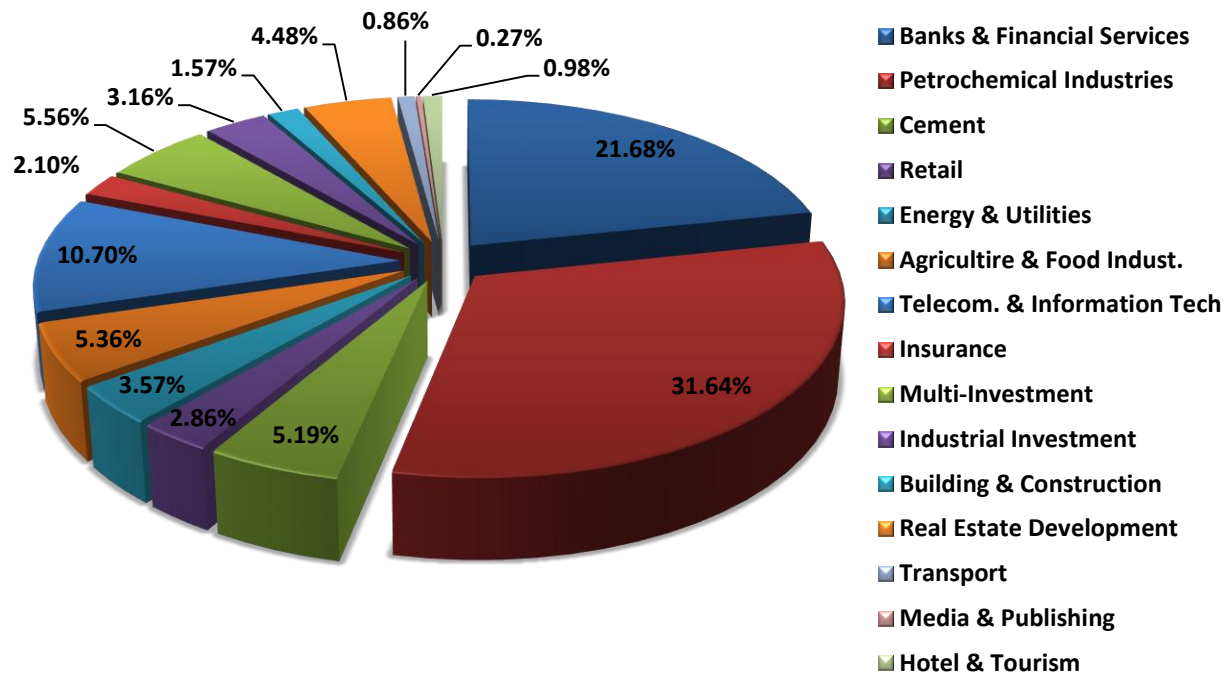
Figure 6: Distribution of free floated shares of all companies (classified by size) as of July 1 2014



Data Source: Tadawul

1.3.3 Market Concentration (Continued)

Figure 7: Distribution of Market Capitalization by Sectors as of December 2013



Data Source: Tadawul

1.3.4 Restrictions on Short Selling

- Short selling in Saudi Arabia is restricted.
- The debate on short selling of securities is not new.
- **First View:**
 - Increases informational efficiency
 - Brings prices to their fundamentals
- **Second View:**
 - Increases market risk

1.4 Do Saudi stock market values reflect their fundamentals?

- In the following we are going to introduce a new index that measures the extent to which the overall stock market is over, under, or correctly valued
- This index provides an early warning to a possible market crash.

2. Research Method

- The composite-error model

$$R_{it} = \alpha_i + \beta_i R_{mt} + v_{it} + u_{it} \quad (1)$$

where,

R_{it} and R_{mt} are period t returns on security i and on the market portfolio, respectively.

v_{it} is a white noise error term; u_{it} is a systematic error term that represents the misvaluation in the security i at time t .

