

---

Does momentum effect exist under financial crisis?  
-----a basic research in Canadian stock market

by Chun Gu

A research project submitted in partial fulfillment of the  
requirements for the degree of Master of Finance

Saint Mary's University

Copyright Chun Gu 2013

Written for MFIN 6692.0 under the direction of Dr. F.  
Boabang

Approved: Dr. F. Boabang  
Faculty Advisor

Approved: Dr. F. Boabang  
MFIN Director

Date: September 10, 2013

---

## Acknowledgements

I would like to express gratitude to Dr. Boabang for the help and the suggestion given to me during the period I worked on this project. I would also like to thank the MFIN department for permitting me to use all of their accessible data. Lastly, I would like to express my appreciation to my family .Without their support, encouragement, and patience, I would not have been able to complete this paper so successfully.

---

Abstract

Does momentum effect exist under financial crisis?

-----a basic research in Canadian stock market

by

Chun Gu

September 10, 2013

Momentum effect is a market anomaly. It indicates that past winners in the stock market keep over-performing past losers over the short run namely, one to twelve months. The purpose of this paper is to examine whether the momentum could exist during the time of financial crisis. With a sample which includes stocks from the Toronto Stock Exchange (TSX) from March.03, 2007 to April, 04, 2008, we conclude that the momentum effect is not significant in Canada stock market in that period of time. Meanwhile, this paper offer reasonable explanation for the disappearance of momentum effect, including information symmetry, market state and confirmation bias.

---

## Table of Contents

Acknowledgments.....	ii
Abstract.....	iii
Table of Contents.....	iv
List of Tables.....	iv
Chapter 1: Introduction.....	1
Chapter 2: Literature Review.....	6
Chapter 3&4: Data and Methodology.....	13
Chapter 5: Conclusions and explanations.....	26
References.....	30

## List of Tables

Table 1 stocks selected.....	18
Table 2 T-test Result.....	22
Table 3 stocks selected 2.....	22

---

## Chapter1

### Introduction:

Existence of momentum effect is a market anomaly. It indicates that past winners in the stock market keep over-performing the past losers over the short run namely, one to twelve months. The momentum effect is a new area for finance theory. It started being labeled as an anomaly to Capital market efficiency. The most interesting part is that everybody wants to earn abnormal return from momentum strategy. Meanwhile, other opinions state that the momentum effect does not exist. They argue that the effect can be attributed to other factors such as size, systematic risk and asymmetric information.

DeBondt and Thaler first found that past losers outperform past winners over a relatively long period, 3 to 5 years in common. This has been referred as the reversal effect.

Jegadeesh and Titman (1993) found the momentum effect which indicated that past winners continuously outperform the past losers on average returns in the next three to twelve months .In other words , the momentum strategy can be applied in a short

---

horizon. Jegadeesh and Titman explained this phenomena as” cognitive bias”, meaning that, it arises from market under-reaction to the release of firm-specific information, whereas Daniel, Hirshleifer, and Subrahmanyam(1998) argue that momentum stems from over-or-under reaction from market.

Later on, this finding has been examined by Prihar and Schmit (1994/1995) in Canada from 1978-2003. Momentum effect has also been found in European stock markets in 12 countries, promoting the effect to the international market. (Rouwenhorst 1998)

Quantitative analysis has been developed to explain momentum effect. Fama and French (1996) explained intermediate-horizon price momentum based on a three-factor model of returns. Conrad and Kaul (1998) attribute the momentum effect to the cross-sectional variation in the mean returns of selected securities. Louis and Josef (1999) measure the profitability of momentum strategies based on past return.

Prior researches were also looking for different factors that affect momentum effect. Hong and Stein (1999) find that momentum is consistent with the gradual diffusion of firm-specific information hypothesis. Charles and Bhaskaran(2000) find evidence suggesting that at least a portion of the initial momentum gain is better characterized as an overreaction and study the relationship between momentum effect and trading volume and state that the trading volume affects the time horizon of momentum effect. Further, Charles and Bhaskaran(2000) state that the information from past trading volume can be useful in reconciling intermediate horizon “underreaction” and long-horizon “overreaction” effects. Doukas and McKnaght(2005) compare the

---

influence of size and information coverage to the momentum effect. So many studies have been presented to discuss about the fact of momentum effect, providing alternative explanations such as book-to-market, analyst coverage and industry average index.

