

The (lack of) momentum effect in the UAE stock market

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Received: 27 June 2019, revised: 5 July 2019, accepted: 5 July 2019, published: 9 July 2019.

ABSTRACT

We investigate the momentum effect in the United Arab Emirates equity returns. Using a dataset of 124 firms listed in the UAE stock markets in the period January 2004 – March 2019, we form portfolios from one-way sorts on past returns ranging from 3 to 12 months. Contrary to the evidence from global markets, we have found that the momentum effect in the UAE is weak, unreliable, and insignificant. Under realistic trading assumptions, the momentum strategies cannot outperform a diversified market portfolio.

Keywords: stock market, asset pricing, equity anomalies, momentum effect, return predictability, United Arab Emirates, UAE, emerging markets.

JEL codes: G11, G12, G14

1. INTRODUCTION

The momentum effect is one of the simplest and best-known asset pricing anomalies. It can be summarized as a tendency of assets with good (bad) past performance to continue to overperform (underperform) in the future. The classical version of the momentum effect is the relative momentum, that originates from the study of Jegadeesh and Titman (1995). The relative momentum is easy to implement because it simply assumes ranking assets based on their past returns and buying (selling) past winners (losers). Further, the strategy could be improved in many ways, by considering, e.g., alternative holding or sorting periods.

Trend following approach has been discussed in the finance literature since the beginning of the 19th century (Wyckoff, 1924; Seamans, 1939). As momentum is one of best known as asset pricing anomalies; it has been investigated on almost every type of market: in the U.S. stock market (Fama and French, 2008), in other developed countries (Rouwenhorst 1998; Chan et al. 2000; Griffin et al. 2005), in emerging markets (Rouwenhorst 1999), and in frontier markets (de Groot et al. 2012). It has been also investigated on almost every type of asset besides equities, including government bonds (Luu & Yu, 2012; Zaremba & Schabek, 2017), corporate bonds (Gebhardt et al., 2005; Jostova et al., 2013; Lin et al., 2017), interest rates (Durham, 2013), currencies (Menkoff et al., 2011; Orlov, 2015), commodities (Szymanowska et al., 2014; Zaremba et al. 2019), equity indices (Zaremba, Umutlu, & Maydybura, 2018), and real estate (Feng et al., 2014; Moss et al., 2015).

The major aim of this study is to examine the existence and performance of the momentum effect in the UAE stock market. Contrary to prevalent evidence from developed and emerging markets, we do not find evidence supporting any significant momentum effect. Regardless of the portfolio formation periods or the size of the companies in the sample, the difference in average returns between past winners and losers is insignificant. This study adds to the literature on equity anomalies in the UAE (Alshebli 2019; Al-Kahazali, 2008; Al-Hajieh et al., 2011; Al-Tamimi et al., 2011; Chiang & Zheng, 2010; Medhioub & Chaffai, 2018; Mikutowski, Kambouris, & Zaremba, 2019; Moustafa, 2004; Szczygielski, Mikutowski, & Zaremba, 2019; Zaremba, 2019).

The remainder of the study proceeds as follows. Section 2 presents the data. Section 3 discusses the methods employed. Section 4 demonstrates the findings. Finally, Section 5 concludes the paper.

2. DATA

The study relies on all firms listed in the UAE, including two markets: Dubai Financial Market and Abu Dhabi Stock Exchange. We analyzed primary securities only and used monthly returns from the period from January 2004 to March 2019 (all data is obtained from Datastream). We also split the sample into two subsamples: all listed companies and large firms (market value exceeding AED 10 bln). Dataset consists of 124 firms in total. However, the number of companies in particular points in time varies from 33 to 109. Figure 1 shows the number of sampled companies over the analyzed period.