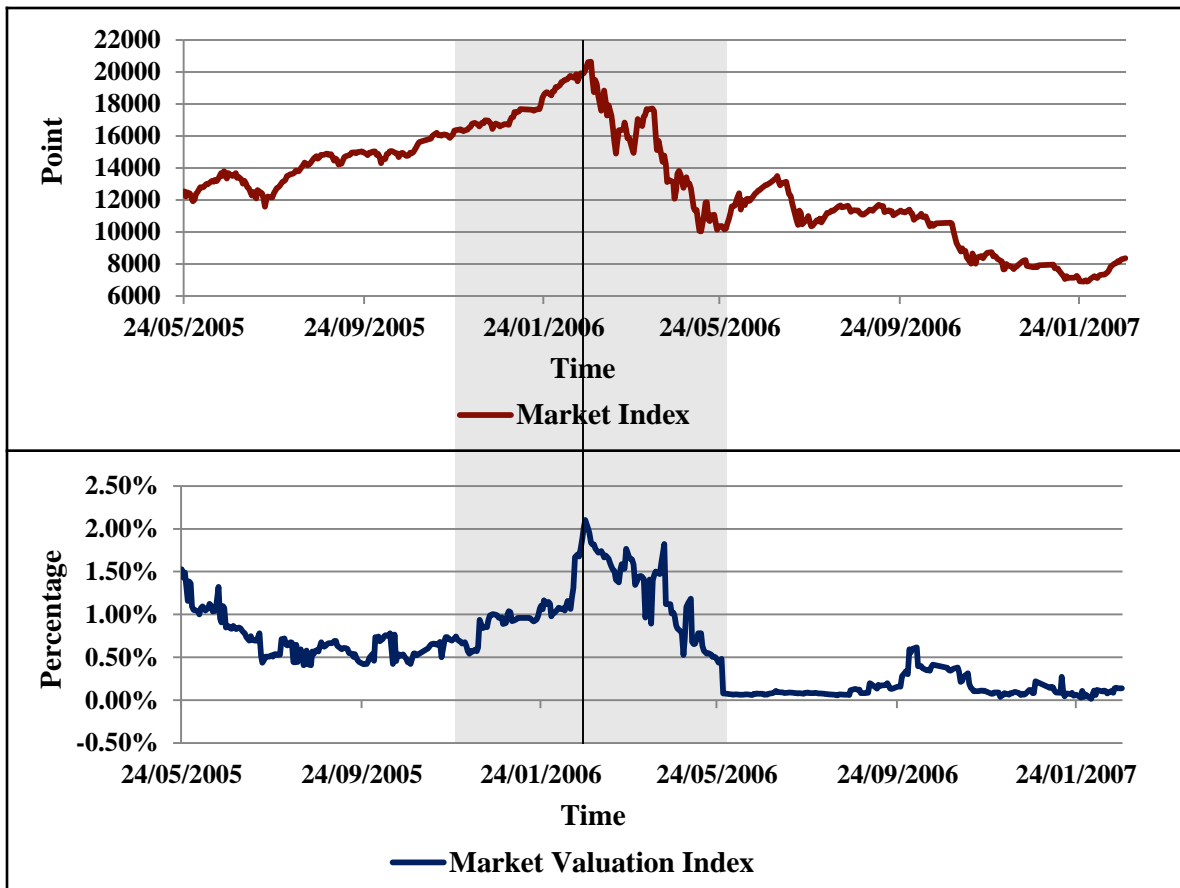
- If the return of security i at time t is overvalued, then $u_{it} > 0$.
- If the return of security i at time t is undervalued, then $u_{it} < 0$.

2.1 Market Valuation Index

- **First:** For each company, I obtain the Security Valuation Index (SVI), which is a weighted average of the error term u – positive for overvaluation, negative for undervaluation, and zero if correctly valued.
- **Second:** I obtain a moving average of SVI by shifting the estimation period backward by one day at a time.
- **Third:** I obtain the Market Valuation Index (MVI) by assigning a weight for each SVI_i based on company i 's market weight and then sum over all securities.