Although previous studies promote a lot to prove the existence of momentum effect in stock market, such kind of research is still in early stages of providing strong evidence. On this purpose, Chandrapala (2012) examined whether the momentum effect exists in different states of the market and uncovered that states of the market are not associated with existence of momentum effect. In other words, momentum effect exists regardless the fact of the state of market.

Financial crisis comes in 2007 and 2008. America lost more than a quarter of their richness. The S&P 500 declined from its peak by 45 percent. In America, Total home equity which was valued at \$13 trillion in 2006 dropped to \$8.8 trillion by mid 2008. During the same time, savings and investment assets lost \$1.2 trillion and pension assets lost \$1.3 trillion. In all, these losses reach a total of \$8.3 trillion. (Roger, 2009)

From 2007 to 2008, stock market in the world suffered a loss of total 7.7 trillion. The speeded-up of GDP in America decreased from 2.9% to 2.2%. Institutions started and kept lowering the rate of all the indicators. For example, IMF forecasted a 1.9% growth rate, decreasing from 2.8%.(wikipedia.org)

---

Moreover, the International Monetary Fund forecasted American and European banks to earn a loss of almost \$1 trillion because of bad debts and toxic assets by the half year in early 2009. These losses are estimated in a total \$2.8 trillion in 3 years later from 2007–10, specifically, \$1 trillion for American banks and \$1.6 trillion for European bank. The IMF estimated about 60 percent loss for American banks whereas British and Eurozone banks only 40 percent. (Bloomberg ,2009)

It is basically the same place for the investors. When in a bullish market, investors always intend to earn more profit than in a bearish market. However , during the period of financial crisis, the structure of participants also changes. Generally, winners tend to appear more often in a bullish market than a bearish market because the bullish market is easy to “win” in. Furthermore, it is stricter to invest in a bearish market. More often than not, the challenge comes that few stocks in the market perform well .Based on this fact, one might ask questions whether the momentum effect does exist during the financial crisis? If it does , then the association from market state with momentum effect should be recognized ,which indicates the former study of momentum effect and market state is wrong. If it does not , that may come up with a second thought about why the momentum strategy cannot be used in the financial crisis. Why achieving abnormal return by momentum strategy is not supposed to happen with the respect to the economy crisis.

Other questions are “How can we use the momentum strategy during financial crisis?”,”How strong is the market influence on the momentum effect?”,”Will the



---

momentum effect last or re-appear in the market after financial crisis?”and “Is the momentum effect more stronger or weaker under financial crisis?”With several questions above, this topic is worth to study and the consequence of the study should be emphasized.

In this paper, the study of momentum effect is gradually moving in to these main questions, along with our thought of the usage of momentum strategy in the background of financial crisis, and also trying to find some proposal from the result and making advice under the recent sovereign debt crisis.

---

## Chapter 2

### Literature Review

Momentum effect acts as a phenomenon that past winners continuously outperform past losers in a short horizon. In other words, winners remain winners and losers with respect remain losers in a relatively short period. The momentum strategy is labeled as a strategy that one follows the past winners performance while investing oppositely based on the performance of the past losers.

Jegadeesh and Titman (1993) first uncovered this effect in their paper. They stated that stocks that perform best over 3 to 12 months tend to maintain the level of their performance in the subsequent 3 to 12 months. But momentum effect is hard to describe under a concept of risk-based asset pricing paradigm. When performing a zero-cost momentum strategy of electing stocks according to their returns over the last 12 months and then holding the portfolio for another 3 months, one can successfully earn a 1.31% excess return per month. And the return of earnings from 6-month formation period excess 1 % per month with the regardless of that holding period

---

With the development of money management, momentum effect has been increasingly recognized and more and more participants operate in the market based on momentum strategy. For instance, Grinblatt, Titman and Wermers (1995) and Chan, Jegadeesh and Wermers (2000) find that mutual funds tend to follow the performance of past winners and sell the stocks of past losers.

