



WOODY BROCK'S OPUS:

UNCONVENTIONAL THINKING ABOUT PENSION MANAGEMENT

"The history of science makes it clear that most important problems have been solved by deductive logic. Information [only] reenters the picture in the final stage of scientific discovery process known as 'confirmation'. Data-gathering experiments are run to test the hypotheses that have been deduced...."

Woody Brock, quoted from
"American Gridlock: Commonsense
Solutions to the Economic Crises" (2012)

Deductive Reasoning: the Game Changer

Despite its breath-taking scope, the most important message in Woody Brock's new book may be that we are far too quick to jump on any numbers-based 'study' that appears to solve an important problem. He is right to remind us that the really powerful solutions usually originate not from numerical studies, but from first-principles deductive reasoning. A retracing of our personal deductive 'discovery' journey in the field of pension design and management over four decades confirms this truth. For example, consider the following four personal discovery statements:

- For a pension plan to be sustainable, it has to be both transparent and inter-generationally fair.
- For a pension plan to be sustainable, it has to be both affordable to younger participants and offer security to the older ones.
- Excellence in pension management requires mission clarity and autonomy of action, good governance, sensible investment beliefs, scale, and the right people.
- Risk premiums in financial markets vary, depending on the collective mindset of market participants.

Deductive logic tells us that pension design and management structures built on these foundations will be both sustainable and measurably effective. We should not be surprised that a growing body of well-crafted empirical studies is now confirming these four principles.

This *Letter* shines a spotlight on three pieces of powerful deductive logic in Brock's book, and places them in pension design and pension management contexts: 1. making the important distinction between the causes of investment market risk and mechanisms to control it; 2. making the important distinction between 'bad' fiscal deficits and 'good' public expenditures such as wealth-creating infrastructure investing; and 3. reconciling societal requirements for both needs-based and contribution-based concepts of fairness without descending into mindless, ideology-based, 'left'-'right' shouting matches.

Causes of Investment Market Risk

In deducing his investment market risk model, Brock (actually, Brock credits Stanford University's Mordecai Kurz and calls it the Stanford Model) starts with the distributions of expectations investors have at any point in time.

He contrasts the general ‘real world’ Stanford Model where expectations can differ and be wrong, with the special case Rational Expectations/Efficient Markets Model where all investors have the same ‘right’ expectations. In this special case, new information shifts expectations, but market volatility is limited, as all investors interpret the new information the same, correct way.

The ‘real world’ Stanford Model is much messier. Now new information leads to the realization by many investors their prior expectations were wrong. Generally, this will lead to a more pronounced degree of expectations revision and portfolio revision. The greater the Correlation of Forecast Mistakes, the more pronounced the revision of existing portfolios, and hence, the more pronounced the resulting volatility in the prices of financial assets. This would not be a great problem if all major market risk components could be hedged. Unfortunately, there are no good hedges for all major market risk components. Also, some hedges that do exist work well in good times, but fail in the periods of distress when they are needed most.

Now the next ‘real world’ problem arises: if new information shows prior expectations to be wrong, how can we be sure that we will not just be wrong in a new way after we revise our expectations? Brock calls this problem Pricing Model Uncertainty. If most investors don’t know what the right pricing model is, the trend becomes everyone’s friend. This exacerbates the degree to which prices will over/undershoot. There is a third element in Stanford Model of investment market risk: Excess Leverage, which further amplifies financial risk exposures. This amplification process can be highly non-linear and explosive, as the Global Financial Crisis (GFC) of 2008 demonstrated.

So here is an investment market risk model that explains observed ‘real world’ market volatility (and the time-variance in that volatility) from first principles: from Correlated Forecast Mistakes, to Pricing Model Uncertainty, to Excess Leverage. Brock notes that this dynamic can unfold without the stupidity, greed, conflicts of interest, and perverse incentive structures that accompanied the GFC story. But without doubt, these malfeasance elements deepened the GFC further.

Managing Investment Market Risk

Understanding the drivers of investment market risk is a good starting point for deciding how to manage it. Brock’s book takes a macro-perspective, and focuses on the regulatory implications of the Stanford Model of investment market risk. It leads to two types of policy reforms:

Incentives: improve investment product and financial balance sheet transparency (including degree of embedded leverage); require incentive compensation schemes to encompass risk-adjusted multi-year investment experience.

Constraints: separate the proprietary trading and banking functions; place explicit limits on leverage.

In contrast, this *Letter* takes a micro-perspective, and focuses on what the Stanford model implies for rethinking financial risk management within a pension fund:

Risk Bearing, Risk Appetite, and Risk Constraints: an obvious risk management pre-requisite is to understand who the risk bearers are, and what their appetite for risk bearing is; this should logically lead to a green-amber-red light risk control protocol. The organization’s compensation system should be explicitly integrated with its risk management system.

Correlated Forecast Mistakes: assessing this becomes a standard agenda item for the risk management function of the organization. What kind of ‘group think’ is driving the prices of financial assets today, and what is the degree of agreement among investors? There were two extreme cases in the last decade: 1. the tech bubble at the turn of the century and 2. the banking system-driven real estate bubble that began a few years later and triggered the GFC in 2008. Long-term readers of our *Letters* will recall that we have been discussing longer term capital markets prospects in a 10-20 year ‘investment era’ framework for decades. (See “Repricing Risk: Is the Equity Risk Premium Big Enough Now?” September 2010, for our most recent effort. That *Letter* concluded that with the S&P500 at 1150 and an expected ERP of 4.5%, forecast mistakes were not obviously highly correlated at that time).

