Bend It Like Bernanke: How Government Guarantees Shape Asset Prices

Professor Bryan T. Kelly of Booth School of Business and co-authors (Prof. Hanno Lustig of UCLA and Stijn Van Nieuwerburg of New York University) undertake a field research to understand how government intervention and economic outcomes offer new insights into the effect of bailouts on the value of the banking sector.

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Europe is wrestling with structuring a bailout as its financial firms and broader economies teeter on a precipice. In America, markets look to Europe with unease while politicians bicker over whether stimulus and backstops established in 2008 and 2009 caused the current economic malaise or if it might have been worse. On top of all of this, uncertainty about the ultimate outcomes of government intervention exacerbate the deeper underlying uncertainty responsible for much or the morass.

According to a research undertaken by me, Hanno Lustig (UCLA) and Stijn Van Nieuwerburgh (New York University), we seek to better understand the interplay of government intervention and economic outcomes by offering new insights into the effect of bailouts on the value of the banking sector. When the government guarantees the survival of financial institutions that are “too systemically risky to fail,” it is effectively providing free crash insurance to anyone who holds bank stocks. More specifically, it insures the banking sector as a whole, but does not necessarily insure individual banks (contrast the bailouts of Bank of America and AIG with the failures of Lehman and Bear Stearns).

This effect can indeed be seen very clearly in the cost of put options on the financial sector ETF and put options on individual banks stocks (put options are in essence crash insurance for stocks and stock indices). We examine the prices of these insurance contracts prior to and during the 2007-2009 crisis in the US financial sector. What we...
find is that the cost of traded crash insurance (put options) on the entire financial sector become puzzlingly cheap during the crisis, while the prices of puts on individual banks remained high. In effect, the government substantially subsidised the cost of index puts, which drove down the prices investors were willing to pay for the traded version of this insurance. Since any individual bank may still fail amid a guarantee, the effect was much weaker for individual bank puts. The puzzling divergence in the cost of single name puts relative to index puts during the crisis is well-explained by the bailout story after all.

The analysis reveals how the anticipation of a bailout impacts the well known implied volatility skew for financial sector index puts, and for a basket of individual bank puts. Since the guarantee only kicks-in when things get especially bad, the deepest out-of-the-money puts (those furthest to the left) are most severely impacted. And because it is the system, and not the individual banks, that are being insured, it is the index skew and not the basket skew that is most affected. As a result, the bailout guarantee, or the “Bernanke put” as it is more affectionately known, bends the index skew downward.

What is the upshot? Besides explaining the puzzling behavior of banking sector put options during the crisis, we demonstrate how information in the divergence between index options and the basket of options can be used to identify how guarantees affect banks’ cost of capital and, ultimately, their total market value.

Using a model of financial disasters matched to the behavior of crashes over history, they are able to attribute as much as half of the market value of the US financial sector during the crisis to the bailout guarantee. According to our estimates, the average government support of banking sector equity amounted to $0.65 billion before the crisis (2003-July 2007), and rose to $42.44 billion during the crisis (August 2007-June 2009), peaking at well over $150 billion along the way. At best we can only speculate about what kinds of resources the government consumes to implement this guarantee that props up bank stocks. But we can be certain that those resources ultimately come from taxpayer pockets.

This model also solves the problem of how to measure systemic risk in a world where the government distorts market prices. Why does this matter? History tells us that economic downturns following financial crises are deep and persistent. Smarter measurement of systemic risks and clearer understanding of the impacts of preventative government policies on asset markets helps to successfully avoid crises when possible and better navigate them when they strike.