

# PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

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Viewpoints

## The Bond Dust Bowl (An Unintended Consequence)

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We live in a world of imperfect information, which can at times lead to poor decision making. We've all done it; making what we believe is the best decision at the time, only to look back with regret (some decisions more than others). From the cane toads in Australia (<http://www.livescience.com/29560-cane-toad-conquest-invades-australia.html>) to the Lake Victoria Nile perch ([https://en.wikipedia.org/wiki/Nile\\_perch](https://en.wikipedia.org/wiki/Nile_perch)), history is riddled with examples of poor decisions leading to unintended consequences. In my opinion, by far the most interesting case of an unintended consequence was the Dust Bowl of the 1930s.

The Great Plains of the U.S. extend from southeast Colorado, southwest Kansas and the panhandles of Oklahoma and Texas. They receive less than 20 inches of rain a year, are prone to droughts and face a constant, steady wind. The conditions are so harsh early explorers called it "The Great American Desert." The ecosystem evolved to prairies filled with a short grass called buffalo grass that sustained the soil during the droughts and constant wind. As you can imagine, the area was generally uninhabited. To encourage settlement, the U.S. government enacted the Homestead Act of 1862, offering 160 acre plots to settlers in the area. Settlers began populating the region following

### The Dust Bowl



Sources: googleimages

the completion of the First Transcontinental Railway and a government report claiming the climate in the region had permanently changed (a report that was issued directly after an unusually wet period for the region). Initially, most settlers turned to cattle ranching, but the harsh winters and brief droughts challenged the settlers and restricted further settlement. Recognizing the challenge, the government expanded the 160 acre plot offer to 320-640 acre plots. Waves of settlers, mostly from Europe, poured into the region and a return of the unusually wet period seemed to confirm the earlier government report. Then it happened.

During World War I, agricultural demand increased, particularly for wheat. Rather than cattle ranching, settlers turned to wheat farming and the area used for cultivation increased dramatically from 1900 to the early 1930s. These settlers, with little to no prior farming experience, used a one-way plow and/or tractors to plant the seeds. Initially, these farmers experienced amazing success. The soil was rich, wheat prices remained high and the climate was supportive. They were so successful, the “suitcase farmer” became popular – people from the city bought a plot of land, planted seed, and came back at harvest time. It was like growing money, and wheat farming became a speculative business. “The rain follows the plow” became a popular phrase as land developers (modern day brokers) added to the speculative frenzy.

Then, in the early 1930s, the Great Plains entered into a dry season. As there was no longer any buffalo grass to protect the soil, the result was one of the worst ecological disasters in history. After years of overcultivation, the soil (now dried dirt) was turned into fine particles. When the still constant winds blew across the vast flat Plains, dust storms developed. These storms could be so massive and encompassing they could turn the brightest day into the darkest night. One of the worst was dubbed Black Sunday on April 14, 1935.

*At its peak, the dust cloud was 200 miles wide, moved at 65 miles per hour and carried twice as much dirt in one storm as the U.S. excavated in digging the Panama Canal over an entire decade.*

The Black Sunday storm was so large it reached Washington D.C. and FDR is said to have commented that you could get a little of Oklahoma in the Oval Office. The government’s desire to settle the land and the farmer’s desire for a chance at prosperity had tremendous unintended consequences.



Sources: <http://www.weru.ksu.edu>

Over the past decade or so, the U.S. has been experiencing periods of droughts in various parts of the country. Having lived in Austin, Texas for several years during a drought classified as “Exceptional” (the most severe type), the question of whether the Dust Bowl might return has been raised. I’ll leave that one to the experts; however, we do have other forms of government intervention that are now materializing into some unintended consequences – in particular, interest rates.

Before Lehman Brothers and the Credit Crisis (you know, the pre-historic age), monetary policy was fairly simple: lower the Fed Funds rate to ease policy and raise the Funds rate to tighten. Modern policy, post the Credit Crisis, has become more complex (at least for developed market central banks). Given that the major central banks still maintain a zero-interest rate policy (ZIRP; i.e., the Funds rate is still essentially at zero), in order to ease monetary conditions, some form of quantitative easing (QE) is utilized. A QE program usually involves the purchase of high quality debt, mostly sovereign bonds, with the goal of pushing interest rates so low that investors have no choice but to invest in riskier assets. As a result, the price of riskier assets, mostly equities, moves higher and creates a wealth effect that should result in increased consumption and economic growth. While the



