Liquidity on the Indian stock market

1996 versus 2002

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“We all know liquidity when we see it”

Liquidity is the ability to do large transactions, quickly, at low transactions costs.

**Depth** How big a transaction can I do without affecting the price?

**Tightness** What is the difference between buy and sell prices?

**Resilience** How quickly does the market bounce back?

The focus of the literature has become on measurement of transactions costs. High liquidity is low transactions costs.
This talk is all about measurement. There are quite a few issues.

Market transparency and disclosure rules are a huge problem.

- **OTC markets**: Information problems.
- **Exchange market**: Exchange has to take effort on disclosure.
- **Examples**: NSE and order book snapshots; NSE and TAQ.
I. Trading volume

- Easy to measure.
- *Does not measure transactions costs.*
- Easy to fake.
- Bigger stocks will innately have higher turnover.
II. Turnover ratio

- 365 days volume, divided by today’s market cap.
- Rescale turnover so as to control for size.
- All the same problems as volume.
- Perhaps the most widely used, most widely-comparable liquidity measure.
III. Trading intensity

- Number of trades per minute.
- Does not measure transactions costs.
- In India, when market lot went to 1, the number of trades went up.
IV. Average trade size

- Does not measure transactions costs.
- In India, when market lot went to 1, average trade size collapsed.
The limit order book

- Access to information in the LOB has been a breakthrough for liquidity measurement.
- Can accurately price the “impact cost” faced in doing a market order.
- NSE releases 4 ‘snapshots’ of the order book every day.
V. Impact cost

- Suppose we face bid/offer of 99/101.
- We define “the ideal price” as \((99+101)/2 = 100\).
- Suppose a transaction for 1000 shares goes through at Rs.102.
- We say “the impact cost for doing 1000 shares is 2%”.

This is squarely about transactions costs. A speculator who buys 1000 shares, and then sells them off, using market orders both ways, spends 4%.

- Impact cost depends on transaction size.
IC is for (a) a timepoint and (b) a transaction size.
In 1996, we had NSE and we had electronic trading.


1996 was before the IT boom; 2002 was after.

What happened to liquidity?
Log trading volume

Average traded volumes

Density

Log trading volumes

1996; 1451 scrips
2002; 951 scrips
Turnover ratios

Liquidity on the Indian stock market – p. 13/17
Number of trades

![Graph showing the distribution of average number of trades with logarithmic scale on the x-axis and densities on the y-axis for two years, 1996 and 2002.]
Mean trade size

Average trade size

Densities

Log (Trade size)

Liquidity on the Indian stock market – p. 15/17
Impact cost

Median Impact Cost

Impact cost (%) at transaction size of Rs.10000

Density
Conclusion

- Overall, turnover has done well.
- But impact cost has not improved.
- This merits further investigation.
- One possibility: The nature of firms in 1996 are different from the nature of firms in 2002.