PRICE EFFECTS AFTER ONE-DAY ABNORMAL RETURNS: ESG VS TRADITIONAL INDICES

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Prices in the stock markets should follow a random walk (Fama, 1965). Still there are many empirical evidences in favor of different patterns in price dynamics, so called market anomalies (Plastun et al., 2019). They can be caused by seasonal or another timing aspects like day of the week, month of the year etc (calendar anomalies) or to the specific events like force-majors or news. In some cases price movements can be predictable based on a set of fundamental variables (economic, political, etc). De Bondt & Thaler (1985) revealed another group of anomalies caused by market overreactions (overreaction hypothesis). These anomalies are related to the existence of the fat tails in the financial data which is against the normal distribution of the data and thus non-random specific of price behaviour.

Jegadeesh and Titman (1993) showed that after the overreactions, prices tend to move in the opposite direction. A specific case of overreaction hypothesis is price behaviour after one-day abnormal returns. Existing evidences are mixed for different markets and data sets. Bremer and Sweeney (1991) found evidence of price reversals after one day of price declines in the stock market. Parikakis and Syriopoulos (2008) confirmed existence of the contrarian effect after one-day abnormal returns in the Forex. However, Caporale & Plastun (2019) find evidences in favour of momentum effects after one-day abnormal returns in the crypto currency market.

Despite a lot of empirical evidences related to price effects after abnormal returns there are still unexplored aspects. For example, relatively unexplored case of price effects after abnormal returns related to ESG data. We have examined price effects (momentum and contrarian) after one-day abnormal returns in the stock markets both developed and emerging for the cases of ESG and conventional indices of MSCI family. A number of hypotheses are tested: after one-day abnormal returns specific price effects (momentum/contrarian) do appear (H1) for the case of positive (H1.1) and negative (H1.2) returns; price effects after one-day abnormal returns are stronger for the case of traditional indices compared with ESG indices (H2). For these purposes different statistical tests and methodological approaches are used including average analysis, modified cumulative abnormal returns approach, regression analysis with dummy variables, R/S analysis, parametric Student's t-test and ANOVA, non-parametric Mann-Whitney tests and trading simulation approach.

We compare the power of detected effects for the cases of ESG data and Traditional indices. Results for the positive and negative abnormal returns are presented in Tables 1 and 2 respectively.

Table 1

Comparison of the price effects after one-day positive abnormal returns: ESG vs Traditional indices

Period	ESG		Traditional	
	Type of effect	Power	Type of effect	Power
USA	contrarian	6	contrarian	7
UK	momentum	1	momentum	2
Japan	contrarian	7	contrarian	4
China	momentum	2	momentum	5
India	momentum	2	momentum	3

Based on the results of Table 1 it's hard to find any evidences in favor of Hypothesis 2. Types of effects are the same both for the ESG and Traditional indices. The power of detected effects is different for different countries and used approaches, but there is no any detectable pattern in these differences. No ESG, no traditional indices are more vulnerable for the price effects after one-day positive returns.

Table 2

Comparison of the price effects after one-day negative abnormal returns: ESG vs Traditional indices

Period	ESG		Traditional	
	Type of effect	Power	Type of effect	Power
USA	contrarian	6	contrarian	6
UK	contrarian	3	contrarian	2
Japan	contrarian	7	contrarian	7
China	contrarian	4	contrarian	2
India	momentum	1	momentum	1

According to results from Table 2 types of effects are the same for the ESG and traditional indices. The power of these effects is very close for the analyzed data

sets.

This means Hypothesis 2 is rejected: price effects after one-day abnormal returns are not stronger for the case of traditional indices compared with ESG indices.

Results are mixed for the case of H1 and provide no evidences in favor of H2. The US stock market is extremely vulnerable for the price effects after one-day abnormal returns in the form of contrarian price movements. Some strong effects are found in the Japanese stock market data. ESG data results in general are in line with those for the conventional indices.

The results of this paper provide a bunch of new empirical evidences related to the price effects after one-day abnormal returns in the ESG indices. From the point of economic theory, they give additional evidences against the Efficient Market Hypothesis: markets are efficient only partial. For example, the US stock market even nowadays extremely vulnerable for the price effects after abnormal returns (prices tend to move in the opposite direction the day after the day with abnormal returns) and they can be exploitable to generate abnormal profits from trading. So "beat the market" attempts make sense. Behavioral finance gets another experimental confirmation in favor of irrational markets. Practitioners can use the results of this paper to generate extra profits from trading based on detected price patterns.

References

De Bondt, W. F. and Thaler, R. (1985). Does the stock market overreact? The Journal of Finance, 40(3):793–805.

Fama, E. F. (1965). The behavior of stock-market prices. The Journal of Business, 38(1):34–105.

Jegadeesh, N. and Titman, S. (1993). Returns to buying winners and selling losers: Implications for stock market efficiency. The Journal of finance, 48(1):65–91.

Parikakis, G. and Syriopoulos, T. (2008). Contrarian strategy and overreaction in foreign exchange markets. Research in International Business and Finance. 22. 319-324.

Plastun Alex, Xolani Sibande, Rangan Gupta, Mark E. Wohar, (2019), Rise and fall of calendar anomalies over a century, The North American Journal of Economics and Finance, Volume 49, 181-205.