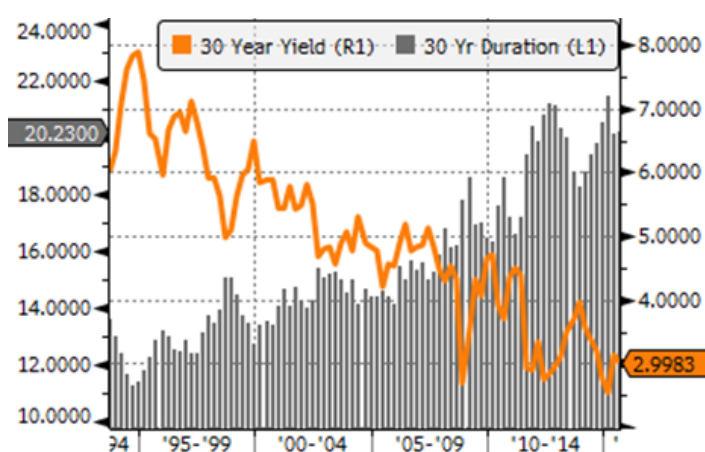
Sources: Hedgeye

Fed has certainly accomplished the goal of pushing equity prices higher, the economic impacts have been less than desirable, but still positive. Much like the early settlers in the Great Plains, *there has been a lot of early success to QE. But is there a hidden cost or unintended consequence of pushing rates lower to fuel an equity rally?*

I've been a bond geek for most of my career and we like to use terms like duration, convexity and term premium to sound smart like those derivative folks with their Greeks. Despite all the fancy formulas and complex descriptions, the ideas are actually fairly simple. For example, duration is just how much will the price of a bond move with a 1% change in rates. Easy enough and no, I won't bore you with convexity. So how is duration calculated? It's a simple present value weighted cash flow analysis. For a basic bond we know the maturity, the coupons and payment dates so the calculation is straightforward. Given the cash-flows are weighted, the duration of a bond will vary primarily based upon maturity (the largest cash flow), with the coupon payments being a secondary driver. To keep it straight, a zero coupon bond (i.e., no interest payments) will have a duration essentially matching the maturity. Thus, the higher the coupon, the shorter the duration and vice versa. Why is this important? Remember duration is the approximation for how much the price of a bond will move given a 1% change in rates. So as the Fed has pushed rates lower to fuel an equity rally, the duration of bonds has moved higher... much higher.

As interest rates (measured here with the 30-year bond) moved steadily lower in the 1990s from 8% toward 5%, durations moved higher from 12 to 15. Durations stabilized in the early 2000s around 14-15, but started moving higher once again in 2006. Since then, durations have moved from 14 to a peak near 22. By comparison, a 1% move in interest rates would change the price of a 30-year bond by 14% in 2000, but now the price would change by nearly 22%. An investor focused on equities might hear on CNBC that the 30-year bond changed 10 basis points (bps) in yield and think, so what? Ten bps is not going to change the economy or outlook. They're correct, 10 bps won't change the economy, but it will have an impact on total return. Why?

U.S. 30-YEAR BOND DURATION AND RATES

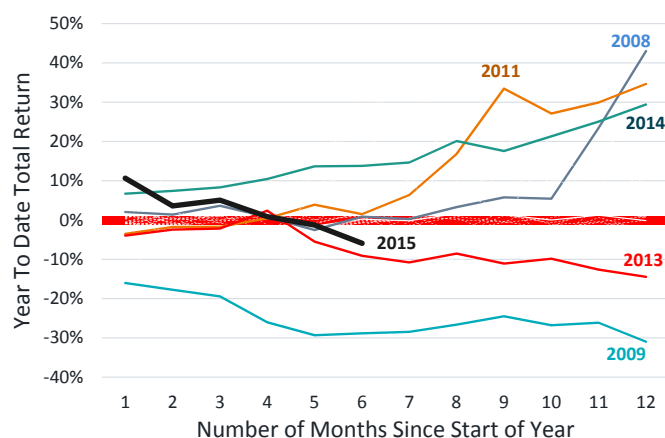


Sources: US Treasury, Bloomberg, Verus

The total return of a bond is driven primarily by the change in interest rates and the duration of the bond. As rates move higher or lower, the total returns will be negative or positive with the magnitude of the total return determined by how much rates have moved and duration.

