

Analyzing Short Term Momentum Effect on Stock Market of Hong Kong. An Empirical Case Study

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Abstract

Existence of short-term momentum effect is a widely disputed topic. This paper aims to solve the dispute and examine the presence of short-term momentum effect in the stock market of Hong Kong. Empirical results of 16 monthly price momentum investment strategies suggest that short term momentum effect has been found in Hong Kong's stock market and it is overwhelmingly strong. Future research should focus on investigating momentum effect using weekly and daily price momentum strategies.

Key words: momentum strategy, zero cost momentum portfolio, above average return, winner portfolios, loser portfolios

J.E.L. classification: C22, G11, G17, O16, Q01

1. Introduction

Short term momentum effect has long been discussed in financial literature soon after its discovery by Jegadeesh and Titman (1993). It is regarded as a stock market phenomenon that articulates that stocks with highest returns in recent past, called winners, will keep on producing higher returns in future and stock with lowest returns (called losers) in recent past will yield poor returns in future. In short, winner will outperform the losers. According to Jegadeesh and Titman (1993) momentum effect remains in stock returns from 3 to 12 months (stages of 3 months, 6 months, 9 months and 12 months).

Short-term momentum effect has remained a subject matter of numerous empirical studies since 1993. Jegadeesh and Titman (2001), for instance, investigated U.S. stock markets by extending sample period as compared to their previous study and reaffirm the presence of momentum effect. However, they also confirm that momentum effect vanishes when momentum strategy's time expires. Momentum effect is not confined to only U.S. stock markets but also present in 12 European and 20 Asian stock markets (Rouwenhorst 1999, 1998). Likewise, Griffin, Ji and Martin, (2005) also investigated short-term momentum effect in 39 countries all around the globe. Furthermore, Griffin, Ji and Martin, (2003) examined momentum effect under different economic conditions such as down and up state of economy and find momentum effect can be profitable. However, they emphasis that profitability lasts for 3 to 5 years. In short, substantial number of researchers nearly confirms the existence of momentum effect in stock markets around the world. Nevertheless, financial literature on momentum carries number of studies that also refute the existence of momentum effect. Such contradictory studies lead to a horsrace among researchers to further investigate the phenomenon.

The major problem being reflected in financial literature is the conflicting finding of researchers over the presence of momentum effect even in the same stock market. Some prominent studies are of Hameed and Yuanto (2002) and Chui, Titman and Wei (2000) who do not identified momentum effect in 6, and respectively 8 different Asian stock markets including Hong Kong. Moreover Griffin, Ji and Martin (2005) confirm the presence of momentum effect in some of the Asian stock markets including Hong Kong. Momentum effect is also not unanimous in Chinese stock market as Li, Qiu and Wu (2010) find momentum strategies are non-profitable but, conversely, Kang, Liu and Ni (2002) establish momentum effect profitable in Chinese stock market. Momentum effect is also controversial in Hong Kong considering that Chui, Titman and Wei (2000) find minimal momentum effect. However, Chui Titman and Wei (2010) argued that momentum effect is not present in Hong Kong.

It is also important to investigate the existence of momentum effect as it is a violation of the basic principles of efficient market hypothesis (EMH). The existence of momentum effect strengths the viewpoint of opponents the theory of market efficiency. Momentum effect suggests that stock's future prices can be predicated through its past prices own past prices and it is possible to investors to achieve abnormal profit by beating the market. Nevertheless, efficient market hypothesis articulate that investors cannot use information based on securities' own past prices to make an abnormal profit because stock future prices are random in nature and are not affected by previous events (Malkiel, 2003; Malkiel and Fama, 1970).

The paper structure is organised as follows : section 2 discusses literature review, section 3 defines methodology, section 4 highlights the empirical findings of the research analysis and section 6 give concluding remarks.

