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## PRACTITIONER'S DIGEST

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### **THE FULLY-ANTICIPATED $P/E$ PROMISE AND ITS REALIZATION**

**PAGE 5**

*Martin L. Leibowitz, Stanley Kogelman and Anthony Bova*

The goal of this paper is to provide a more complete understanding of the relationship between projected earnings growth and the corresponding implied  $P/E$  path. Typically, such projections are accompanied by the simplifying assumption of a stable  $P/E$ , i.e., the terminal  $P/E$  and initial  $P/E$  are assumed equal. However, this  $P/E$  constancy can only be realized in the unlikely case of earnings, dividends and price all grow at the same rate.

By applying a theoretical “franchise value” model in which all future investments are assumed to be fully anticipated, it is possible to trace out the implicit  $P/E$  path associated with the earnings growth that would flow from any given set of future investments.

It turns out that, for the idealized case of discrete investments, the theoretical  $P/E$  will slowly rise until the first franchise investment is made. At this point, a portion of a firm’s future potential Franchise Value is transformed into earnings. This conversion process leads to growing earnings, decreased Franchise Value and a lower  $P/E$ . In contrast to a stable  $P/E$ , the “natural”  $P/E$  path suggest a kind of downward gravitational pull that can only be offset by the discovery of new, entirely unanticipated, future new business opportunities. The specter of a falling  $P/E$ , pull should act as a cautionary reminder to analysts that only firms with true “surprise capacity” can have stable or rising  $P/Es$ .

### **DO HIGH-FREQUENCY TRADERS IMPROVE YOUR IMPLEMENTATION SHORTFALL?**

**PAGE 18**

*Robert A. Korajczyk and Dermot Murphy*

A large literature has shown that increased activity by high-frequency traders (HFTs) is related to increased liquidity, as measured by the narrowing of bid-ask spreads. Institutional investors have long known that spreads are the tip of the iceberg in terms of execution costs. They have been vocal in arguing that HFT’s speed advantage allows them to compete with large institutional trades, thus

increasing institutional traders' implementation shortfall. The emphasis in the empirical literature on bid-ask spreads is due to the fact that standard data sources allow us to measure the spread fairly well, but do not allow us to measure implementation shortfall. Like the proverbial person searching for their car keys under the lamp post, even though they were lost elsewhere, we tend to look at spreads because the "light is better there." The Investment Industry Regulatory Organization of Canada (IIROC) provided us with access to a unique data set that contains every message (order, order modification, order cancellation, trade) on all Canadian equity venues for an 18-month period, in addition to a masked broker-client ID for each message. These data allow us to classify traders as institutional directional traders, market-making HFTs, and other traders. Most importantly, the data allow us to calculate the implementation shortfall for institutional "parent orders" that are executed across hundreds of "child orders."

Several months into our sample period, IIROC changed its regulatory fee structure from one based solely on trades to one based on both trades and all other message traffic. This is essentially a "tax" on message traffic, which falls mainly on HFTs since they tend to submit many messages per trade. This tax led to a significant decline in HFT activity. We find that spreads widen after implementation of the fee structure, consistent with the earlier literature (most papers look at the effect of an increase in HFT activity while we look at a decrease in HFT activity). More importantly, we find that the implementation of the new fee structure led to a decline in the slope of the implementation shortfall function. That is, market depth increased after the fee change. Parent orders in excess of \$2 million had lower implementation shortfall, on average. We also classify institutional traders into informed and uninformed groups, based on the past profitability of their orders. The decline in implementation shortfall was largest for informed institutional traders.

Our results imply that the answer to the question posed in the title of this paper is multi-dimensional. The "tax" on message traffic led to decreased HFT activity, increased implementation shortfall for small, uninformed traders, and decreased implementation shortfall for large, informed traders. Thus, the change led to an increased subsidy from uninformed investors to informed investors. There are many considerations when implementing this type of change in fee structure. One of the considerations that regulators and market participants must take into account is the multi-faceted nature of taxing HFT activity.