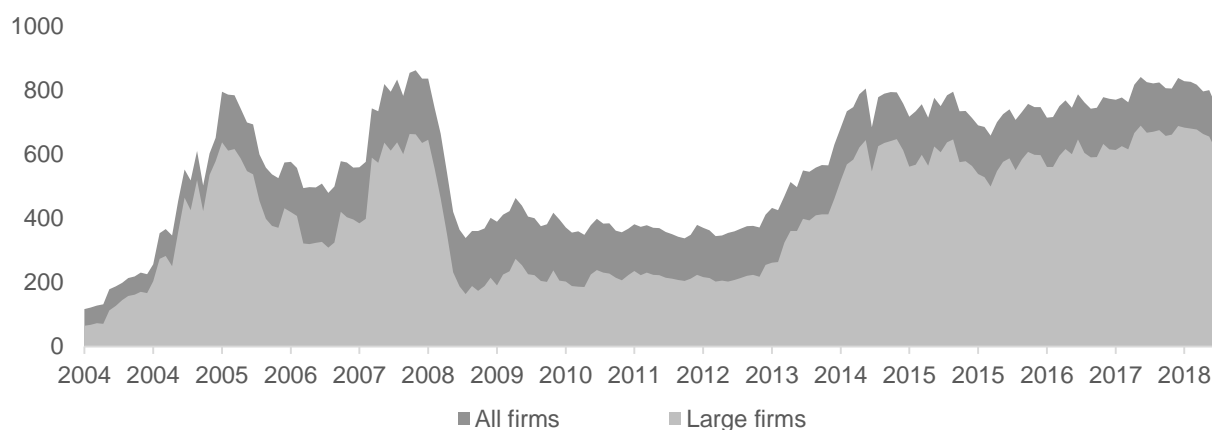
Figure 1. Number of Firms in the Sample



Note: The figure presents the number of companies in the analyzed sample. Source: Bloomberg.

The aggregate value of companies in the dataset varies from 65.17 bln to 688.81 bln AED. After the vast decline earlier in the year 2008 the market value of the UAE stock market has grown rapidly between 2013-2015. At the time of writing this study (March 2019), the UAE stock market has the market capitalization of AED 758.89 bln and 82,6% of its value that has been created by 14 out of 83 listed companies. In earlier periods large companies accounted for between 48.2% to 88.9% of whole market capitalization. Graph 2 shows the value of firms in the sample:

Figure 2. Value of firms in the sample (in AED bln)



Note: The figure presents the value of companies in the analyzed sample. Source: Bloomberg.

3. METHODS

We conducted all the tests in two separate samples: a) including all the companies listed in the UAE and b) including only large companies with the market value exceeding AED 10 bln at the end of the previous month.

In the finance literature, various studies of momentum rely on different formation and holding periods. There seems to be a consensus that the best approach is to simply implement a momentum strategy to sort stocks on their past 12-month mean return skipping the most recent month. This is the method we follow in our

research. Furthermore, for the robustness, we use also three alternative formation return periods: effect, always skipping the most recent month: a) 3-month return, b) 6-month return, c) 9-month return, and d) 12-month return.

Each month we rank all the stocks in the sample on their past mean returns in the estimation period and form equal-weighted and value-weighted tercile portfolios. We also build long-short portfolios that are long in the tercile of stocks with the highest past return and simultaneously short the stocks with the lowest past returns. Always the most recent month is dropped, so the 12-month momentum for a month t is calculated based on the returns in the months $t-12$ to $t-2$ following the findings of Lehmann (1990), Jegadeesh (1990), and Da et al. (2014).

All stocks prices are expressed in UAE dirhams (AED). The risk-free rate is represented by the 3-months US T-bill rate from Kenneth French website (the currency in the UAE is pegged to the US dollar). For each portfolio, we calculate Sharpe ratios (annualized) and CAPM alphas (Sharpe, 1964). The t -statistics are computed using the bootstrap method for mean returns and Newey-West (1987) adjustment for alphas.