3. Empirical Results

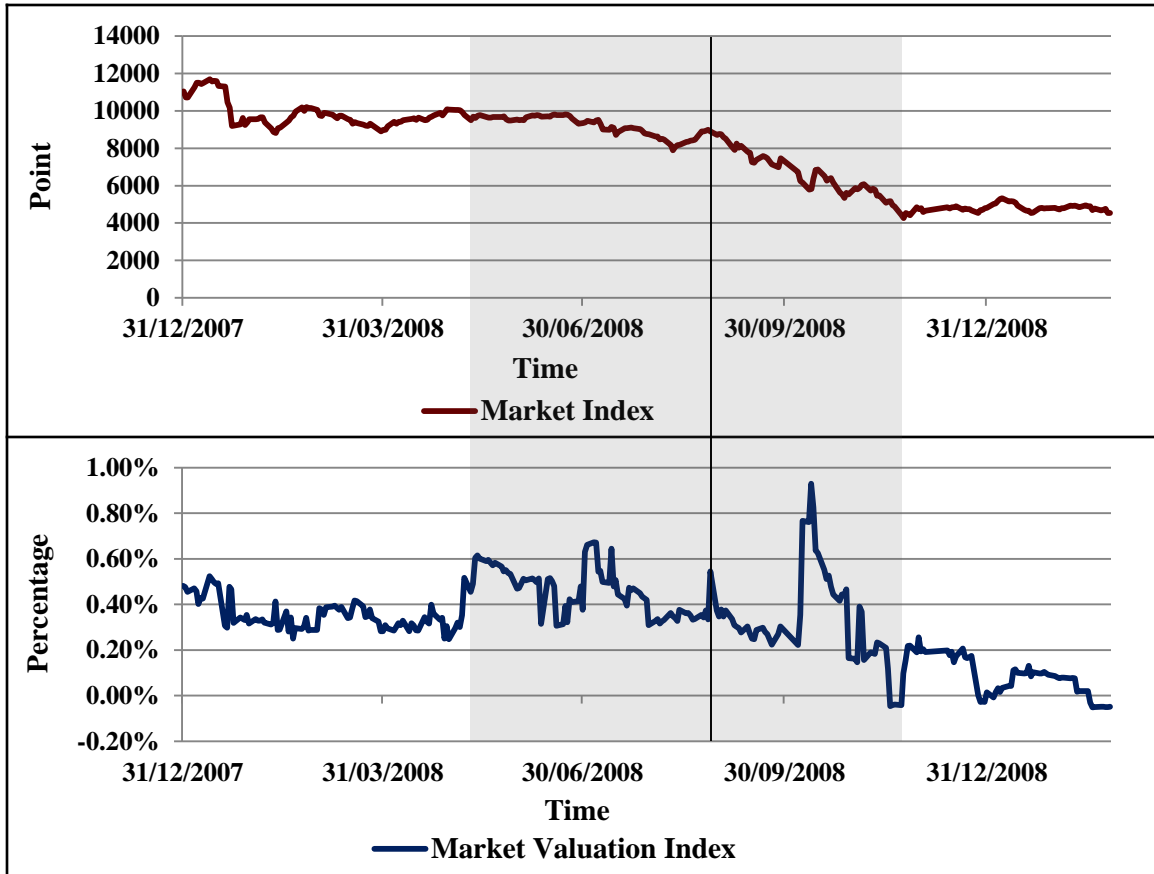
Figure 8: Market Index and Market Valuation Index (Feb 2005-Feb 2007)