2. Literature review

Although momentum effect has long been studied and recognised in many stock markets around the world, but its existence and significance have still been subject to many empirical disagreements. The literature review discusses two groups of authors who establish the presence and significance of momentum effect in some emerging and developed stock markets, whereas other group of authors completely deny the existence of momentum effect in the same stock markets. Short-term momentum effect has long been remaining a debating issue in the literature of finance ever since its inception. Jegadeesh and Titman (1993) study the U.S. stock market from 1965 to 1989 and confirm the presence of momentum effect producing 1.49% average monthly momentum returns. They construct winner and loser stock portfolios based their six months cumulative returns. These momentum investment strategies include formation and holding periods where both can be of 3, 6, 9 and 12 months. For example, winners and losers can be formed based on past six months cumulative average returns and held for next six months to earn momentum profits. Jegadeesh and Titman (1993) stated that there are 16 momentum investment strategies producing different level of profitability, but they only calculated J6K6 momentum strategy. As Jegadeesh and Titman(1993) study focus only U.S. stock markets which raises a concern whether same returns continuation effect exists outside the U.S stock market or not.

Momentum effect is also present in Asian and European stock markets since Rouwenhorst (1999,1998) studied this aspect based on several empirical cases. Rouwenhorst (1998) analysed 2,190 firm from 1978 to 1985 and documents that short-term momentum effect also exists into European stock markets such as Austria, Belgium, Denmark, France, Germany, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, and United Kingdom. Author also find that past winner out perform past losers by almost 1% per month in all 12 stock markets and this effect lasts for 12 months. Moreover, these momentum returns are negatively related, but not limited, to small firms. Although Rouwenhorst (1998) study is considered the main evidence of momentum effect but author completely ignore the emerging markets. Rouwenhorst (1999) observe 20 emerging markets such as Argentina, Brazil, Chile, Colombia, Greece, Indonesia, India, Jordan, Korea, Malaysia, Mexico, Nigeria, Pakistan, Philippines, Portugal, Taiwan, Thailand, Turkey, Venezuela and Zimbabwe and confirms the existence of momentum returns in 1,750 firms across 17 out of 20 countries.

Despite of many studies have provided the ample amount of evidence of existence of momentum effect but, on the other hand, there are also numerous studies that contradicts such findings. Chui, Titman and Wei (2001) examined eight Asian stock markets, ie Hong Kong, Malaysia, Indonesia, Taiwan, Korea, Thailand, Japan and Singapore. They find short-term momentum effect in Malaysia, Singapore and Thailand but momentum effect was not present in Hong Kong, Indonesia, Japan, Taiwan and Korea. Due to unavailability of data, they use difference time period for each country such as Japan data starts from 1997 to 2000, data for stock market in Korea starts from 1995 to 2000 and similarly other countries data start from 1998 to 2000.

The existence of short-term momentum effect is further challenged by Hameed and Yuanto (2002) who study almost 1000 firms in six Asian stock markets, comprising of Hong Kong, Malaysia, Singapore, South Korea, Taiwan and Thailand. They find winner minus loser portfolio is not producing significant momentum returns. They concluded that all 16 momentum strategies are consistently insignificant in six Asian stock markets. Moreover, Hameed and Yuanto (2002) stated that momentum effect is the result of data snooping bias. Similarly, momentum effect is not present in Brazil, Indonesia, Australia, Pakistan, Poland, Romania and Turkey (Ornelas and Fernandes, 2008). They re-examine the existence of momentum effect by applying Jegadeesh and Titman (1993) methodology with the exception of taking 25 percent losers and 25 percent winners to form winner minus loser portfolio rather than only 10 percent. They conclude that improvement in information technology and use of internet help information spread across investors with greater speed which wipe out the effect of momentum. But this contradicts the previous studies as previous literature establishes higher momentum effect in developed countries. If higher information technology and use of internet is wiping out the momentum effect, then developed counties should have lower momentum effect as compared to developing countries due to higher use and excess to internet and information.