Table 1. Strategies in full sample

	Equal-weighted portfolios				Value-weighted portfolios			
	Low	Medium	High	High-Low	Low	Medium	High	High-Low
<i>Panel A: Portfolios from sorts on 3-month momentum</i>								
R	0.98* (1.89)	0.84** (2.15)	1.29*** (2.88)	0.31 (0.88)	0.96 (1.40)	0.85* (1.68)	1.15** (2.08)	0.19 (0.31)
Vol	7.78	5.21	6.25	5.35	9.94	6.83	7.77	7.58
SR	0.44	0.56	0.71	0.20	0.33	0.43	0.51	0.09
α	0.17 (0.49)	0.29 (1.38)	0.61* (1.86)	0.44 (0.85)	-0.16 (-0.57)	0.09 (0.57)	0.28 (1.01)	0.44 (0.85)
<i>Panel B: Portfolios from sorts on 6-month momentum</i>								
R	0.77 (1.64)	0.90** (2.20)	1.05** (2.02)	0.27 (0.66)	0.19 (0.39)	1.23** (2.30)	0.88 (1.59)	0.70 (1.45)
Vol	7.20	5.79	6.88	6.52	7.97	8.18	7.82	7.56
SR	0.37	0.54	0.53	0.14	0.08	0.52	0.39	0.32
α	0.14 (0.31)	0.30 (1.17)	0.33 (1.10)	0.19 (0.30)	-0.54 (-1.63)	0.33 (1.31)	0.05 (0.13)	0.59 (0.84)
<i>Panel C: Portfolios from sorts on 9-month momentum</i>								
R	0.71 (1.46)	0.70* (1.74)	0.99* (1.92)	0.28 (0.70)	0.32 (0.59)	0.87* (1.72)	0.80 (1.32)	0.47 (0.92)
Vol	7.18	5.59	6.96	6.38	8.58	7.55	8.07	7.65
SR	0.34	0.43	0.49	0.15	0.13	0.40	0.34	0.21
α	0.10 (0.23)	0.18 (0.86)	0.33 (1.09)	0.23 (0.38)	-0.44 (-1.16)	0.12 (0.53)	0.01 (0.01)	0.45 (0.60)
<i>Panel D: Portfolios from sorts on 12-month momentum</i>								
R	0.68 (1.44)	0.63 (1.55)	0.53 (1.09)	-0.15 (-0.23)	0.24 (0.49)	1.14** (1.98)	0.40 (0.81)	0.16 (0.41)
Vol	6.87	5.96	6.70	6.07	8.42	8.54	7.52	7.25
SR	0.34	0.37	0.27	-0.09	0.10	0.46	0.18	0.08
α	0.22 (0.57)	0.17 (0.71)	0.03 (0.11)	-0.19 (-0.35)	-0.34 (-0.90)	0.46 (1.43)	-0.20 (-0.59)	0.14 (0.21)

Note. The table presents the performance of equal-weighted and value-weighted tercile portfolios from sorts on 3-month (*Panel A*), 6-month (*Panel B*), 9-month (*Panel C*), 12-month (*Panel D*) past returns. *High (Low)* represents the portfolio of stocks with the 1/3 highest (lowest) past returns, *Medium* represents the portfolio of stocks with past returns between groups of 1/3 highest and 1/3 lowest. *High-Low* is the zero-investment portfolio going long (short) for the *High (Low)* tercile. *R* is the mean monthly return, *Vol* represents the standard deviation, *SR* is annualized Sharpe ratio and the symbol α represents the average annual abnormal return intercepted from the CAPM model. Average returns, volatilities, and alphas are expressed in percentage terms. The numbers in parentheses are bootstrap and Newey-West (1987) adjusted t -statistics for the means of returns and alphas, respectively. The asterisks *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

4. ANALYSIS AND RESULTS

4.1 Portfolio sorts

4.1.1. Strategies in the full sample

Table 1 presents the performance of portfolios from one-way sorts on past returns. Contrary to the evidence from other numerous markets, we hardly find any evidence supporting the momentum effect in the UAE. In the full sample, the best results are demonstrated in the portfolio based on 3-month momentum, where the raw mean returns on the long-only equal-weighted (value-weighted) portfolio amount to 1.29% (1.15%). The alphas equal 0.44% (0.44%) and depart significantly from zero at the 10% level.

For 6-month momentum, the long-only strategy is characterized by the mean return of 1.05% (0.88%), but the alphas are no longer significant. Similarly, all the other long-only specifications do not display any reliable or significant abnormal returns.

The performance of the long-short portfolios in Table 1 serves as a simple check of the monotonicity in the cross-section of returns. Unfortunately, none of these portfolios produces significant and positive mean returns or alphas. On average, the payoffs hardly depart from zero. To sum up, we find no evidence supporting the hypothesis of the momentum effect in the UAE stock market.

