

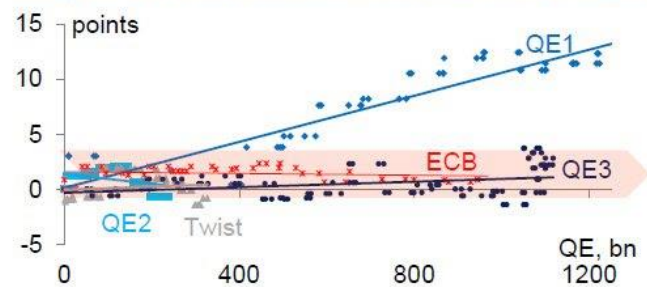
## The Poverty of Stimulus

Contrary to popular belief, few laws are immutable in economics. While physics presents us with maybe 4 laws that explain something like 90% of the observed universe, economics has 90 laws that explain perhaps 3% of observed behavior. The distinction is staggering, especially considering the amount of talking heads that claim the opposite. Nonetheless, there are a set of largely acceptable laws that replicate out-of-sample fairly well. Among them is the law of diminishing returns, which states that with each increase in inputs you have a decrease in the marginal output. In other words, eating Ben & Jerry's half baked makes you happy, but the happiness generated increases at a decreasing rate with each additional bite. It's a simple law that seemingly applies to a myriad of economic phenomena, including stimulus.

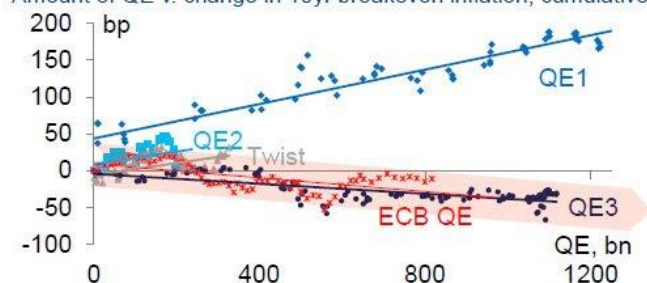
Lately I've been occupied with making sense of the "unorthodox" policies pursued by global central banks. Reading through the materials of the Jackson Hole symposium just made me more uncomfortable. Specifically, I've been wondering how long can this extraordinary configuration of monetary policy go on. Theoretically, it appears that there are very little limits to its extension. Yields can continue racing to the bottom, asset prices can continue rising, and volatility can keep getting squeezed. Nevertheless, surely the law of diminishing returns must be kicking in. That should in turn, at least, get policy makers in the mindset that perhaps they are pushing on a string.

The graph below (courtesy of The Daily Shot), eloquently illustrates this law in action. The plots demonstrate how, with each successive round of stimulus, the economic impacts have been more and more muted and even reversing. Unsurprisingly, the only upward sloping line of best fit corresponds to the first round of QE. Each successive policy action appears to have had a substantially diminished impact on inflation expectations and economic activity. Huh, I guess it is immutable.

Amount of QE v. change in domestic composite PMI, cumulative\*



Amount of QE v. change in 10yr breakeven inflation, cumulative\*



Source: Citi Research, Haver. \*: Cumulative change from level when programme started. Domestic currency.

Source: The Daily Shot/ Citi Research

While it appears that the world is set on continuing extraordinary stimulus, with central banks purchasing everything from corporate bonds to ETFs and even equities, the graphs suggest that their actions will do little to generate the very things they were intended to do. Thus we are left to contemplate the poverty of stimulus.

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