PIN MODEL

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CONTENT

INTRODUCTION

The Probability of Informed Trade (PIN) model, developed in a series of seminal papers including Easley and O'Hara (1987), Easley, Kiefer, O'Hara, and Paperman (1996), and Easley, Kiefer, and O'Hara (1997) is extensively used in accounting, corporate finance and asset pricing literatures as a measure of information asymmetry.

$$PIN = \frac{No.\,of\,infromed\,trades}{Total\,Number\,of\,trades} = \frac{\alpha.\mu}{\alpha.\mu + \varepsilon_B + \varepsilon_s}$$

PARAMETERS

α

Alpha is the intensity rate of arrival of news.

δ

Probablity of arrival of bad news.

μ

Probablity, of informed BUY/SELL

εB, εS

Probablity of uninformed BUY/SELL

LIQUIDITY MEASURES

1.Liqudity measures are used to determine how well the stock is being traded in the market.

2. We have estimated the effective spread of the coco cola intraday data as on 03/01/2023.

3. As the effective spread is very less the stock volume was low on this day.

```
> average.es
[1] 0.01081284
> # av.EffSpread
```

VOLATALITY

- **Volatality is the estimation of fluctation of stock price.**

- **We have estimated the intraday volatility of Coco Cola.**

- **To estimate the volatality in our dataset we have used the Roll-model.**

```
> rvRoll <- sig2u*n.trades
> print(rvRoll)
[1] 0.4940351
```

Results and Interpretation

```
## Estimate for PIN
(model$par[1]*model$par[3])/((model$par[1]*model$par[3])+model$par[4]+model$par[5])
] 0.1211554
```

- We have estimated the PIN fro the Coco Cola intraday data.
- The Probablity of Informed Trading (PIN) for this day was just 12.12% which is very low.
- This suggests that there were more uninformed trades than informed trades.

LIMITATIONS

The PIN model requires assumption of market efficiency and the accuracy of public information

THANK YOU