Also, Womack (1996) states that most of the analysts intends to recommend high momentum stocks more than low ones. Momentum strategies are getting popular from financial institution, academic paper and investment market. Moreover ,Jegadeesh and Titman (2001) proved that applying a momentum strategies can earn profit in the nineties, a period of time following the sample in the study of Jegadeesh and Titman (1993) (Narasimhan Jegadeesh,2011)

When studies extend the momentum effect to the international market, many evidences prove that momentum effect still happens. Rouwhenhorst(1998) enlarge a data sample to twelve countries in Europe and reports that the momentum effect ,which uncovered by Jegadeesh and Titman(1993) for the U.S market ,also exists in the European markets. However, another research, which comes from Titman and Wei (2000), shows that the momentum effect doesn't appear in the Japanese market. Although samples of several individual countries do not present a nature of momentum effect, a research paper by Chan, Hameed, and Tong (2000) provide evidence that momentum effect exist in the international stock market indexes.

---

Shen and Sharma test the momentum effect in 18 developed stock markets from country indices .Nijman and verbeek (2010) examined 18 European countries based on return of individual security and discover positive profits of momentum strategy .

In addition, Jegadeesh(2001) offers an overview of the evidence on momentum strategies and lists some of the potential causes of momentum effect and behavioral explanations for these facts, which have implications for returns in long horizon and the cross-sectional difference for the momentum portfolio..In Jegadeesh and Tlitman (1993) , Lee and Swaminathan(2001) , Nijman and Verbeek(2001) ,and Chui, Timan and Wei(2000) s' papers ,they are likely to separate to 2 time period : formation period and holding period. The relative strength portfolios are formed based on formation period (J) and holding period (K) for the different strategies as indicated in the first column and row, respectively with samples from January 1965 to December 1989.( Jegadeesh and Titman ,1993). The stocks are basically ranked in ascending order in the early formation period J and export as outcome. Moreover ,in several researches discussed above ,one common thing is that researchers tend to impose one month time lag between end of portfolio formation period and beginning of holding period. When there is a one-month lag imposed between the formation and holding period, the momentum effect has been shown to increase. The explanation is to prevent a potential micro structure biases and other trading problem, for instance, bid-ask spread.(Jegadeesh and Titman 1993)

---

Furthermore, Cooper, Guierrez and Hameed(2004) examine the impact of market states on momentum effect. In their research, positive(negative) market states links with positive(negative) market returns in the early formation period. They have found that monthly returns using momentum strategy leads to about 0.93 percent in the up market and about -0.37 percent in the down market. When approaching weekly data from Taiwan stock Exchange from 1997 to 2006, the profitability of momentum effect has been proved in a positive relationship with market state.(Wang et al,2005).Antonios and Patricia (2006) state in their paper that profits of momentum effect are more significant in bear markets.

In addition, Chandrapala (2012) examined existence of the momentum effect from 1995 to 2008 at Colombo Stock Exchange, which is one of the rapid-growing emerging markets in the world. In this paper, one interesting finding is to provide evidence for spreading the momentum effect to developing countries markets. Prior researchers have agreed that average stock returns are related to past performance and that cross-section of stock returns is predictable based on past returns. History data in developing countries provide the strong evidence of existence of momentum effect. In addition, the impact of states of the market on the profitability momentum effect has been examined and the momentum profits are shown to be significantly positive in the down market but not significant in up-market.

In contrast, Michael J. Cooper and Allaudeen Hameed(2005) test over-reaction theories of short-run momentum and long-run reversal effect in the cross-section of

---

stock returns. According to the cross-section profiles from 1929 to 1996, the momentum profits are proved to be depend on the state of the market .The mean monthly momentum profit following positive market returns is 0.93%, whereas the mean profit following negative market returns is  $-0.37\%$ . The up-market momentum reverses in the long-run.

Though American is at the root of the financial crisis, almost all the capital markets in the world are being affected. Apparently most stock indexes lost a lot of ground over these years .federal bond rates are falling and most currencies are depreciating against the U.S. dollar. Uncertainty and loss of confidence become huge problems .Besides, worries are spread and the economic overlook keeps going down for the United States and the rest of the world.

