

Launch of I Know First's AI-Predictive System for the Japanese Stock Market – Beating the Nikkei 225



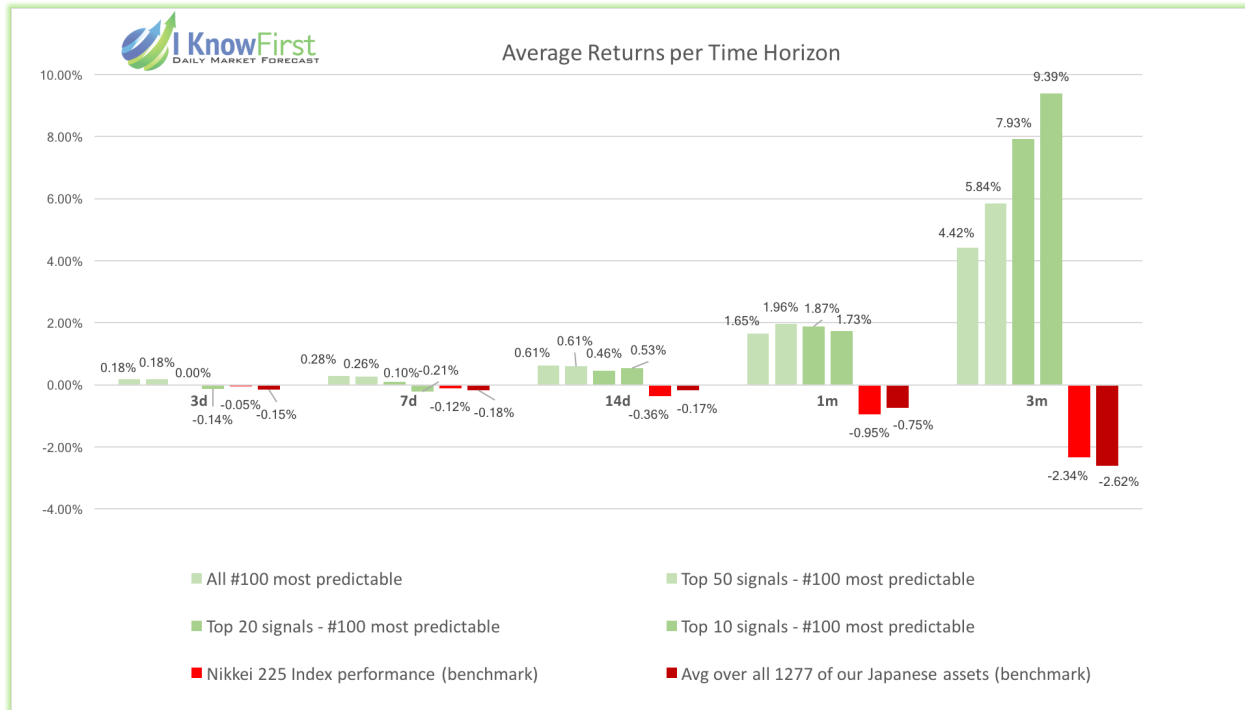
As of December 28th 2017, I Know First finished the implementation and the training period of its AI-based ranking and forecasting model for the main equities listed on the Tokyo Stock Exchange (TYO) specifically a selection of 1277 stocks. On this date, I Know first published the first Japanese stock forecast for the subscribed investors in the local Japanese market, as the timing of the data feed and the forecast generation was adjusted to the respective time zone.

According to our forecast evaluation results, the predictions generated returns greatly surpassing that of the benchmark we have utilized, namely, the sample of equally-weighted 1277 most liquid stocks from the Tokyo Stock Exchange held by I Know First, including all 225 of the Nikkei 225 Index constituents.

For each covered stock the forecasts are generated daily for 6 main time horizons, expressed in calendar days/months/years: 3 days, 7 days, 14 days, 1 month, 3 months and 1 year.

The daily updated forecast consists of two numbers: [the signal which indicates the predicted direction and strength of the stock's movement in the respective time frame](#), and the [predictability which indicates how predictable the algorithm considers the stock's movements to be](#).

Currently, I Know First's AI-based forecasting system covers 1277 main equities listed on the Tokyo Stock Exchange, which we have used as the benchmark below.



AI Added Value to the Investors:

The predictive AI system can be used by investors/traders to make smarter investment decisions by:

- Identifying promising opportunities in the Japanese stock market
- Implementing custom screens as overlay to support their research and investment process.

The AI tool is an active investment management product, suitable for institutional as well as private self-directed DIY investors, helping outperform the market and manage portfolios with more confidence.

Performance Evaluation:

Time Horizon:

In the period of 12/16/2017 – 06/04/2018 the forecasts for the Tokyo Stock Exchange (I Know First coverage: 1277 stocks) have been generated daily. Evaluation is based on all published

Long/Short forecasts, for 3d, 7d, 14d and 1 month time horizons during these periods.

**Since the forecasting time frames are given in calendar days, the table below details the corresponding holding periods in trading days used*

Forecast time horizon (in calendar days/months)	Position holding period (in trading days)
3 days	3
7 days	5
14 days	10
1 month	21
3 months	63

Benchmarks:

Two benchmarks are used for our evaluation:

- a. The average return of the Nikkei Index according to same time horizons is used as the first benchmark;
- b. A section of equally-weighted 1277 stocks from TYO are used as another benchmark for comparison purposes demonstrating average returns using size, such as market capitalization, according to same time horizons.

