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Revelations for financial markets from the Dust Bowl

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Historical Distributions

Actuaries are often accused of driving while looking only at the rear view mirror, and it is easy to fall into that trap. This can be due to an evolving environment (think climate change) or using a data set that is not complete (think cat cycles or recent interest rates). The analyst needs to consider this when modeling future events, using longer periods or performing stress tests to determine materiality.

Dust Bowl

Ken Burns recently completed a documentary on the Dust Bowl of the 1930s which was fascinating to watch. Historical events that are not considered in our current data are learning opportunities. During the 1920s life was easy on the plains, as good climate encouraged farmers to convert grasslands to wheat fields. This worked until it didn’t. There was a reason why grass put down roots 7 or more feet deep. The region experiences droughts such as occurred in the 1930s and again today. The farming methods of the 1920s did not respect the cyclical nature of the growing seasons and failed crops led to winds picking up loose dirt and carrying it in huge storms to other states. This was described in the Pulitzer Prize winning Grapes of Wrath by John Steinbeck.

While watching this show I started to think about similarities with the recent financial crisis. After the dot.com crash, until the financial crisis in 2008, times were considered good and markets were stable (defined as level or always providing good surprises). There were few negative outliers. Unfortunately this provided perfect conditions for various scams (e.g., Bernie Madoff) and gave the impression that those monitoring risk were simply a cost center. The housing market led to a crisis in confidence and liquidity shortfall in the markets generally, and suddenly risk mattered once again.

What did we learn, either from the Dust Bowl or from the financial crisis? Farming techniques were updated to better survive dry periods. Recent projections show the region impacted by the Dust Bowl will be stressed even further in the next century. This will create its own real life stress test in the region. Northern latitudes will warm, generating greater agricultural options and providing an opportunity to introduce better methods initially. But I still wonder what we learned from the financial crisis. Incentives are not aligned between management and owners. Culture is a risk itself at many companies, with favorites chosen and allowed to work unimpeded. Instead we have a system where political favorites are bailed out and others left to rot. Bailed out managements are not removed by regulators and quickly return to their wayward paths.

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Random Thoughts

Market liquidity is driven by differences of opinion. If markets were efficient this would not happen. But if one investor thinks an asset is worth a different amount than another investor, a transaction is likely to occur.

Diversification using asset allocation techniques requires low correlations between asset classes to work properly. Correlations are not constant, and tend to be low during stable periods and high during periods of stress. If diversification fails during times of stress, does that mean asset allocation is a failed technique?

Election fact: historically senior citizens have voted Republican. Not in this Presidential election, where those over 65 voted 56% Romney and 44% Obama. This was offset by the 18-29 split of 60% Obama to 37% Romney.

Thinking out loud – we hear analysts say that long-term returns are dominated by dividends. Does this mean retained earnings are wasted?

Pension plan valuation should match the level of conservatism with the age of the plan (more conservative early in the lifecycle). Only a closed block should allow best estimate assumptions. Open plans should not be allowed to skip a contribution or negotiate higher benefits without walling off the original benefit stream.

Pension plan actuarial equivalence does not take into account the higher benefit due to inflation at a later time (for those still working).

Based on my experience I think a person's definition of risk varies with their expertise. It starts with downside risk, moves to optimization and efficient markets, then finally to the risk of not meeting goals.

How much better is the US trade surplus because of fracking and the reduction in oil imports that accompanies it?

Everything that counts can't be counted. Not original but still a great quote.

In Daniel Kahneman's Thinking, Fast and Slow, covering his lifetime of prospect theory development, he describes this scenario – yell at bad behavior, congratulate good behavior. He argues that this is really just regression to the mean? Does the yelling really help? As an athlete, I never thought it did anything but distract me, but for others it seemed to increase their focus.

Do we learn more through mistakes than trying to get it right the first time? Evolution versus revolution. It has worked pretty well for nature over billions of years!

If regulators are serious about implementing ERM, and I have not seen that they are, they need truly independent peer reviewers – hired by regulators but without financial ties to the company. Auditors need not apply. Don't listen to what they say. Talk to companies after they have gone through a risk review.

Scenario Planning

What follows are a base set of scenarios that companies/individuals could use to plan for the next few years. Some analysis will reflect quantitative tools but all should look at the risks on a qualitative basis first. Keep in mind that when models are used for extreme scenarios they do not perform very well.

- Higher interest rates and inflation: grade 3% per year until you get to 12%
- Qualitatively consider a 20% inflationary environment
- Flat equity markets combined with higher inflation
- Falling dollar – could combine with high interest rate scenario
- Global climate change – how will this impact your business (qualitatively)
- Liquidity risk – assume a tail scenario with contagion
- Scenario where no diversification is allowed between risks
- Equity returns drop by 40% and hold level for 5 years (to allow hedges to expire)

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