According to Benoit (2008). World Economic Forum ranks the soundness of Canada banking system the first over the world. It is reasonable to believe the default risk and the possibility of bankruptcy in Canada happen to be very low thanks to the special bank system. What's more, Canada doesn't set investment banks as the major institutions providing services both to individuals and business. financial institutions in Canada are in a much better position than in American and European with high requirements of indebtedness. According to information from the governor of the Bank of Canada, major Canadian banks have an average asset-to-capital ratio of 18, which indicates that a great portion of assets are owned by the bank and thus more safety.

---

Though several points are listed above, one cannot deny the impact from U.S financial crisis on Canada. For several reasons: first ,all Canada's biggest trading partner is the America. According to statistic, 80% of Canada's exports rely on American market. If this giant consumer get collapsed, Canadian economy will hurt as well from huge loss of exports. Soon, it will lead to a situation of job losses, higher unemployment. In this kind of cycle, at last, the stock market of Canadian will be hurt, in some level, and lead to a great fluctuation.

Momentum effect is considered as a controversy topic. Especially whether the existence of momentum is associated with the state of market is debated by several researchers and they haven't built a final agreement yet. In Chandrapala (2012)'s paper , he states that the profitability of momentum effect is regardless of the market states..In other words, momentum effect exists regardless the fact of the state of market.

An weakness of Chandrapala finding is that the paper used the data from 1995 only to 2008, which is admitted by the researcher in the end of the paper .This study has not covered the financial crisis period .And the author pointed out that the study of momentum effect in financial crisis is important, interest as well. When introducing the data under financial crisis, it is like open a new door for the study because when come to specific new situation , the performance of momentum should be recognized and when the market is suffering huge loss, it is more likely a good chance to examine the extension of momentum effect.

---

The main target of this paper is trying to answer the question asked above: does the momentum effect exist in the financial crisis? If it does , than the association from market state with momentum effect should be recognized ,which indicates the former study of momentum effect and market state is challenged. If not , that may come up with a second thought about how to use the momentum strategy in the financial crisis. Can abnormal return be achieved with no respect to the economy crisis? Keeping these questions in mind , this paper will examine the existence of momentum effect under financial crisis and try to look for good answers. What should be noticed is the study of momentum effect using data from a time horizon including the whole period of financial crisis is lacked now .And the result of this study is still be blank recently.



---

## Chapter 3 &4

### Data and Methodology

Toronto stock exchange (TSX) is the largest stock market in Canada and the third largest in North America. In this section, to study whether there is a momentum effect in Canada stock market, this paper considers the TSX as the best choice. The sample selected consists of all the firms including in the TSX during the period of Financial crisis. Then reason this paper doesn't consider U.S stock market, for instance, S&P and Dow Jones Indexes is that the financial crisis started from American and soon spread to every corner in U.S. All of the companies were involved in the financial crisis in a sudden and had no choice but suffer a huge loss. In no more than a month, the market evaporated millions of dollar. In this situation, individual stocks are not possible to perform with the regardless of others and the market. In other words, the stocks in the U.S market had a problem of correlation. While the Canadian stock market was not impacted by the financial crisis as much as American and thanks to

---

the different financial principle, the Canadian stock market was more stable and safe in that period of time. That is why this paper considers Canadian as the best choice.

To gather our data more accurately, this paper removed the stock which was initially lower than one dollar or had a huge percent change in that period (larger than 100%). Considering whether it to be our sample, a stock should provide available information on capital equity, historical prices, trading volume, and return yields.

By examining the profitability of portfolios, this paper applied strategies selecting stocks based on their returns over a period of time. After computing monthly stock returns, this paper also considered formation periods to elect the best-performed stocks (winners) and the worst-performed stocks (losers) in two quarters and examining the momentum effect in these two categories in holding period which is set to be another two quarters.

At the very beginning, this paper computed the monthly return. The sample used is mainly consisted by individual stocks. The method we get monthly return is shown below.

$$R_{i,t} = \frac{P_{i,t} - P_{i,0}}{P_{i,0}} \times 100 \quad (1)$$

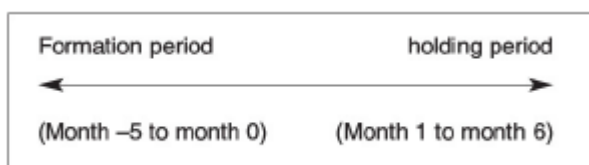
- $R_{i,t}$  = Capital gain returns of the  $i^{\text{th}}$  share in the month  $t$ .
- $P_{i,t}$  = Price of the  $i^{\text{th}}$  share at the end of month  $t$ .
- $P_{i,0}$  = Price of the  $i^{\text{th}}$  share at the beginning of the month  $t$ .

