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Is there momentum in equity anomalies? Evidence from the Polish emerging market

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ABSTRACT

Emerging markets are thought to be a cornucopia of equity anomalies. Yet while markets mature, by learning investors raise the level of market efficiency diminishing the profitability of the existing patterns. Taking the Polish stock market as an example, we offer a viable solution to this tendency – an active asset allocation strategy based on the momentum effect. First, we identify and replicate 100 anomalies in the cross-section of returns. Then, having documented the momentum in their performance, we translate it into a profitable strategy. Going long (short) on the anomalies which performed best (worst) in the past produces significant raw and risk-adjusted returns outperforming a naive benchmark of equal weights of all profitable anomalies. The results are robust to various considerations.

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1. Introduction

Last decades have brought a proliferation of discoveries of various cross-sectional patterns in stock market returns. Recent academic papers have reviewed dozens (Green et al., 2014; Hou et al., 2014; Jacobs, 2015) if not hundreds (Harvey et al., 2015) of return predictive signals that allow determining equity performance. Searching for new anomalies not only enables better understanding of asset pricing patterns in financial markets but it is also purely practically motivated: it can be translated into better investment performance and higher bonuses for asset managers. In consequence, it should not come as a surprise that continuous search for new anomalies has recently become one of the hottest topics in academia.

Alas, many of these return regularities tend to follow a sort of Murphy's Law (Dimson and Marsh, 1999): once uncovered, they quickly disappear. Possibly due to investors learning from research publications or arbitrage conditions constantly improving, the performance of anomalies markedly deteriorates (Schwert, 2003; Chordia et al., 2011; McLean and Pontiff, 2015). In consequence, the validity of these strategies frequently cannot be confirmed in out-of-sample studies.

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Emerging markets are generally thought to be a reservoir of stock market anomalies. as lower efficiency may lead to higher abnormal returns. Nonetheless, while the markets mature, investors learning leads to improvement in efficiency; consequently, the profitability of these patterns declines. In light of the disappearance or weakening of the stock market anomalies, it becomes of highest importance for market practitioners to select the most promising strategies. The aim of this paper is to offer a viable tool for tactical asset allocation across the stock market anomalies. We base our approach on momentum effect, which is – in our view – the most robust and pervasive stock market anomaly ever discovered. It has been documented across many stock markets and asset classes over various time periods. The momentum effect has been documented across many markets (Chui et al., 2010) and asset classes (Asness et al., 2013). Furthermore, this strategy has worked well for over two centuries. While Chabot et al. (2008) proved momentum profitable even in the Victorian age, Geczy and Samonov (2015) have made a tremendous research effort to demonstrate that momentum has been present in the US equity market since 1800. Also, Schwert (2003) documented momentum to remain profitable during the post-publication period. Finally, what is crucial for this investigation, multiple research papers have demonstrated that it is possible to apply momentum strategies to successfully rotate among investment styles (Chen and De Bondt, 2004; Tibbs et al., 2008; Clare et al., 2010; Chen et al., 2012) and also the most prominent strategies at the stock and country levels (Zaremba, 2015a). Importantly, Avramov et al. (2016) were the first to apply the concept of momentum to stock market anomalies and this study relies heavily on their concepts.

Thus, we first identify and replicate a set of 100 stock market anomalies well rooted in the academic literature. We sort stocks on various variables and form zero-investment portfolios. Subsequently, we select 41 strategies which prove profitable within our sample, and which, in turn, become our new investment universe. We test for momentum across these strategies and attempt to translate this phenomenon into a profitable tactical asset allocation approach. Thus, we build portfolios of both the top and bottom strategies selected on the basis on their trailing past returns. We evaluate the performance of these portfolios with the standard four-factor asset pricing model (Carhart, 1997) and a naive benchmark of all the 41 filtered anomalies within our sample. Furthermore, we perform a battery of robustness tests, including: alternative portfolio weightings, different breakpoints, alternative sorting periods, splitting the research period into subsamples, and investigating the long and short legs separately.

We base our study on the performance of over 800 companies from the Polish stock market within the period 1998–2015. Our choice of the Polish market is not accidental. First, most of the broad reviews of stock market anomalies focus on the developed markets, particularly USA, where a plethora of these patterns has been first identified. These studies may be influenced by some pretest bias. As our focus in this paper is on the validity of stock market anomalies, we want to give it the character of an out-of-sample check. Second, in the recent years the stock markets in Poland have been growing rapidly: both in terms of market capitalization and absolute stock numbers. An excellent example is the NewConnect trading venue in Poland. Originally intended for small companies, it was launched in 2007 and became the second largest market for small and medium-sized companies in Europe only five years later. Thirdly, the Polish markets are becoming more and more attractive for international investors, increasing, as an emerging market, portfolio diversification despite the growing integration between the emerging and developed markets in the post-liberalization period (Bekaert and Harvey, 2002). Additionally, the Polish stock markets still are an unexplored research area for cross-sectional return patterns. The existing literature is focused almost solely on the most popular effects, i.e. value, size, or momentum (Lischewski and Voronkova, 2012; Urbański, 2012; Waszczuk, 2013; Czapkiewicz and Wojtowicz, 2014). To date, most of the studies in this paper have never been tested in Poland.

Our study contributes in two essential ways. First, we provide the most comprehensive examination of equity anomalies in the Polish market ever conducted. Most of the return predictive signals in the Polish market presented in this paper have never been made available to international readers. Additionally, we propose and test a workable and efficient tool for allocating assets across the stock market anomalies. These examinations are related to three strains of research: (1) stock market efficiency and anomalies in the Polish emerging market (Lischewski and Voronkova, 2012; Urbański, 2012; Waszczuk, 2013; Czapkiewicz and Wojtowicz, 2014), (2) the pervasiveness of the momentum effect (e.g., Asness et al., 2013; Vidal-Garcia, 2013; Xie and Chen, 2015; Teplova and Milkova, 2015), and (3) and the tactical asset allocation across investment strategies (e.g., Chen and De Bondt, 2004; Teo and Woo, 2004; Aarts and Lehnert, 2005; Tibbs et al., 2008; Clare et al., 2010; Chen et al., 2012; Kim, 2012; Avramov et al., 2016; Zaremba, 2015a, 2016).

The essential findings of this paper could be summarized as follows. First, we find that 41 of the long-short anomaly portfolios proved profitable within the study period under either the equal-weighted or capitalization-weighted approach. The successful strategies predominantly stemmed from the concepts of value investing, quality investing, momentum, and technical analysis. We find no evidence supporting the remaining anomalies. Furthermore, the profitability of the "successful" anomalies has visibly deteriorated in time.

Second, based on cross-sectional and time-series tests, we have uncovered a significant relationship between past returns on anomalies and their future performance. Subsequently, we offer an approach which translates this phenomenon into a viable strategy selection approach. Going long on the anomalies which performed well in the past and going short on the anomalies which performed poor delivers significant returns and alphas from the four factor model, which were higher than on a respective naive benchmark that equal a weighted average of all the 41 selected anomalies. This results are robust to multiple considerations, e.g. different portfolio weighting schemes, alternative breakpoints, various sorting periods, and splitting the study period into halves. Furthermore, the investigations of long-only and short-only portfolios also yield

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