## **TIMING IS NOT EVERYTHING—ASSESSING MANAGER SKILL IN FACTOR TIMING**

**PAGE 34**

*Andrew Chin and Piyush Gupta*

Factor timing has attracted a lot of attention since the Global Financial Crisis because of the divergent performance of popular factors. Academics and practitioners alike have done extensive research to predict factor movements in their efforts to generate higher returns. Numerous products and strategies have been introduced over the last decade to enable investors to gain or hedge a variety of exposures.

Amidst this flurry of activity, a critical question is whether funds have been successful in timing factors. We introduce an innovative framework to assess the contribution and persistence of factor timing by decomposing active returns into three components: returns from strategic factor decisions, returns

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from tactical factor bets, and security selection. Using this framework, we find that Factor Timers do not exhibit skill in aggregate. In addition, we find that security selection is the key driver of future outperformance and manager skill across all funds.

As the industry evolves in the coming years, investors can use our framework to assess the role and impact of factor timing in investment strategies.

## **TRENDS EVERYWHERE**

**PAGE 52**

*Abhilash Babu, Ari Levine, Yao Hua Ooi, Lasse Heje Pedersen and Erik Stamelos*

We provide new out-of-sample evidence on trend-following investing by studying its performance on a diverse set of assets not previously examined. Our study includes 82 alternative assets and 16 long-short equity factors in addition to the 58 traditional assets previously studied in the literature, and we extend the analysis through December 2017. Our results demonstrate that trends are a pervasive feature across a variety of markets and even equity factors, providing the broadest cross-section of evidence of time series momentum to date.

Specifically, we study the performance of trend following for emerging market equity index futures, fixed income swaps, emerging market currencies, exotic commodity futures, credit default swap indices, volatility futures, and long-short equity factors. We find that trend following has worked across these assets and across several trend horizons. Furthermore, we examine trend-following performance for alternative assets and long-short equity factors, alongside traditional assets, during different market environments and also analyze the co-movement of trends within and across these groups.

Finally, we examine the potential diversification benefits of trend-following in traditional assets, alternative assets, and long-short equity factors relative to long-only investments. We find that trend-following using these asset groups generates significant alpha and low correlations to traditional long-only investments. While the low correlations of the traditional assets echo earlier results in the literature, the low correlations for alternative assets and long-short equity factors previously not examined can be seen as out-of-sample evidence of the diversification benefits of trend-following investing. Hence, trend following on a range of assets displays an overall diversifying profile for investors with substantial holdings in traditional long-only investments.

## **TIME-SERIES VARIATION IN FACTOR PREMIA: THE INFLUENCE OF THE BUSINESS CYCLE**

**PAGE 69**

*Christopher Polk, Mo Haghbin and Alessio de Longis*

The rise in popularity of factor investing over the last several decades has led to a proliferation of many “smart beta” strategies used by both institutional and retail investors. However, there is still a healthy debate on the benefits of deploying these strategies and the optimal allocation within investor portfolios. Portfolios utilizing quantitative characteristics such as value, size, momentum, low volatility and quality have generated attractive excess returns, and now represent a new dimension of portfolio risk. Therefore, many investors have adopted new strategies that seek to allocate across these factors,

to access a diversified, static, multi-factor portfolio. This raises the question, what are the economic drivers of these new risks and how do they behave through time? Can investors capitalize on time variation in factor returns or is a static allocation always optimal?

We argue that factor cyclicalities can be understood in the context of factor sensitivity to aggregate cash-flow news. We find that factors exhibit different sensitivities to macroeconomic risk, and this heterogeneity can be exploited to motivate dynamic rotation strategies among five commonly established factors: size, value, quality, low volatility and momentum. A realistic identification of business cycle regimes, using leading economic indicators and global risk appetite, can be used to construct long-only dynamic factor strategies with information ratios nearly 70% higher than static implementations over the past 30 years. These results are statistically significant after accounting for capacity, transaction costs and turnover, and they are robust across regions and market cap segments.