---

To make data more specific and convincing, this paper excluded the effect of right issues, stock dividends, and any financial derivatives issued by adjusting the sample monthly return by the end of every month.

In addition, this paper set one month lag between the portfolio formation period and the holding period. By skipping a month, some of the bid-ask spread, price pressure, and lagged reaction effects can be avoided according to the research by Jegadeesh (1990) and Lehmann (1990).

To be more specific, in any given month  $t$ , this paper correspondingly set a period of the previous  $K - 1$  months as the holding period. Then this paper selected stocks based on returns over the past  $J$  months and holds them for  $K$  months (as defined to be  $J$ -month/ $K$ -month strategy). In this paper, all the stocks are listed in the stock market and are ranged from up to low according to their returns. This paper elected the top ten as the "winners group" to the last ten as the "losers" group and range the rest in the same manner. Thus, this paper performed a strategy to buy the winners and sell the losers for  $K$  months.



---

Moreover, the background here is considered to be important because this period of time is totally different from any others. Financial crisis started from 2008, just after several market got its peak in late 2007, after that the world's stock market suffered a huge decline over 16 to 17 months. And this paper will study the momentum strategy in just this period of time to see whether the effect existed or not in financial crisis. In the background of financial crisis, the information is almost the same to all of the investors participating in the market and market was near collapse. The price of stocks kept going down and down . Hence, this paper can't even expect a positive or good return from the whole market and the question becomes: regardless of transaction fees and emotional trading in the market , can momentum strategy make us loss less?

From what have been studied and presented by previous researchers, they plant strategies starting from month  $t - K$  and rebalanced equal weights every month. The return was said to be very close from a series of portfolios that were rebalanced to the portfolios of buy and hold. Since the major project is to study the strategy in financial crisis and from the fact discussed above , this paper just applied a buy&hold strategy here to study it.

---

The portfolios are created by the rank during J-month. After one month lag, this paper seek the different category of returns and held for K months. The numbers of returns of J and K in different category are shown from the top to the bottom, respectively. The stocks are ranged by J-month returns in an ascending order. To be more specific, the least return, in this case , the most loss portfolio is set to be the sell portfolio .And an equally weighted portfolio which had the least loss is set to be the buy portfolio. The main idea here is not to earn profit by this strategy but instead, to avoid loss in financial crisis. And in order to prove the existence of the momentum effect, this paper set our time horizon just from half year before financial crisis, and after one month lag, to half year after financial crisis happened. By adding up an one-month lag ,this paper supported a responding period of time for all the stocks to react to the situation of financial crisis. Thus , the data of stocks is more stable and we avoid some of the bid-ask risk and trading problems.

After that , this paper computed average monthly return for several time period :

$$\bar{R}_i = \frac{1}{n} \sum_{t=1}^n R_{i,t}$$

That may provided a series of returns during each period J and K. Therefore ,this paper set the several equally weighted portfolios in accordance with ascending the order of these returns.

---

This paper assumed T1(tier one) as the toppest series of portfolio in the total rank and carry the most profit return, in other words, the winners. And the last tier carry the least profit or losing the most, in other words, the losers. In our assumption, we buy and hold winners and short sell the losers based on the momentum strategy. And as what has been mentioned above, a month lag is required to eliminate some noise for the statistical test, thus increase the power of the result.