Evaluation Breakdown:

1) Unfiltered Return Evaluation

Table 1 presents the evaluation of the forecasted performance of the unfiltered TYO stocks held by I Know First. The unfiltered average returns with prediction levels > 0 demonstrates the algorithm's performance by sampling all stocks using merely the predictors that are positive and may not have high predictability levels. Average trade returns (Long/Short) are shown for all time horizons – 3d, 7d, 14d, and 1m – versus the corresponding average returns of the benchmark.

The table shows that the stocks selected using I Know First forecasts significantly outperform both benchmarks for all time horizons. The long/short algorithm is able to identify the main trend of the market as well as the best investment opportunities.

FORECAST EVALUATION - average returns	Long/Short				
Unfiltered (pred>0)	3d	7d	14d	1m	3m
all stocks	0.06%	0.05%	0.03%	0.14%	0.88%
Nikkei 225 Index performance (benchmark)	-0.05%	-0.12%	-0.36%	-0.95%	-2.34%
Avg over all 1277 of our Japanese assets (benchmark)	-0.15%	-0.18%	-0.17%	-0.75%	-2.62%

Table 1: Forecast Evaluation for Unfiltered Stocks

2) Filtered Return Evaluation

Table 2 presents the respective evaluation of the forecasted performance of the filtered 100 most predictable stocks among the benchmarked 1277 TYO stocks held by I Know First. **The table clearly shows that for the 100 most predictable stocks, the average trade return outperformed both benchmark returns, with performance generally improving as stocks with stronger signals were selected, especially for longer time horizons.** It emphasizes the importance of signals in successfully outperforming the benchmark.

FORECAST EVALUATION - average returns	Long/Short				
Filtered (#100 most predictable)	3d	7d	14d	1m	3m
All 100 most predictable stocks	0.18%	0.28%	0.61%	1.65%	4.42%
Top 50 signals	0.18%	0.26%	0.61%	1.96%	5.84%
Top 20 signals	0.00%	0.10%	0.46%	1.87%	7.93%
Top 10 signals	-0.14%	-0.21%	0.53%	1.73%	9.39%
Top 1 signals	0.28%	0.75%	1.13%	1.81%	21.40%
Nikkei 225 Index performance (benchmark)	-0.05%	-0.12%	-0.36%	-0.95%	-2.34%
Avg over all 1277 of our Japanese assets (benchmark)	-0.15%	-0.18%	-0.17%	-0.75%	-2.62%

Table 2: Forecast Evaluation for Most Predictable Stocks

3) Comparison Between Unfiltered and Filtered Return

Finally in Table 3, we compared the average returns across the unfiltered and filtered sections, with differences in predictability level (i.e. positive predictability indicator versus #100 highest predictability). As demonstrated in the table, the introduction of predictability significantly improves the forecast performance for all time horizons. It highlights the importance of the predictability level with higher average returns when it's increasing.

FORECAST EVALUATION - average returns	Long/Short				
Time Horizon	3d	7d	14d	1m	3m
Unfiltered (pred>0) -- all stocks	0.06%	0.05%	0.03%	0.14%	0.88%
Filtered (#100 most predictable) -- all stocks	0.18%	0.28%	0.61%	1.65%	4.42%
Nikkei 225 Index performance (benchmark)	-0.05%	-0.12%	-0.36%	-0.95%	-2.34%
Avg over all 1277 of our Japanese assets (benchmark)	-0.15%	-0.18%	-0.17%	-0.75%	-2.62%

Table 3: Comparison Between Unfiltered and Filtered Return

Evaluation Remarks:

It is evident that the predictability indicator is crucial to identifying consistently market outperforming opportunities and that virtually all the average returns obtained using the predictability filtered algorithmic forecasts beat the market. Moreover, among the stocks with high predictability levels, the strongest signals on average consistently correspond to higher returns as well.

Therefore, in order to outperform the market and get more impressive results from the algorithm, **it is crucial to focus on the assets which the algorithm identifies as most predictable, and at the same time also on the ones with the strongest signals** (and thus the most up/down side depending on signal's direction).

Conclusion

I Know First AI-based predictive system considers the markets holistically – it searches for patterns and relationships/interconnections in huge sets of historical daily updated, structured capital markets data and considers the financial world as a large complex system as a whole.

From the patterns learned and matched to the current market conditions, the algorithm is deriving future projections for the securities. It condenses the learned patterns into two indicators representing each asset's forecast, allowing the investor to use the ranked predictions to identify great investment opportunities and to support his/her investment process and beat the broad market.

The predictability indicator, available for each security and time frame, helps to track how



successful the algorithm is in learning the behavior of each individual asset and thus to focus on the most promising opportunities.

After primarily focusing on the U.S. stock market, the implementation of I Know First deep-learning model for the Japanese stock market and its outstanding results since the launch this March highlight the superiority of I Know First's approach and exemplifies the adaptability and high scalability level of the system to markets across the globe.