Data Source: Tadawul

3. Empirical Results

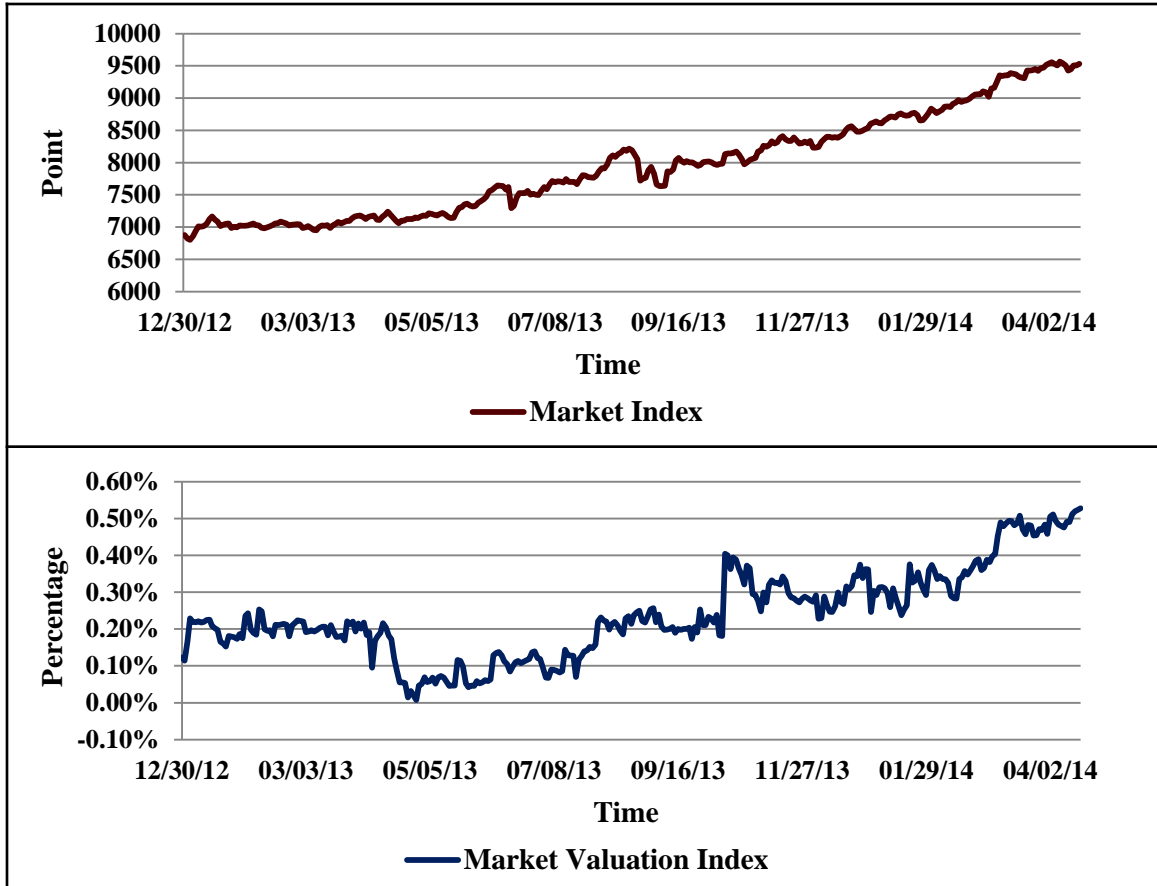
Figure 9: Market Index and Market Valuation Index (Feb 2007-Feb 2009)