Momentum effect is not found in Australian stock market (Huynh, Henker and Henker, 2010). Authors study the market from 1993 to 2008 and include listed and delisted companies. The study criticizes the momentum methodology that underestimates the implicit assumption that leads to bias towards momentum effect. Study further finds that momentum effect is not even robust to different sampling periods and establishes momentum effect may be the result of look-ahead bias during sampling process. Although substantial amount of literature on momentum favors existence of significant momentum effect in many countries around the world but there are also many studies that contradict the previous finding specially in the context of emerging markets. The existence of momentum effect in emerging market is not unanimous in research area. Our study aims to reaffirms the existence of momentum effect in Hong Kong stock markets. It is important to reaffirm the existence for Hong Kong because the presence of momentum effect is highly controversial.

3. Research methodology

Hong Kong has one of the fastest and highest growth economies in the world. Moreover, it is one of the Four Asian Tigers along with Singapore, Taiwan and South Korea. Hong Kong is mainly considered an attractive global financial center. According to Hong Kong Exchange, at 31 December 2018 official statistics indicated a number of 2,315 listed companies and \$29.9 trillion total market capitalization which provided a very attractive investment framework.

This research paper includes an empirical analysis applied on an emerging capital market, such as HKEX Stock Exchange of Hong Kong. The selected time period is based on monthly data from 01 December, 2013 to 01 December 2018. Our empirical analysis includes more than 1.500 companies listed on HKEX Stock Exchange of Hong Kong.

The applied mathematical framework used for calculating stock returns based on monthly prices is the following :

$$Returns = (Price_t - Price_{t-1})/Price_{t-1} \times 100$$

where

$$Price_t = \text{Closing Price}_t$$
$$Price_{t-1} = \text{Opening Price}$$

The empirical approach based on short term momentum effect includes the concepts of winner portfolios (W) and loser portfolios (L).

4. Empirical results

This section includes the empirical findings. It also presents the discussion on results and their interpretation. Table 1 below shows returns results of monthly short-term price momentum investment strategies.

Table no. 1: Returns of Monthly Price Momentum Strategies

Returns of Monthly Price Momentum Strategies						
		Holding Period (K)				
Formation period (J)		3	6	9	12	
Winner (w)	3	68.69437	68.84897	68.67768	68.12286	
Loser (l)		-27.7405	-28.0851	-28.3808	-28.6241	
Winner- Loser (w-l)		96.43482	96.93404	97.05849	96.74693	96.79357
(t-stat)		27.1797	31.2338	33.1968	34.6436	
Winner (w)	6	49.84397	50.69533	50.96529	50.9294	
Loser (l)		-20.1162	-20.6657	-21.1006	-21.426	
Winner- Loser (w-l)		69.96021	71.36099	72.06584	72.35536	71.4356
(t-stat)		21.1882	21.4092	21.9561	22.386	
Winner (w)	9	41.08131	42.15737	42.66672	42.75842	
Loser (l)		-17.1469	-17.8238	-18.3482	-18.8301	
Winner- Loser (w-l)		58.22826	59.98113	61.0149	61.58851	60.2032
(t-stat)		16.89718	16.6151	16.7928	17.01	
Winner (w)	12	36.19192	37.44487	38.09013	38.41374	
Loser (l)		-15.5032	-16.1906	-16.7869	-17.295	
Winner- Loser (w-l)		51.69515	53.63546	54.87698	55.70872	53.97908
(t-stat)		14.7641	14.4084	14.4906	14.6486	

Source: Authors' computation

It is extremely important to explain the table before discussing its findings. The second row of Table 1 displays the holding period (K) where third row shows the number of months for holding period of a portfolio i.e. 3, 6, 9 and 12 months. Table 1 exhibits seven columns as well. First column from the left shows formation period, winners (w) portfolio, losers (l) portfolios, winners minus losers (w-l) portfolios and t-stat. winners minus losers (w-l) portfolios are also called zero cost momentum portfolios. Second column shows the number of months for formation period (J)i.e. 3, 6, 9 and 12 months. It shows that how long it takes to form a portfolio. Column 3 to column 6 shows the returns of winners (w) portfolio, losers (l) portfolios, winners minus losers (w-l) portfolios and t-stat whereas last column shows that average return of all w-l portfolios with respect to its formation period.