Table 2. Strategies in the sample of large firms

	Equal-weighted portfolios				Value-weighted portfolios			
	Low	Medium	High	High-Low	Low	Medium	High	High-Low
<i>Panel A: Portfolios from sorts on 3-month momentum</i>								
R	1.07 (1.42)	1.24** (2.04)	1.30* (1.84)	0.22 (0.41)	1.04 (1.30)	1.10** (1.97)	1.28** (2.01)	0.23 (0.43)
Vol	9.99	9.08	9.64	7.92	10.43	8.64	9.14	8.45
SR	0.37	0.47	0.47	0.10	0.35	0.44	0.49	0.09
α	-0.03 (-0.09)	0.25 (0.71)	0.22 (0.80)	0.24 (0.47)	-0.10 (-0.27)	0.16 (0.42)	0.26 (0.91)	0.36 (0.65)
<i>Panel B: Portfolios from sorts on 6-month momentum</i>								
R	1.01 (1.43)	0.95 (1.41)	1.42* (1.91)	0.41 (0.65)	0.98 (1.27)	0.66 (1.04)	1.55** (2.19)	0.57 (0.94)
Vol	9.88	9.00	10.02	8.06	10.61	8.61	9.86	9.25
SR	0.35	0.37	0.49	0.18	0.32	0.27	0.54	0.21
α	-0.04 (-0.16)	0.01 (0.04)	0.39 (1.09)	0.44 (0.80)	-0.12 (-0.42)	-0.24 (-0.75)	0.54* (1.73)	0.67 (1.43)
<i>Panel C: Portfolios from sorts on 9-month momentum</i>								
R	1.24* (1.83)	1.04 (1.49)	0.96 (1.36)	-0.28 (-0.43)	1.10 (1.62)	0.85 (1.22)	1.16* (1.75)	0.06 (0.18)
Vol	9.76	9.53	9.73	7.93	10.18	9.57	9.47	9.05
SR	0.44	0.38	0.34	-0.12	0.37	0.31	0.42	0.02
α	0.27 (0.81)	0.10 (0.30)	0.05 (0.19)	-0.22 (-0.40)	0.11 (0.27)	-0.10 (-0.37)	0.29 (1.54)	0.18 (0.34)
<i>Panel D: Portfolios from sorts on 12-month momentum</i>								
R	1.02 (1.52)	1.01 (1.57)	0.64 (0.94)	-0.37 (-0.40)	0.64 (0.95)	1.07* (1.71)	0.99 (1.30)	0.35 (0.68)
Vol	9.92	8.36	10.47	8.49	10.14	8.27	10.71	9.07
SR	0.36	0.42	0.21	-0.15	0.22	0.45	0.32	0.13
α	0.24 (0.66)	0.38 (1.40)	-0.14 (-0.37)	-0.38 (-0.63)	-0.16 (-0.43)	0.46 (1.58)	0.18 (0.43)	0.34 (0.52)

Note. The table presents the performance of equal- and value-weighted tercile portfolios from sorts on 3-month (*Panel A*), 6-month (*Panel B*), 9-month (*Panel C*), 12-month (*Panel D*) past returns. *High (Low)* represents the portfolio of stocks with the 1/3 highest (lowest) past returns, *Medium* represents the portfolio of stocks with past returns between groups of 1/3 highest and 1/3 lowest. *High-Low* is the zero-investment portfolio going long (short) for the *High (Low)* tercile. *R* is the mean monthly return, *Vol* represents the standard deviation, *SR* is annualized Sharpe ratio and the symbol *α* represent the average annual abnormal return intercepted from the CAPM model. Average returns, volatilities, alphas are expressed in

percentage terms. The numbers in parentheses are bootstrap and Newey-West (1987) adjusted *t*-statistics for the means of returns and alphas, respectively. The asterisks *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