Data Source: Tadawul

3. Empirical Results

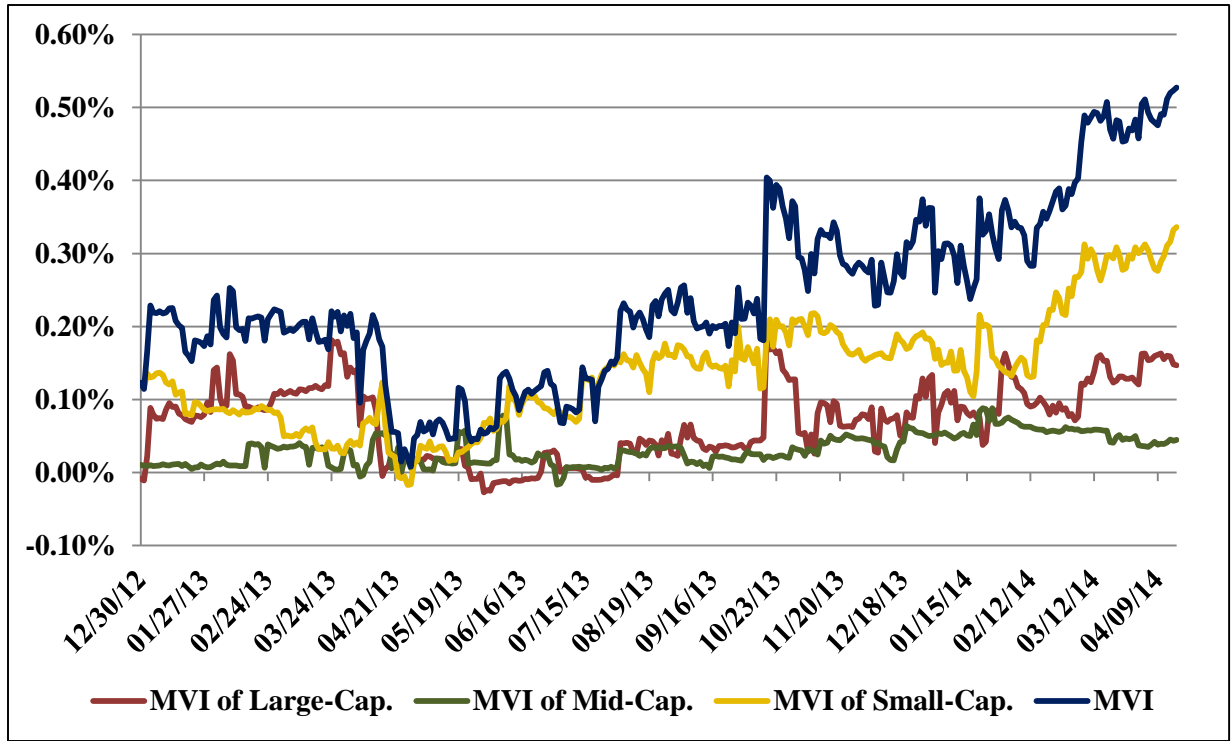
Figure 10: Market Index and Market Valuation Index (Jan 2013-April 2014)



Data Source: Tadawul

3. Empirical Results

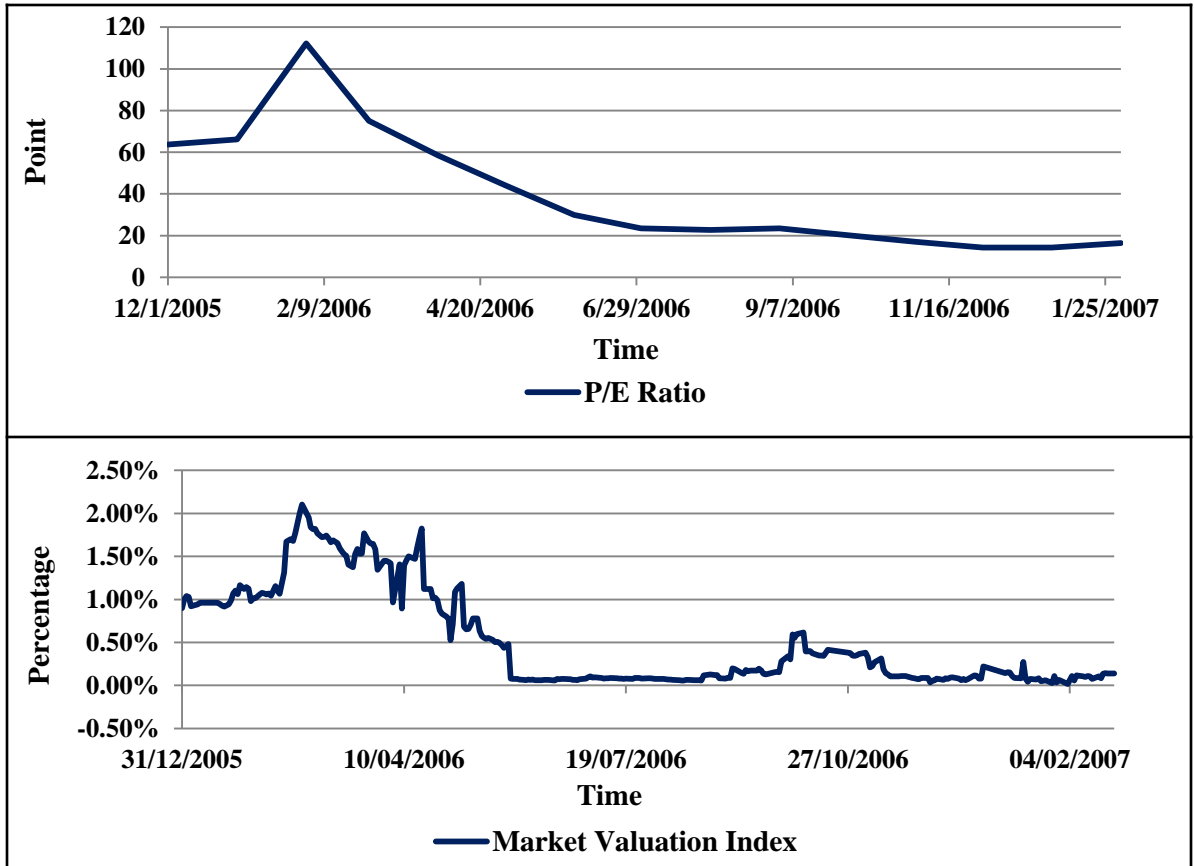
Figure 11: Market Misvaluation Classified by Company Size