This paper aims to find the existence of short-term momentum effect in the stock market of Hong Kong. Table 1, mentioned above, displays the results of 16 monthly price momentum strategies. It is very evident from the table that all 16 price momentum investment strategies are posting momentum returns which are economically and statistically significant which leads to the finding that price momentum strategies are profitable and the presence of short term momentum effect has been found in the in the stock market of Hong Kong. This finding is in line with the findings of previous literature and nullify the opposing results of previous researchers. For instance, Griffin, Ji and Martin (2005) found the existence of short-term momentum effect in the

stock market of Hong Kong and Chui, Titman and Wei (2000) found that short term momentum effect is extremely weak in Hong Kong's stock market. However, Chui, Titman and Wei (2001, 2010) found no presence of short-term momentum effect in the stock market of Hong Kong. Similarly, Hameed & Yuanto (2002) could not find the presence of short-term momentum effect phenomenon in the financial market of Hong Kong. Therefore, this finding lends its support from the works of Griffin, Ji and Martin (2005) and Chui, Titman and Wei (2000) and negates the findings of Chui, Titman and Wei (2001, 2010) and Hameed & Yuanto (2002).

The results of the return of price momentum investment strategy in the stock market of Hong Kong suggest that monthly price momentum strategies are overwhelmingly profitable and offer abnormal above average risk adjusted returns to the potential investors who want to invest funds in the stock market of Hong Kong. The cornerstone of short-term momentum investment strategy is to go long in winner portfolios and sell short loser portfolios. Monthly price momentum strategy provides opportunity to investor to maximize his/her portfolio wealth by leveraging the loser portfolio.

There are total 16 monthly price momentum strategies. All strategies are posting positive returns which are statistically significant. It is clear from the table that short term momentum effect is very strong in the stock market of Hong Kong. All momentum investment strategies are providing above average return. Highest momentum returns are posted by J3 formation period. For instance, w-1 portfolio of J3K3 monthly price momentum strategies are posting a return of 96.43% which is also statistically significant. It is clear from the results of J3K3 that investor can earn a return of 68.69% by going long in winner portfolio and can maximize the wealth of the portfolio by 27.74% by going short in loser portfolio. This trend is observable through out the table. Highest return is posted by J3K9 momentum investment strategy which is 97.05%. Lowest return is posted by J12K3 which is 51.69%. Short term momentum effect states that winners outperform losers in short run. This short run period lasts for 6 to 12 months. This trend is observable throughout the table. J3 formation portfolios have posted highest return whereas as time period tends to touch 12 months, momentum effect starts to get weaken which is evident the results of J12 formation portfolios because these portfolios are posting lowest returns. As time period tends to get longer, short term momentum effect will no longer be significant and tends to dissipate. This finding is in line with the findings of Jegadeesh and Titman (1993), Rouwenhurst (1997, 1998), Griffin, Ji and Martin (2005).

4. Conclusions

Short term momentum effect is an interesting phenomenon which states that in short run winners outperform losers. This short run period can last from 3 to 12 months. However, its existence in several different stock market is disputed. For instance, Griffin, Ji and Martin (2005) found the existence of short-term momentum effect in the stock market of Hong Kong whereas Hameed & Yuanto (2002) could not find momentum in the same stock market. This paper seeks to find the answer to this question. Results suggest that short term momentum effect has been found in the stock market of Hong Kong. Short term momentum investment strategies have posted overwhelming returns. Momentum effect has an extremely strong presence in Hong Kong stock market. Investors can maximize their portfolios by going short in loser portfolios. Future research should focus on investigating Hong Kong financial sector with weekly and daily price momentum strategies.

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