

# **52-week High Momentum Strategy: Evidence from Iranian Stock Markets**

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## **Abstract**

This paper extends the 52-high momentum literature which published by George and Hwang in 2004, by stressing the parameters of the trading strategy to investigate its robustness. This study illustrates whether 52-week high momentum strategy is profitable in Tehran Stock Exchange. The time period analyzed is 2000 to 2012. Our sample includes all the companies joined the stock market before 2000 and have been traded in at least 70% of the total trading days from 2000 to 2012. In this research, in order to form winner and loser portfolios a similar method to Jegadeesh and Titman's (1983) has been used. The strategy buys stock whose price has increased over the previous six months, and who also close to their 52- week high price. Stocks are only bought (sold), if their price has increased (decreased) over the past six months and is close to (far from) the 52-week high Price. The results suggest that using 52-week high Momentum strategy in TSE<sup>2</sup> have created positive abnormal returns in the medium time horizon.

**Keywords:** 52-week high Momentum Strategy, Return, TSE

## **1 Introduction**

The 52-week high momentum strategy recommends buying and short selling stocks based on nearness to 52-week high/low price. Exponents of the 52-week high momentum return (George and Hwang (2004)) claim that the momentum returns under this strategy will yield higher returns than the normal momentum strategy. This strategy claim that the returns will be higher than the normal momentum strategy primarily based on US market results, but these have not been tested extensively in multiple markets. Similarly, 52-week momentum return investment strategy documented by George and Hwang (2004) in the US market has been tested in the Australian market as an out-of-sample empirical

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<sup>2</sup>The abbreviation of "Tehran Stock Exchange"

study. Recently, Du (2008) tested 52-week momentum strategy on international stock indices and documented positive and statistically significant 52-week momentum returns. However, the dataset covers indices rather than stocks listed within a country.

George and Hwang (2004) document how 52-week high momentum returns generate superior returns when the stock selection is made on the proximity to 52-week high/low price rather than the traditional total returns approach utilized in pioneering research by Jegadeesh and Titman (1993). George and Hwang (2004) results show that returns associated with the 52-week high strategy are about twice as large as those associated with the normal momentum returns (Jegadeesh and Titman (1993)) and industrial momentum return (Moskowitz and Grinblatt (1999)). The calendar month anomaly does not also apply to a 52-week momentum strategy as the difference is even larger outside of January. George and Hwang (2004) espouse that the 52-week measure has superior predictive power as stocks trading at 52-week high and low price are readily available from many sources. The authors suggest that when a stock's price has been pushed near or to new 52-week high, investors are likely to sell the stock even when the information implies a trend of increasing price. But eventually, the information is incorporated into the price and the price goes up, resulting in a price continuation.

George and Hwang (2004) add that the behavioral explanation for momentum returns by Barberis et al. (1998) and Hong and Stein (1999) does not hold for the 52-week high investing metric as return reversal is not present after a 24-month holding period. Earlier literature maintains that short-term or medium-term Calendar anomaly refers to similar patterns in stock return from year to year, month to month. Term momentum is followed by long-term reversals. Lee and Swaminathan (2000) and Jegadeesh and Titman (2001) examine the unconditional mean profits for six-month momentum strategies over a five-year holding period, documenting profit reversals in years two through five inclusive. According to existing behavioral theories, either under-reaction or over-reaction explanations for momentum include the short-term momentum being followed by a long-term reversal. This is fundamental to the whole process whereby information is incorporated into stock prices. George and Hwang (2004) challenge this proposition, finding no long-term reversals for the 52-week high momentum returns as the returns remain positive after 12 months of holding period and accordingly conclude that the short-term momentum and long-term reversals are separate phenomena. Nevertheless, Du (2008) did not find any evidence of continuing 52-week momentum returns when testing this proposition using international equity indices.

Marshall and Cahan (2005) contribute further evidence, presenting an out-of-sample test for the 52-week high strategy using Australian Stock Exchange (ASX) data and find high profitability for the strategy. However, they use a different approach, suggesting their implementation focuses on practical strategies, i.e., returns are calculated on the basis of closing price and invested on next day opening price. The study is also constrained in terms of stocks involved in the sample, using only those stocks which are approved for short-selling by the Australian Stock Exchange. Du (2008) tests a 52-week momentum strategy on international stock indices and documents positive and statistically significant 52-week momentum returns even after adjusting for risk and transaction-cost. However, the results also show that the 52-week momentum returns follow reversals similar to those of Jegadeesh and Titman (1993) momentum returns.