Pricing Model Uncertainty: this is a major conundrum for short-horizon investors. Despite bravado appearances to the contrary, there is usually a great deal of uncertainty in predictions of financial asset prices six months hence. And despite protestations to the contrary, most investors feel compelled to play this short-horizon game. This gives genuine long-horizon investors a material advantage. They are not overly concerned with predicting where financial assets might be priced six months from now. Instead, they focus on the cost of acquiring long-horizon cash-flows (e.g., dividends) today, and on the risk premiums embedded in those prices. This was the pricing model that led us to conclude in the September 2010 *Letter* that with an expected ERP of 4.5%, the S&P500 represented long-term ‘fair value’ at 1150 at that time. With the index now at 1350, we plan to redo these calculations later this year.

Excess Leverage: assessing the gaps between actual and optimal levels of leverage in the four major sectors (i.e., consumer, corporate, government, financial) of the globe’s key economies becomes a standard agenda item for the risk management function of the organization. This of course begs the complex question of what ‘optimal’ levels of leverage in these sectors are. A starting first approximation might be to use the average levels over the course of the last 60 years as proxies.

Are these four dimensions embedded in the risk management structure of your organization? If not, should they be?

The Case for Infrastructure Investment Now

Another piece of deductive logic in Brock’s book starts with the logical premise that private and public investments are both needed in societies that strive to maximize ‘the public good’. The optimal mix between the two will vary over time, with estimates of prospective expected returns signaling their respective attractiveness. Despite the imperfections noted in the risk discussion above, financial markets and standardized accounting protocols provide tangible signals for private investment prospects in the corporate and household sectors.

There are, however, two important impediments to the generation of tangible investment attractiveness signals in the public sector:

No Market Signals: There is typically not a direct market price that helps to estimate the expected return on a new bridge (or tunnel, road, railway, energy, water, or sewage system, school, hospital, etc). Further, the direct return on any such project is often not the whole story. Spillover effects (e.g., shortened commute times, a healthier, better-educated workforce) can be equally important.

Accounting Deficiencies: while private sector investments are capitalized and depreciated over their expected useful lives, this is often not the case in the public sector. Now infrastructure financing costs are expensed as they are incurred, and hence treated no differently from expenditures on entitlement programs and the annual costs of running the government in calculating public sector fiscal deficits. In other words, public accounting protocols today don’t clearly separate current expenditures from capital expenditures that should typically be amortized over multiple decades.

Brock argues it is essential to overcome these two problems, as many developed economies are in situations today where there is a surfeit of private sector capital (e.g. over-built housing sectors) and a serious shortage of public sector capital (e.g., neglected transportation systems). There is a further compelling reason to initiate major infrastructure investment programs now. Rebuilding neglected public infrastructure over the course of the next decade is the most direct path to regenerating solid economic growth and to making a serious dent in the still far too-high unemployment rates.

Addressing the Two Impediments

Brock proposes new national/regional infrastructure banks to overcome the ‘no market signals’ problem explained above. Such institutions should be able to operate at arms-length from political influence, and have sufficient scale to attract and retain top-flight expertise and handle large transactions. This ‘success’ formula sounds very much like ours for high-performance pension funds. We listed this as one of our own deductive discoveries on the front page. Indeed, a number of the funds that pass the ‘high-performance’ test have already established top-flight private markets teams capable of sourcing, funding, and syndicating major infrastructure projects both individually and in partnerships with each other. They would be natural partners for the

proposed national/regional infrastructure banks. Ironically, 'high-performance' funds have had the most difficulty getting established in the USA and the UK, the countries Brock identifies as most in need of initiating major infrastructure projects now.

If infrastructure investing is to get a significant boost, dealing with the 'accounting deficiencies' problem in the public sector must also be a high priority. We must have government accounts that clearly separate capital expenditures from normal recurring expenditures. Without this separation, fiscal deficit numbers contain little information. A country that reports a 10% of GDP deficit due to an excess of normal recurring expenditures over tax revenues is in a very different place than one that reports a 10% of GDP deficit due to financing a carefully thought-out infrastructure investment program that will materially boost the country's growth and productivity over coming decades.

Fair Shares

In this *Letter's* front-page listing of our own deductive discoveries, we included intergenerational fairness as an important feature of sustainable pension systems. Brock reaches the same conclusion at the broader level of sustainable societies. He notes that the focus of free-market economics is efficiency, not fairness. From a fairness perspective, there are two competing ethical norms that must be reconciled:

The Contribution Principle requires that workers receive compensation according to their economic contribution;

The Needs Principle requires that members of society receive financial sustenance according to their relative needs.

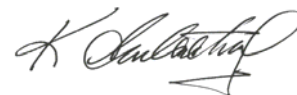
In the book's final chapter, Brock urges us to think about how to reconcile these competing norms deductively, rather than through emotion-charged shouting matches that resolve nothing. He offers a number of deductive resolution paths, including the following.

Welfare economists Arrow and Debreu deduced the compatibility of the two norms from first principles in the early 1950s. The key was to introduce uncertainty into classical economic theory. Now welfare maximization in democratic capitalism requires the existence of a complete set of uncertainty-hedging instruments. The practical problem is that while insurance markets exist for some uncertainties (e.g., when you will die), this is not the case for many others (e.g., whether you are born to rich or poor parents). A progressive tax code is one way to remedy the deficiency of missing insurance markets. Seen this context, such a code is no longer an ethical construct, but a rational response to a market failure. It is simply a method of restoring the distribution of income and wealth to where it would be in the absence of market failure.

Keep this argument in mind next time you hear tiresome tax-code arguments framed in the traditional ideological 'left-right' space!

Unconventional Thinking

The pension design and management field has suffered from too much conventional thinking for too long. Too many people have been too intellectually lazy to examine their conventional beliefs using first-principles deductive logic. The goal of this *Letter* has been to demonstrate the power of this approach. It can mean the difference between success and failure in both pensions, and in democratic capitalism.



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