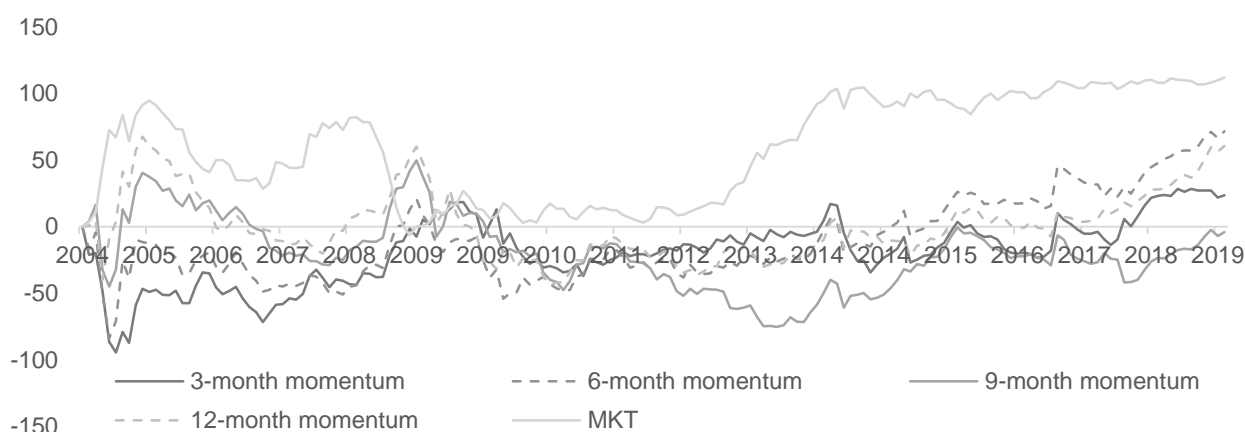
4.1.2. Strategies in large firms

The UAE stock market has a large number of highly illiquid companies. Hence, we now continue our examinations within the sample of large firms only, which provide perhaps a more realistic picture of the actual investment environment in the UAE stock market.

Unfortunately, the findings from the analysis of the large firms confirm our initial observations. While some of the long-only portfolios displayed historically somewhat higher payoffs, we see no significant pattern in the cross-section of returns. The mean returns and alphas on all the long-short portfolios do not depart significantly from zero in any of the specifications. Basically, there is no momentum effect in the UAE equities.

Supplementary, Figure 3 demonstrates cumulative returns on the long-short momentum portfolios implemented within the sample of large firms where, again, it is hard to spot any convincing pattern. The payoffs are hardly volatile. After a surge in profits following the 2008 crash, the returns subsequently turn negative. Years 2013-2019 seem to bring some revival of the momentum strategy, but – at the end – this is still insufficient to prove the significance of the momentum effect.

Figure 3. Cumulative returns on the long-short momentum portfolios within the sample of large firms.



Note: The graph presents the cumulative returns for each of the analyzed strategies and market capitalization of analyzed firms. Source: Own study.

Ultimately, we have found no evidence of the momentum effect in the UAE stock market. The overall reasons for that are unclear. On the one hand, it is possible that the phenomenon stems from some specific characteristics of the UAE stock market, linked to cultural dimensions or behavioral issues. On the other hand, the lack of profits may simply stem from the limited size of the market. Although, our outcomes may be also period specific.

5. CONCLUSIONS

The study investigates the effectiveness of the momentum strategy in the UAE stock market. We used all firm listed in UAE in the period from January 2004 to March 2019. We performed portfolio sorts based on 3, 6, 9 and 12-months past returns. We did not find any evidence supporting the momentum effect in the UAE stock market. Any of long-short momentum portfolios delivered statistically significant raw returns or alphas.

The study has implications from both academic and practical perspectives. On the one hand, it provides new insights into asset pricing in the UAE stock market. On the other hand, it conveys practical information for portfolio managers with the UAE-mandate. The investors in Dubai or Abu Dhabi should be particularly cautious when implementing momentum strategies, as their performance may markedly differ from other developed or emerging markets.

The future studies on the topics discussed in this paper should focus predominantly on finding the source of the lack of momentum in the UAE equities. The question of why there is no cross-sectional pattern in returns linked to past performance remains open.

FUNDING

This paper is a part of the project No. 2016/23/B/HS4/00731 of the National Science Centre of Poland.

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