## 2 Methodology

The framework for calculating 52-week momentum returns is based on the current price of the stock to the last 52-week's high/low price. The method is similar to Jegadeesh and Titman (1993), except the ranking of stocks is based on the nearness of current price to its 52-week high. At the end of 12 months of the formation period, all stocks are ranked as the current<sup>3</sup> close price to 52-week high price. These stocks are ranked and assigned to three portfolios where the Winner portfolio consists of those stocks currently trading close to the last 52-week high price, whereas the Loser portfolio consists of those stocks with a low price when compared to the last 52-week high price. The whole sample is divided into three portfolios where the top 33% belong to Winner stocks and the bottom 33% to Loser stocks. Stocks are only bought (sold), if their price has increased (decreased) over the past six months and are close to (far from) the 52- week high price. The aim is to cut out stocks that are considered to underperforming in the 52- week high momentum strategy, leaving only true winner and loser stock. This strategy was found to increase the strength of the 52- week high momentum strategy.

The analysis of the 52-week high momentum return is based on value-weighted<sup>4</sup> returns unless otherwise stated. The value-weighted approach substantially controls observations for some specific problems that are more pronounced in small capitalization stocks, e.g., outliers, incorrect data recording etc.

The strategy is also computed using formation/holding periods other than the suggested 12 months (52 weeks) formation periods and  $i$ -months holding period that  $i \in \{1,2,3,6,9,12\}$  to detect if the returns are due to data mining.

To calculate the continuously compounded return, the following equation was used:

$$R_t = \log\left(\frac{P_t}{P_{t-1}}\right) \quad (1)$$

That  $P_{t-1}$  is the close price at the beginning of the holding period,  $P_t$  is the close price at the end of holding, and  $R_t$  is the portfolio return at the end of the holding period.

## 3 Data

The period of analysis was from 21 March 2000 to 21 of March 2012. Our sample consists of all companies that joined the TSE before 21 March 2000 and have been traded in at least 70% of the total trading days. In this study, the Kolmogorov-Smirnov Test tested normality, and then Compare Mean Test was used to investigate the statistical significance of the momentum portfolio returns.

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<sup>3</sup>average 1-months price from the end of the holding period

<sup>4</sup>The value-weighted is the approach where money is allocated in proportion to the market capitalization of the stocks.

## 4 Results

George and Hwang in their seminal paper, find that the ratio of the stock's close price to its 52-week high price is a good predictor of future returns. 52-week high Momentum strategies that have been shown to positive significant abnormal returns in the U.S market by buying stocks that are close to their 52-week high price and selling stocks that are far from their 52-week high Price, also generate significant profits in Iran.

George and Hwang (2004) and Marshall and Cahan (2005) primarily rely on a 6-month holding period to illustrate the superiority of the 52-week high momentum return. However, different holding period returns may be calculated to check if the 52-week high momentum return is consistent over differing periods or whether the profit is only present for a specific holding period. Momentum returns for various holding periods can be computed and in this study 1, 2, 3,6, 9, 12 months are tested.

This section indicates the findings of the tests. The profitability of the 52-week high momentum strategy, the monthly and average period return, T-statistic, significance, and the lower/ upper limits at the 5% significant level were indicated.

In panel A, regarding the significance, upper and lower limits, the 52-week high momentum returns were positive for 4 strategies, and is negative or zero for the other two period. Therefore, it was concluded that 52-week high momentum had existed in TSE, and using this strategy led to the generation of Positive returns.

Strategy		H=1	H=2	H=3	H=6	H=9	H=12
	Return	-0.13%	1.75%	<b>7.39%</b>	<b>9.95%</b>	<b>13.24%</b>	<b>14.12%</b>
	M_R ** <sup>5</sup>	-0.09%	0.63%	1.76% * <sup>6</sup>	1.18% *	1.05% *	0.84% *
F=12	t-statistic	-0.12	1.01	3.00	2.77	3.96	3.05
	lower	-0.02	-0.02	0.03	0.03	0.07	0.05
	upper	0.02	0.05	0.12	0.17	0.20	0.23
	sig	0.91	0.32	0.00	0.01	0.00	0.00

## 5 Conclusion

In summary, the results suggest that a 52-week high momentum strategy in TSE have positive and statistically significant abnormal returns in the medium-time horizon with an average monthly return of 1.76% over market, and average 52-week momentum return decreases from 1.76% (3-month holding period) to 0.84% (12-month holding period). But the results for the short horizon time (1 and 2-month holding period) do not indicate a profitable investment strategy.

The results from this study suggest that a 52-week high momentum strategy is profitable in TSE with an average monthly return of 1.76% over market. The results from this study

<sup>5</sup> \* To indicate the abnormal Returns significancy, they have been marked with “\*”.

<sup>6</sup>\*\* M\_R means average monthly returns. To obtain a monthly figure, we divide the total return to the strategy by the number of months. For example in a L = 30-day period, we divide by 1.4, L = 60 days by 2.8, L = 90 days by 4.2, L = 180 days by 8.4, L=270 by 12.6 and L=360 by 16.8.

show that returns start to decline after a 3 month holding period, suggesting that the reversal of momentum returns is prevalent in a 52-week high momentum strategy.

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