

## CALL OPTIONS AS LOTTERY TICKETS: DOES IT MATTER?

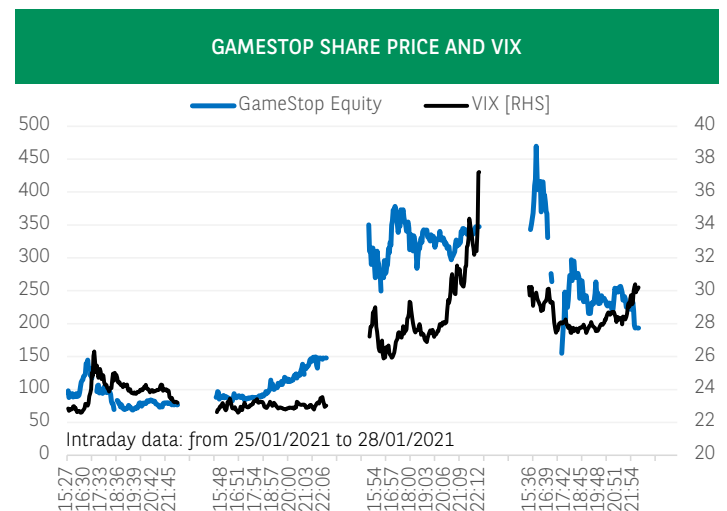
Academic research shows that certain investors look at single stock call options as lottery tickets. They are aware they can lose money but nurture the hope of very big gains. To some extent, the share price behaviour in recent days of certain US small cap stocks illustrates this thinking. The combination of herd-type momentum buying and a short squeeze has caused huge share price swings. Should this become a recurrent phenomenon, it might reduce the informational efficiency of equity prices, increase the required equity risk premium and influence the cost of capital of companies.

When buying lottery tickets, one should expect to lose money on average. Still, lotteries are popular because people are repeatedly willing to give up some money, hoping for a – very unlikely – outsized gain. In statistical terms, it means they expect a positive skewness in the distribution of possible outcomes. In Finance, similar behaviour has been noticed already many years ago giving rise to an abundant literature on ‘stocks as lotteries’ – in particular for stocks with a very low price, the so-called penny stocks – and ‘single stock call options as lottery tickets’. Investors are very much aware they can lose some money – when a call option expires out-of-the-money – but they nurture the hope of a very big gain<sup>1</sup>. To some extent, the share price behaviour in recent days of companies like GameStop provides a concrete illustration of such thinking. It has given rise to extensive media coverage but has also had ripple effects on the rest of the market, witness the rise in the VIX index<sup>2</sup>.

Can the recent events end up having broader repercussions? To a large degree, the answer depends on the breadth – how many stocks are concerned – and the intensity of the feedback loops. Consider a company with a small market capitalization and a low share price. Investors expecting the share price to go down have built considerable short positions. In addition, call options have been issued on the underlying stock. Suppose that some investors start to buy call options. This may trigger more purchases from others – herding behaviour – who have spotted the positive momentum or read about it on social media. The issuer of the call option needs to hedge his position and hence buys the underlying stock. If the share price increases enough, stop-losses may be triggered for those with short positions, further pushing up the price of the stock. If this happens simultaneously for several stocks, hedge funds that had shorted these stocks may decide to reduce their leverage<sup>3</sup>, causing a share price decline of companies where they had long positions. In such a scenario, equity market volatility would increase, which in turn could influence other asset

classes such as government bonds. The price of the latter typically rises when equity volatility spikes. It could also lead to a breakdown in the correlation between large cap equity indices and small cap indices. If this is a one-off event, it should a priori not have any lasting consequences. If it becomes a recurrent phenomenon, certain effects could last. It might lead to a reluctance to short certain stocks, which would reduce the informational efficiency of equity prices<sup>4</sup>. Stock pickers would need to take it into account as well. It could influence the decision of asset allocators whether to invest in small or large companies, in equities versus bonds. It could increase the required risk premium and influence the cost of capital of companies.

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SOURCE: BLOOMBERG, BNP PARIBAS

1. Such investors consider the distribution of possible outcomes to be positively skewed: “there is some probability to gain huge profits that can cover all the frequent small losses” (Source: <https://corporatefinanceinstitute.com>).

2. The VIX index “represents the market’s expectation of 30-day forward looking volatility”. It is derived from the prices of the S&P500 index options. Source: Investopedia.

3. On 28 January, Bloomberg TV reported hedge funds had been deleveraging at the fastest pace in 14 years.

4. According to Boehmer and Wu, “stock prices are more accurate when short sellers are more active”. Source: Ekkehart Boehmer and Juan Wu, Short selling and the price discovery process, *The Review of Financial Studies*, 2013.

In recent days, the combination of herd-type momentum buying and a short squeeze has caused huge price swings in certain US small cap stocks. Should this become a recurrent phenomenon, it might increase the required equity risk premium.