Data Source: Tadawul

3. Empirical Results

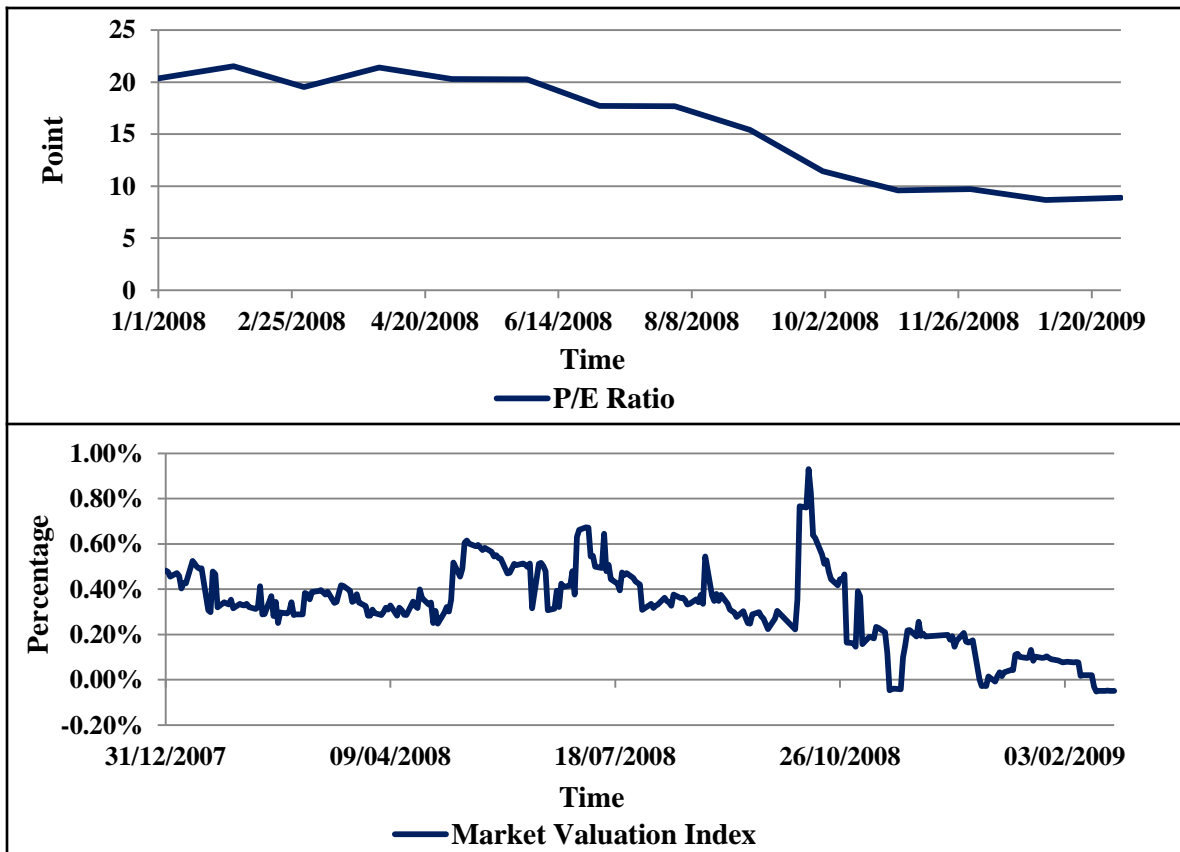
Figure 16: Price-Earnings Ratio and Market Valuation Index (2006-2007)