In 2008, the 30-year bond returned 42%; the best year ever. Not only the best year since 1978 (as far back as Bloomberg allowed us to calculate), but based upon external total return analysis dating back to 1871, the 30-year bond has never, ever had a better year. What drove the returns? Did interest rates experience a record move lower? No, not even close. In 2008, 30-year bonds moved 178 bps lower in yield (compared to 1982 when rates moved 322 bps lower). Why was 2008 the best year ever for total return? Duration increased from 13 in 1982, to 18 in 2008. But 2008 has not been an isolated year.

30-YEAR BOND TOTAL RETURN

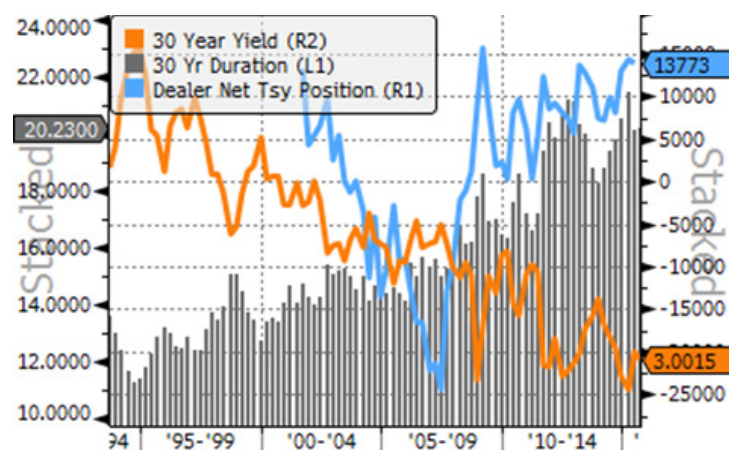


Sources: US Treasury, Bloomberg, MPI, Verus



In 2011, the total return was nearly 35% (the third best year), followed by 2014 with a 30% return (the fourth best year). What drove the total returns? Did rates experience outsized moves in 2011 or 2014? No, in fact the 144 bps lower in 2011, and 122 bps lower in 2014 is only slightly larger than the average change of 101 bps since 1978. Similar to 2008, the higher durations combined with the change in rates elevated the total return to one of the best in history. The single worst year was 2009 with a total return of -31%, and the second worst year was 2013 with a total return of -15%. Why was the move in 2009 so bad? Much like 2008, 2011, and 2014, the historically high duration combined with a near 300 bps move higher in interest rates resulted in the significant negative total return. So far in 2015, the bond market has shown its split personalities – with January posting one of the best single months ever of 10% total return, and then one of the worst months in June with a -6% return. Thus, the bond market is not just about how many bps it moves over a given day, week or month, it's also about how long durations have become and the impact on total return.

30-YEAR BOND DURATION, RATES AND POSITION



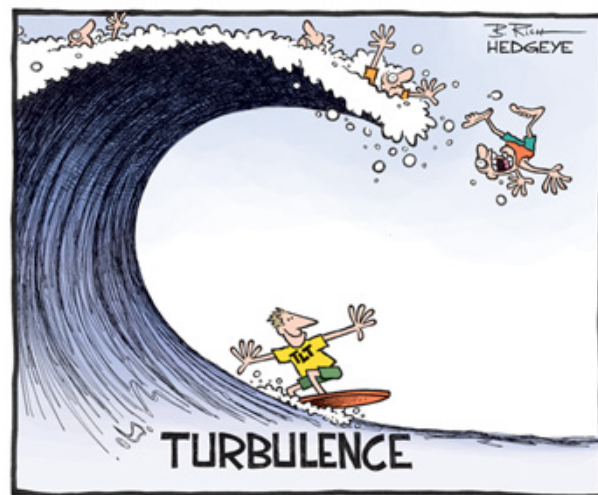
Sources: US Treasury, Federal Reserve, Bloomberg, Verus

If most portfolios or investors were neutral fixed income (i.e., in line with their benchmark allocation or duration), the changes in total return would not be a significant topic. However, as we all know, everyone seems to have a view on interest rates and nearly all of them believe rates are moving higher. The outlook for higher rates has become so widely held, nearly 100% of the economists surveyed by Bloomberg have been forecasting higher rates for the past several years. But it's not just economists, investors have been short interest rates as well, as is reflected in the JP Morgan client survey showing extreme net short positions. For these economists, strategists and investors to be short interest rates, somebody has to be on the other side: That's been the dealers. In fact, the net primary dealer position in

Treasury securities with a maturity greater than 11 years (I know it sounds awfully specific, it's just how the Fed defines it) is near a record long. So what happens when interest rates move 50 or 100 bps? The winners are ecstatic and double their position, while the losers freak out, cover their shorts, and create a yield flash crash. You either get the bond call really right, or really wrong.