Along with the horizon of the time period, this paper perform the momentum portfolio in the way discussed above. And when considering how to examine the existence of momentum effect. This paper set hypotheses which calculate the winners return minus the losers returns to see if it is positive or not. From the data, this paper already gathered all of the tiers including from the winners to the losers. Hence, this paper imposed the null hypothesis ( $H_0$ ) and the alternative hypothesis ( $H_1$ ) as follows:

$$H_0 : E(R_{W,t+K} - R_{L,t+K}) = 0$$

$$H_1 : E(R_{W,t+K} - R_{L,t+K}) > 0$$

where  $R_{W,t+K}$  indicates the return of winners

$R_{L,t+k}$  indicates the return of losers

K: holding period

---

From the null hypothesis, this paper provided the indication of two equal value of returns from winners and losers. This paper deducted from the return of winners to the return of losers , regardless whether it is positive or negative . And thus this paper obtained the actual t-value for testing of significance . From the result of t-value, the existence of momentum effect can be told. The t value is measured as follows:

$$t = \frac{E(R_{W,t} - R_{L,t})}{\sqrt{Var(W - L)_t / n}}$$

After processing all the data in to Stata and perform the t test for all the data this paper concluded the result as follows:

T winners	R <sub>W</sub>	T Losers	R <sub>L</sub>	R <sub>W</sub> -R <sub>L</sub>
2.03	-0.00976	3.12	-0.47208	0.512122
15.65	-0.47182	3.8	0.206349	0.466588
10.88	0.302994	6.03	0.418824	1.21454
4.8	0.016949	3.68	-0.47429	0.822262
2.4	-0.11111	8.03	-0.26867	0.502778
6.63	-0.22547	1.19	-0.33146	0.64341
17.62	-0.24019	0.58	-0.35556	0.71095

12.68	-0.45673	14.43	0.464975	0.479407
5.51	1.03321	0.87	-0.08421	1.893019
3.43	-0.10909	6.5	-0.09091	0.666232

(table 1 )

One-sample t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
R	10	.0716018	.1833327	.5797488	-.3431255	.4863292

mean = mean(R) t = 0.3906  
 Ho: mean = 0 degrees of freedom = 9

Ha: mean < 0 Ha: mean != 0 Ha: mean > 0  
 Pr(T < t) = 0.6474 Pr(|T| > |t|) = 0.7052 Pr(T > t) = 0.3526

(table 2)

Table 1 presents the relative price from the winners group and losers group. From table 1 ,this paper obtained a combination of negative and positive returns in either group but a total positive result in the deduction from the winners to the losers.

From the result ,this paper can easily stated that the  $H_0$  should be rejected with the respect of the low t value. In addition , the relationship of the return from table in both winners tier and losers tier is not significantly similar. this paper is not likely to expect to imply a strategy in such situation.



To imply a momentum strategy with the market situation, especially in the time of financial crisis, selected data is listed from top to bottom to pick winners and losers.(See from table 3)

Table 3 lists the data in Sep. 04.

P winners	RW	P Losers	RW
2.01	0.970588	10.11	-0.54797
23.41	0.963926	7.62	-0.55118
6.26	0.962382	0.96	-0.55208
4.43	0.934498	2.92	-0.55479
2.89	0.926667	18.78	-0.5623
7.44	0.869347	3.94	-0.59898
18.33	0.860914	2.65	-0.62264
23.22	0.809821	27.1	-0.64871
2.96	0.772455	3.08	-0.65584
3.86	0.770642	31.19	-0.72908

(table 3)

By comparing the simple strategy which indicates the buy&hold with the momentum strategy, this paper showed an average return of - 2.71% in tier one (winners group) and an average return of -9.87% in losers group in the momentum strategy. But still,

---

this paper can't announce that there exists the momentum effect based on the result of t test. The result of the test is not significant.

It is widely acknowledge that the investors frequently buying past winners and sell past losers caused the waves in returns from the market. Thus the performance lead to a abnormal overreaction of the stock to continue its rising or falling. Though finance theory struggles to explain such effect , more and more evidence pointed such effect has a relationship with behavioral economics, which is against the assumption of rational investors in the classic economics theory. Besides , a conception of cognitive biases was presented by some researchers to explain the momentum effect.

Researchers commonly agree with that the momentum effect explain the past performance of the stock may have an impact on the future price. That is the main idea of momentum effect and makes the returns of the stock more predictable based on momentum strategy. The impact of momentum effect had been proved by Jegadeesh and Titman. But from the different result based on our findings above , this paper seek for some explanation for the non-existence of the momentum effect during the period of financial crisis.

