

ILLUSTRATION BY AJAY MOHANTY



Stock futures in price discovery

A bit more than half the work of price discovery is done by stock futures in India

What is the role of stock futures in price discovery? An informed trader is likely to prefer using stock futures because the return on equity is magnified through leverage. Empirical evidence on this is, however, a puzzle. In the international experience, the share of stock futures in price discovery has worked out to just about 20 per cent. India is a unique laboratory where the stock futures market has been quite successful. Recent research shows that in India, stock futures account for about 50 per cent of the price discovery. This share goes up to higher values at the time when news breaks.

When a person develops a strong opinion about the future of a stock price, what is the most profitable way to express that view? It seems natural that the stock futures will be the venue of choice because the gains from successful price forecasting will be magnified through leverage. If ₹100 is put in the spot market, and there is a successful forecast of a 10 per cent price rise, this is a gain of ₹10. But if the same ₹100 is put in the stock futures market, this may yield a position of about ₹400, and a successful forecast of a 10 per cent price rise will give a gain of ₹40, or 40 per cent.

By this reasoning, we would expect sophisticated forecasters to shun the spot market and favour the stock futures market. The reality has proved to be

quite complicated. In most countries, the individual stock futures market is not too liquid, so the gains from leverage are offset by higher costs of transacting. Many important classes of institutional investors trade only on the spot market, so their work in price forecasting feeds into the spot price and not the futures price.



SNAKES & LADDERS

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There is a nice concept of “information share” (IS), which permits the analysis of two markets to understand where the new information appeared. Studies in many countries, outside India, have shown that the IS of the stock futures is quite low — about 20 per cent.

India is a unique laboratory for this work. Equity spot trading in India is among the most active in the world, and India is one of the few successful stock futures markets of the world. This removes one problem that may have hobbled the role of stock futures in other countries,

i.e. the lack of a liquid stock futures market. Evidence on what happens in the Indian stock futures market is found in a new paper in the *Journal of Futures Markets* by Nidhi Aggarwal and Susan Thomas (<https://goo.gl/jQ1nJx>).

Their first finding is that on average, in India, about half the price discovery takes place on the stock futures market and about half takes place on the spot. This value of 50 per cent information share is

larger than what we see elsewhere in the world as the single stock futures market has succeeded in India while this has not happened in many other places.

The second finding is that the IS of the stock futures goes up to 55 per cent on news-intensive days. The role in price discovery of the stock futures market goes up at times when news breaks, which is probably when more speculative trading takes place.

The third finding is that when news-intensive days have bad news, the IS of the stock futures market goes up to 60 per cent. This may relate to the difficulties in short selling, which afflict the Indian equity spot market, given the lack of a well-functioning stock lending programme. When a price forecaster has a negative view to express, there is a greater bias in favour of putting the trade on the stock futures market.

The fourth finding is that for these features to work out, liquidity in the stock futures market is a prerequisite. The stock futures market has to first succeed. If the stock futures market is not liquid in the first place, the cost of trading overwhelms the gains from leverage, and the stock futures market is not important in price discovery. When we look at an Indian stock where the stock futures market is not liquid, this is perhaps similar to the conditions seen in many countries, where stock futures trading has not succeeded, and the IS of the stock futures has languished at about 20 per cent.

Price discovery in the modern world is often quite complicated, with many trading venues, many instruments, geographical distance and time zone differences. The Indian setting is a unique and clean measurement opportunity, where the stock options trading is not too important, and we observe clean data for a spot price and a stock futures price. This makes the evidence particularly compelling.

Critics of financial markets often complain about derivatives trading activities. It is argued that these markets consume the time and focus of finance practitioners but do not contribute to the working of financial markets. Derivatives trading contributes to the system of financial markets in three ways: By giving tools for risk management, by contributing to more liquid markets, and by giving a forum where people who forecast prices can efficiently express their views.

If we visualise trading in (say) Infosys with and without a liquid stock futures contract, how would things change? With a liquid stock futures contract, the returns to price forecasting become higher. Successful forecasters would gain from leverage, and get a higher return on their expenditures in price forecasting. This would attract higher expenditures by finance practitioners to peer into the future of Infosys and forecast the price. This would improve market efficiency: The extent to which the price as seen in the market impounds sophisticated forecasts about the future of the company.

Conversely, if liquid stock futures in Infosys were switched off, expenditures on research and forecasting would be less justified, given the simple unleveraged returns. The scale of expenditures on understating Infosys and forecasting its future would go down. The price would contain less information; it would be a less efficient market.

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