## Conclusion

The encouragement to settle the Great Plains and utilize the land for an agricultural purpose not suited for the ecosystem resulted in one of the country's greatest natural disasters. By plowing up the buffalo grass and overcultivating the soil, the settlers were unintentionally creating conditions for the epic dust storms. Once the drought started, the consequences were severe. Interest rates have been the fertile ground of monetary policy since Alan Greenspan replaced Paul Volcker as Chairman of the Federal Reserve. With inflation steadily declining, the Federal Reserve has been able to continuously press interest rates lower to stimulate the economy, first via credit growth and now QE. The constant pressure of lower yields and higher durations has resulted in an increased volatility in total returns for bonds. Just as the prairies of the Great Plains needed the Buffalo grass to sustain the soil during the droughts and constant winds, the bond market needs the higher bond coupons to keep the duration manageable and suppress the volatility. Despite the recent move higher in interest rates, rates remain historically low and durations



Sources: Hedgeye

historically high. Thereby, we should expect these dust storms of volatility in total return in bonds to continue. Was the yield flash crash the Black Sunday for the bond market or is a bigger dust storm still on the horizon? Time will tell, but with the extremes in positioning, we can be sure there will be big winners and big losers.

## GETTING SIDETRACKED: IT'S A BONG BÔNG

What's a bubble? There is no consistent definition, but having managed portfolios through what I've come to think of as the Bubble Era (1998 -2015), a bubble is contained not just in price, but in attitude. Take, for example, 2007, while the U.S. credit/housing bubble was peaking, the Vietnamese Ho Chi Minh stock index was experiencing its own bubble, increasing an astounding 192% in price in just 7 months. The entire country seemed in a sudden rush to buy shares and Vietnamese authorities struggled to get stock-market obsessed civil servants to focus on their day jobs. The environment reached manic proportions when investors, with no prior experience, bought shares on "an unregulated informal market for shares in partially-privatized state-owned companies that may or may not list on the formal exchange someday."<sup>1</sup> The Vietnamese word Bong Bông, when spoken in Vietnamese, sounds very much like the English word (bubble), became a topic of discussion. The result is no surprise; a 81% decline over the following 2 years.

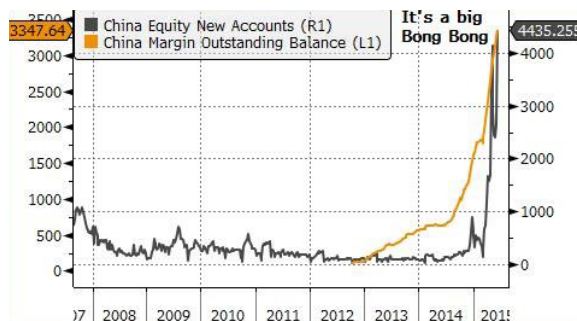
FOLLOW THE HO CHI MINH TRAIL



Sources: Bloomberg, Verus

Not to be outdone by its Asian counterparts, China has created... a big Bong Bông. By now, we've all heard stories of the local farmer at the market with his laptop trading shares. But consider this, with construction contracts down 40% (which tells us something about the economy), China Railway Construction has turned from construction to financial investing, with its financial assets up 50% since the beginning of the year. It now owns shares to a liquor maker, retailer, and a property developer. A lighting company has laid off all 100 of its workers and now no longer manufactures anything, rather the owner spends his time trading stocks on behalf of the company. Says one Chinese investor, "Nowadays, the first thing my colleagues do in the morning is talk about stocks, with their faces all turning red in excitement...They have absolutely gone crazy."<sup>2</sup> Yes, indeed they have gone crazy, just look at the parabolic increase in the number of new accounts and margin. These new investors are strikingly unsophisticated with two-thirds having left school before the age of 15, and 6% of them illiterate. For more on the Chinese equity market troubles, keep a lookout for an upcoming Market Update.

CHINA'S BIG BONG BÔNG



Sources: China Security Depository and Clearing, China Securities Finance Corp Ltd., Bloomberg, Verus

<sup>1</sup> Kazmin, Amy. "Stock Market Mania Grips Vietnam's Middle Class." *Financial Times*. N.p., 20 Feb. 2007. Web. 11 July 2015.

<sup>2</sup> Hong, Shen, and Chao Deng. "As Chinese Stocks Rise, Beijing Wins." *The Wall Street Journal*. N.p., 18 May 2015. Web. 10 July 2015.

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