With the assumption of the momentum effect, this paper considered the momentum is caused by an over-or- under reaction from the market. This idea is supported by Jegadeesh and Titman in their study in 1992. So based on these findings , the real

---

question would be : What if the market is confused or the market is orderless in a special period of time?

Then answer will be the over-or-under reaction which is considered to be the main cause of the momentum effect is not exist or at least weaker than before. This evidence support a new and interest finding of the research: which leads the status of the stock in the market, the investors or the condition of the economy.

In financial crisis, it is no doubt that the condition of the economy is so depressing and the market was keep going down all the day. The market status also affected the attitude of the investors. By examining the returns of winners and losers , the rejection of the hypothesis in this paper indicates that the past returns in the market, in the special market condition, is no longer to have an impact on future prices. To explain this situation , this paper concluded several reasons as follows:

First , the information in that period of time had no big difference between public and the private investors no matter who was more professional. This fact made every investors in the market in the same extent . Though these two categories of investors may have totally different strategy to respond the market , the expectation of both investors is basically the same. No one was likely to expect the market to recover so soon in that time .And the public consider the economy to get better in at least one year. The depressed investors made the market even worse and the price of the stocks kept going down. Such a effect may also considered as a invest herding phenomenon.

---

The private investors tend to follow the most investors' performance and expectation in the market. That is why no wonder when the market was suffering from a loss , the investors always made it even worse.

Secondly, though the market is negative and the trend is going down, the difference between the average return of the winners and losers group is still positive. Nevertheless, we reject the null hypothesis of the momentum effect. In other words , abnormal return is not possible to access. The reason for the situation may be concluded as the market influence to the investors. In the financial crisis , the main idea of the investors became to protect their capital instead of gaining profit. It is reasonable for the winners not chasing continuously profit and for the losers to be wise enough to quit the market to avoid their loss. High returns always accompany with high risks. In this case , due to the different purpose of the investors , the performance may be different as well in financial crisis.

This paper concluded the last reason as the confirmation bias which thought to be one of the reason for momentum effect. To the investors , the stocks in the winners group are most likely confirmed as either well-performed stocks or potentially well-performed stock. Investors tend to chasing these stocks , and vice versa. Specifically , people are more intend to believe what happened . However , in financial crisis, when investors saw the market status with their eyes , their consideration of winners group was eliminated. In addition , what we already gather

---

from the data is that almost all the stock not performed well in the financial crisis including the winners group, even earning a negative rate of return. While for some of the investors , they did not consider the extent of the decline on each stock but see the loss on all the stocks. According to the theory of confirmation bias , these investors might believe the stocks would continuously decrease with no respect of different level in the decline.

---

## Chapter 5

### Conclusion & Explanation

This study examine the existence of the momentum effect in a specific period of time, the financial crisis. The result and findings of the study is meaningful as the evidence show no momentum effect in financial crisis. And after examining the momentum effect , the study offer several suppose as reasons to explain the non-existence of momentum effect.

In formal research , the definition of momentum effect which indicates the past winners will continuously over-performed past losers in a short time of period has been presented. Momentum strategy became an important issue supporting the behavioral finance However , when the market is under attack by the miserable environment of both the local and world economy, the existence of momentum had

---

not been proved before. From this study , this paper added convincing evidence to the research of momentum strategy and present creative thoughts of this strategy by analysing the reason of disappearance of momentum effect . This paper proved when there is a crush in the market , the tradition condition of behavior finance would be change and some phenomenon would no longer available in the market. Financial crisis offer us a source to study and examine different theory in the stock market. Thanks to this special period of time , our finding cover some condition of the formal research and offer convincing result for it. In this study, this paper provided rational explanation for the occasion to use the momentum strategy.

This study offer there reason trying to explain for the non-existence of momentum strategy, meanwhile, leaving questions for the future research. For instance, how strong the crush in the market will affect the existence of momentum effect. And how can researchers continuously apply momentum strategy with no preparation of the crisis. It would be interesting and more important for the further research to dig in this area.