Data Source: Tadawul

3. Empirical Results

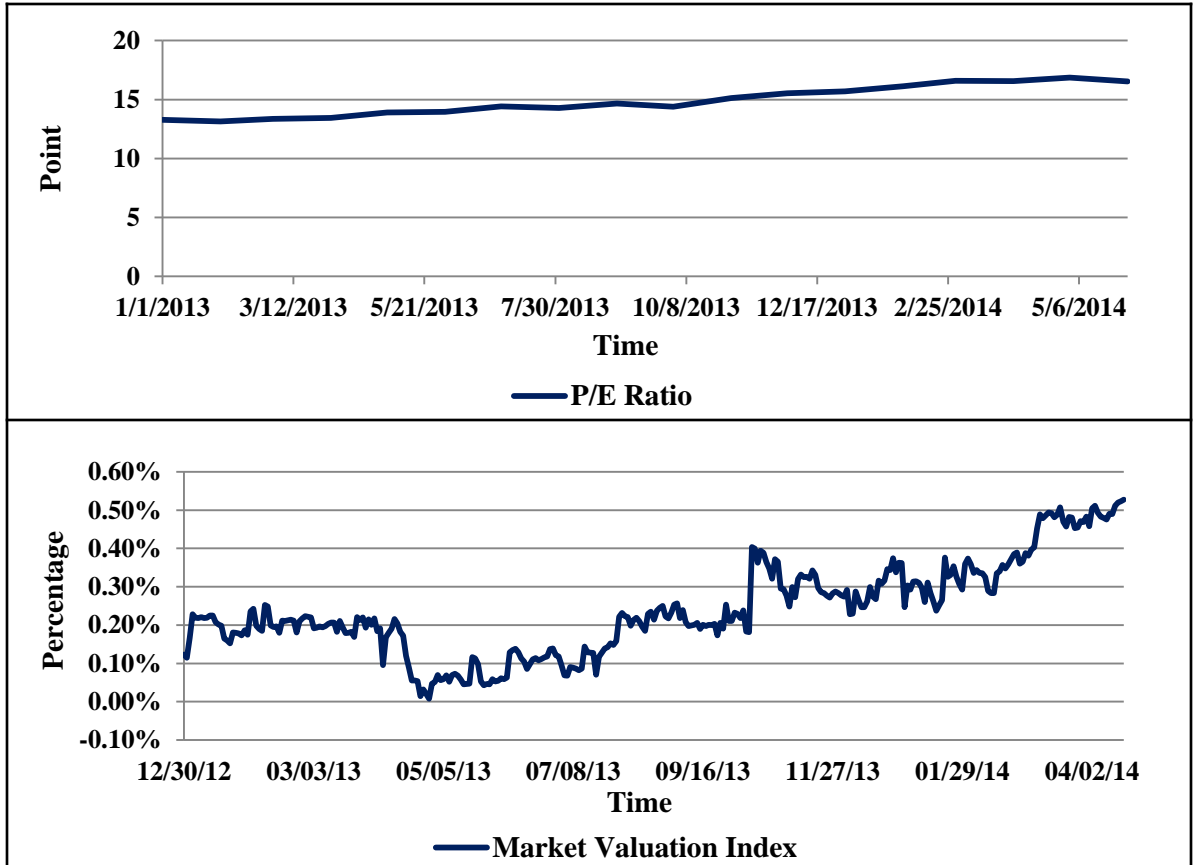
Figure 17: Price-Earnings Ratio and Market Valuation Index (2008-2009)



