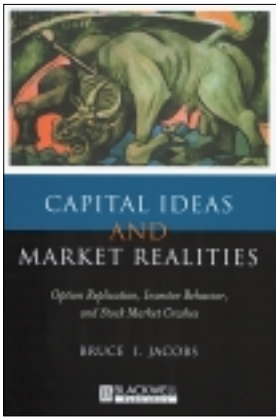


# Books



## The point of a put

### Capital Ideas and Market Realities

by Bruce Jacobs  
Blackwell Publishers  
399 pages, £55/\$68.95  
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This is an interesting book that it is marred in places by a journalistic tone, an unwarranted animus towards two of the protagonists, Hayne Leland and Mark Rubinstein, and a self-satisfied attitude.

The author's major thesis is that "certain investment strategies" – for which read dynamic (call or put) option replication – that "ignore the human element" can self-destruct, taking the market down with them. Jacobs takes the reader on an historical tour of major price movements in US equity markets since 1987. He also presents a good description of academic capital market theories, some of which, he argues, have led to developments that cause crises, while others attempt to explain them.

His argument can be paraphrased as follows. Buying a put option is similar to placing an order in advance for weekly deliveries of home heating oil throughout the winter season – providing that contracts are honoured, one is in no danger of freezing. Dynamic replication, on the other hand, corresponds to calling the heating oil company each week and asking for a delivery.

The author is implicitly arguing that spot market

purchasers of home heating oil (dynamic replicators) create volatility in the spot markets through their random market demands. He would blame this winter's run-up in heating oil prices on the lack of pre-purchases, which has exacerbated the problems caused by OPEC restrictions. What this analogy reveals is that supply and demand may not be equalised at current market prices, so that it takes price changes to reconcile inconsistencies between the plans of different agents. Downward-sloping demand curves and upward-sloping supply curves ensure an equilibrium intersection in the market for heating oil.

However, a significant difference between the market for heating oil and the market for stocks is that the demand for stocks is likely to be much less price elastic. To the extent that investors see stock price changes as permanent rather than as self-reversing, a drop in price may have little or no impact on the demand for stocks. In a pure random-walk market, expected returns are independent of past price changes – there is no reason to increase one's demand just because prices have fallen. Indeed, in such a market the rational investor's allocation to stock will depend only on his wealth. This can mean that he may sell stock as prices and his wealth drop, just as call option replicators do, or that he buys more

stock as prices fall (think of someone who wants to keep a 50:50 allocation between stock and cash).

In such a market fundamental analysis does not pay and if contingent plans to sell on a price drop do not match plans to buy there is nothing to stabilise prices and price changes can be sharp. Moreover, there is nothing to tell one in advance whether or not these contingent sale-and-purchase plans do match.

What are we to make of this as an explanation of the 1987 crash? Dynamic call replication (or portfolio insurance) can cause a crash if it is not anticipated, and investors mistakenly confuse the mechanistic sales of the portfolio insurers for informed selling, or are simply not willing to absorb the increased supply of stock.

Dynamic call replication might also cause a crash if fears of its possible impact on stock prices develop suddenly and lead to precautionary sales by other investors. Undoubtedly, confusion over its effects was a major factor in investors' minds at the time and may have helped to cause panic, although I tend to side with those who argue that the actual magnitude of portfolio insurance-related selling was too small in the absence of other factors to have been decisive.

In any case, dynamic call replication was a new phenomenon in 1987, and its effects were poorly understood and probably exaggerated. Over time, we would expect the

market to learn that portfolio insurance sales reverse themselves, destroying the random walk by creating negative auto-correlation in returns. Indeed, this lesson seems to have been learned (possibly too) well by investors in US equity markets. Since 1987, all price drops have been temporary "buying opportunities", making the demand for stock by many investors increase as prices drop.

So long as investors maintain a belief in price reversals there is little to fear from portfolio insurance. Moreover, the occasional price gap serves to remind investors of the dangers of dynamic replication and prevent it getting out of hand. The test will come when investor beliefs conform more closely to the random walk.

Jacobs worries that even if investors are buying puts rather than planning to dynamically synthesise them, the investment banks that are selling them are tempted to rely on dynamic replication themselves rather than offsetting purchases of volatility. He seems to ignore the possibility that sufficiently high prices for volatility will result in a greater supply of puts and calls or, more generally, that the demand for option-like convex payouts on the market will be matched by the demand for concave payouts that are provided by short option positions.

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