---

## References

1. DeBondt, Werner F. M., and Richard Thaler, 1987, Further evidence of investor overreaction and stock market seasonality, *Journal of Finance* 42, 557–581.
2. Kent D; David. H; Avanidhar S. 1998, Investor psychology and security market under-and overreaction, the *Journal of Finance*, Vol.53, No.6 1839-1885
3. Foerster, S., Prihar, A. and Schmitz, J., 1995, Back to the future, *Canadian Investment Review* 7, 9-13.
4. Antonios, A; Patricia, C.S. Momentum profits following bull and bear markets. *Journal of Asset Management* ,2006, Vol.6, Iss.5, pp.381-388. ISSN 1470-8272
5. Roger C. Altman. "The Great Crash, 2008 – Roger C. Altman". *Foreign Affairs*. Retrieved 2009-02-27.
6. Bloomberg-U.S. European Bank Writedowns & Losses-November 5, 2009
7. Narasimhan Jegadeesh ,Market states and Momentum, the *Journal of Finance*, Volume 59, Issue 3, Pages 1345-1365, June 2004



- 
8. Chui, A.; Titman, S.; Wei, K. C. J. Momentum ownership structure and financial crisis: an analysis of Asian stock markets. Working Paper Austin: University of Texas at Austin. 2000
9. Cooper, M.; Gutierrez, R.; Hameed, A. Market states and momentum. *Journal of Finance* 2004, Vol. 59, ISS. 1, PP 1345-1365, ISSN 1540-6261
10. Rouwenhorst, G. K. International momentum strategies explain momentum in Europe. *Journal of Finance*, 1998, VOL 53, ISS. 1, PP 267-284, ISSN 154—6261
11. Fama, Eugene F., and Kenneth R. French, 1993, Common risk factors in the returns on stocks and bonds, *Journal of Financial Economics* 33, 3–56.
12. Conrad, Jennifer S., and Gautam Kaul, 1993, Long-term market overreaction or biases in computed returns? *Journal of Finance* 48, 39–64.
13. Chan, Louis K. C., Narasimhan Jegadeesh, and Josef L. “The Profitability of Momentum Strategies.” *Financial Analysts Journal* 55, no. 6 (1999), pp 80-90
14. Hong, Harrison, and Jeremy C. Stein, 1999, A unified theory of under-reaction, momentum trading and overreaction in asset markets, *Journal of Finance* 54, 2143–2184.
15. Charles M. C. Lee, Bhaskaran Swaminathan, 1998, Price Momentum and Trading Volume, *THE JOURNAL OF FINANCE* • VOL. LV, NO. 5 • OCT. 2000
16. Doukas A. J., McKnight J. P., 2005, “European momentum strategies, information diffusion and investor conservatism,” *European Financial Management*, 11, 313-338.

- 
- 17.Chandrapala P.,Milos K.,MOMENTUM EFFECT AND MARKET STATES:  
EMERGING MARKET EVIDENCE,E+M Economie a Management ,April 1,2012
- 18.Benoit P. Durocher, The impact of the financial crisis in Canada,Economic  
viewpoint,2008 14. Oct. From [http://www.desjardins.com/en/a\\_propos/ etudes\\_economiquesactualites/point\\_vue\\_economique/pve81014.pdf](http://www.desjardins.com/en/a_propos/ etudes_economiquesactualites/point_vue_economique/pve81014.pdf)
- 19.Mark G, Sheridan Titman, R.Wermers,Momentum Investment Strategies, Portfolio  
performance,and Herding:A study of Mutual Fund Behavior,The American Economic  
Review, Volume 85,Issue 5 (Dec.,1995),pp.1088-1105
- 20.Shen,Q.,Szakmary, A.C.,Sharma, S.C.Momentum and contrarian strategies  
internation stock markets:Further evidence. Journal of Multinational Financial  
Management.2005,Vol.15,Iss.3,pp.235-255.ISSN 1042-444X
- 21.Nijman,T.;Swinkels,L.;Verbeek, M. Do countries or industries explain momentum  
in Europe. Erim report series research in management. 2002 .From  
[http://www.irim.eur.nl/ERIM/People/Person\\_Details?aff\\_id=262](http://www.irim.eur.nl/ERIM/People/Person_Details?aff_id=262)
- 22.Cooper,M;Gutierrez,R;Hameed,A market states and momentum.Journal of  
Finance.2004,Vol.59,Iss.1,pp.1345-1365.ISSN 1540-6261