Data Source: Tadawul

3. Empirical Results

Figure 18: Price-Earnings Ratio and Market Valuation Index (2013- 2014)

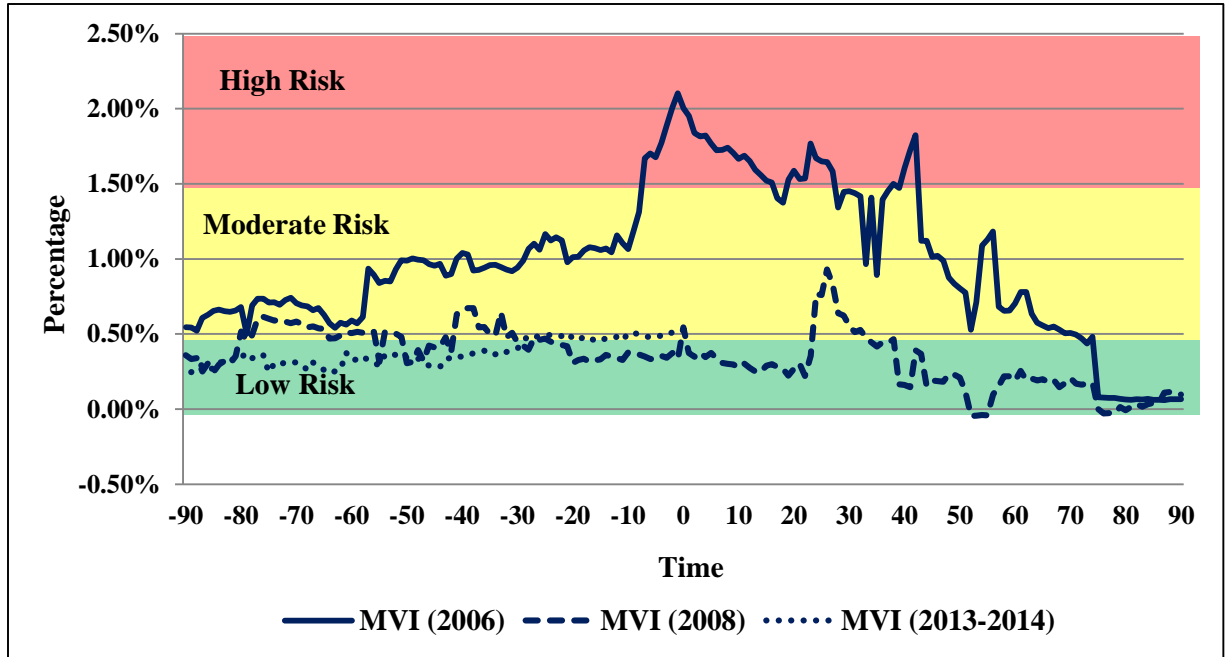


3. Empirical Results

- **Policy recommendations (Conventional & Unconventional)**
- **Conventional:**
- Increase market participation by institutional investors.
- Develop a framework to allow qualified foreign institutional investors to directly invest in the market.
- Reduce market concentration.
- Develop a framework for investors to short sell securities.
- **Unconventional:**
- Introduce the MVI as a valuation indicator.
- Construct a valuation targeting policy.

3. Empirical Results

Figure 19: Market Valuation Index during different periods



Data Source: Tadawul

4. Conclusion

- The results are consistent with our expectation that there is a positive misvaluation during the period before a market downturn and zero or negative misvaluation during the period after the downturn.
- The results show that the Saudi stock market is becoming increasingly overvalued overtime.
- Using the previous two downturns as a benchmark, this level may bring moderate risk in the future.
- However, the suggested benchmark is based on only two historical events and may not be accurate.