Currency Risk and Information Diffusion

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Contributions

What Will We Learn?

- Information moves from currency markets to equity markets at different speeds
- Adverse selection in equity markets is a determinant of information diffusion from currency markets to equity markets

Why Does It Matter?

- Average abnormal return of 6.32% per year
Not Machine Learning
Currency Risk and Information Diffusion

Contribution

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Overview

- Estimate daily betas using Dimson (1979) estimator
  5 trading days before and after measurement period
- Sum of auto regressive coefficients
  Assumes short-term beta stability
- Test portfolios formed on price adjustment to currency
- Average annualized abnormal return of 6.32%
SAY "DATA SNOOPING"
ONE MORE TIME
Related Papers

Lo and MacKinlay (1990) Review of Financial Studies
  • Lead-lag effect

  • Number of analysts is a determinant of price delay

  • Trading volume is a determinant of price delay

  • PIN is unrelated to price delay
Price Delay Measure

Math in a presentation?

\[ R_{i,t} = \alpha_i + \sum_{k=-5}^{5} \beta_{1,i} Mkt_{t+k} + \sum_{k=-5}^{5} \beta_{2,i} FX_{t+k} + \epsilon_i \]  \hspace{1cm} (1)

\[ \delta_t = \sum \beta (\phi_{t-1} + \phi_{t-2} + \phi_{t-3} + \phi_{t-4} + \phi_{t-5}) / \beta = \sum_{k=-5}^{-1} \phi_{t+k} \]  \hspace{1cm} (2)

\[ \delta_t = \sum_{k=-5}^{-1} \beta_{t+k} / \sum_{k=-5}^{5} \beta_{t+k} \]  \hspace{1cm} (3)

Controls: Size, Turnover, Analyst Coverage, Institutional Ownership
Data

CRSP
- January 1993 through December 2013
- 17,831 unique firms with daily frequency

VPIN
- Estimated from NYSE TAQ at 1 second resolution
- VPIN downsampled to daily frequency

Market Information for International CAPM
- MSCI World Index

Currency Information for International CAPM
- US Federal Reserve Major Currency Index
- Top 7 trading partners accounts for over 50% of US trade
Econometrics

If the “P” is Low

Then the Ho Must Go
Price Adjustment

Negative Effect on Price Adjustment
- VPIN
- Size
- Turnover
- Analysts

Positive Effect on Price Adjustment
- Institutional Ownership

Econometrics
- Observations ranging from 15 million to 25 million
- Adjusted $R^2$ ranging from 0.45 to 0.52
I Need More Alpha

Value-weighted Portfolios sorted on Price Adjustment
- Adjusted $R^2$ ranging from 0.75 to 0.77
- Low Price Adjustment has no alpha
- High Price Adjustment has significant positive alpha

Iterative Reweighted Least Squares

Take-away
- More alpha opportunities available in high price adjustment stocks
- Annualized alpha of top decile is 6.32%
Contributions

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Twitter: @ProbablePattern