

## Journey to the Center of the Average

By Mariko Gordon

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It's a truth that's tough to accept, but by the Asian parenting standards set forth by Amy Chua of [Tiger Mom](#) fame, **my mother, though Asian, was a complete failure.**

**She never** made me take piano lessons.

**She never** knew from one day to the next whether I did my homework or not.

**She waited** until the day I received my high school diploma, when I was up to my ears in flower leis, to ask why my grade point average wasn't high enough for me to graduate with honors. (Jeez, I thought, I got into Princeton for pete's sake. What are you hassling me for?)

**So when I met [Kaiser Fung](#) at a Princeton alumni event** - he with the degrees from Princeton, Harvard and Cambridge - I was willing to bet his mother was a much better Asian parent than mine. **You don't rack up fancy-pants degrees at that clip by going on too many sleepovers.**

In addition to being great company, Kaiser is a statistician extraordinaire. His book [Numbers Rule Your World](#) (**Soundbite: it's the *Freakonomics* of statistics**) is so **interesting and so fun to read** that we sent it to all our clients as a New Year's present. When he inscribed my copy with the words "Don't be average!", I was hooked. That, after all, is my battle cry.

And while one of us is undereducated and the other is not, we both equally despise that single-point estimate otherwise known as an average. **"Averages are like sleeping pills," says Kaiser. "They put you in a state of stupor, and if you overdose, they may kill you."**

In our business, **there are a couple of ways we get averages wrong, both of which have to do with a failure to "unpack" the numbers.** The first has to do with the components of average returns; the second relates to extrapolating trends from averages (and compounding them into idiocy).



## **Average returns need to be unpacked**

Consider the compound average growth rate of a business or a portfolio. Kaiser said he's been struck by the number of business people who have trouble wrapping their heads around the **dangers inherent in keying into an average return that does not take variability into account.**

As he points out, **"While the compound annual growth rate provides a useful basic summary of the past, it conveys a false sense of stability when used to estimate the future."**

For example, let's say three investment managers have a return of 10%. One may have suspiciously little variability (think Bernie Madoff). Another may have *huge swings*, deep into negative territory and high into positive. And a third may have moderate variability (i.e., some, but not the kind that keeps you up at night).

**So I ask you, which Goldilocks-inspired 10% return do you want?** Too little, too much, or just right?

Whichever one you pick, it should be clear that while they each share "10% CAGR," they are anything but similar. They likely reflect humongous differences in financing needs, business models, leverage and risk. Without unpacking the average, you don't know which bowl of porridge to choose.

Kaiser goes on to explain that **part of the seduction of the average is our urge to ignore variability:** "Such variability leads to uncertainty, which creates anxiety."

Paradoxically, variability-inspired anxiety (even if the average return *justifies* the variability) will cause a money manager to be fired. **If you constantly flip-flop from the top to the bottom of the performance tables - even if you compound fabulously over time - you're toast.** (If there's a reason so many index-huggers passing for active managers continue to survive despite mediocre returns, that's it.)

And while variability is something investors pay more attention to these days than they used to, **even those single-point measures of volatility leave something to be desired.** No one number can tell you what you need to know.

## **Trend analysis needs to be unpacked**

Aside from variability, averages have other traps embedded in them. Consider, for example, the modeling of financial statements and the howlers caused by gross abuse of an average. **Kaiser has a [brilliant example of this](#) on his blog [Junk Charts](#),** regarding a calculation that seeks to justify the valuation of Facebook.



The investment case for Facebook in this instance is based on extrapolating the *trend* of two average growth rates, **while paying no heed to the components that make up those growth rates** (and which logically tell you it's impossible).

**You can't straight-line an average growth rate into the future without unpacking all the bits that are needed to make it happen.** If you could, you might erroneously assume that my 14-year-old son, who grew 10 inches last year, would be 8' 2" by the time he receives his high school diploma.

Remember the whole Dot Com bust in 2000, when valuations were based on eyeballs? **It appears that in just a decade, a new generation of analysts ignorant of the perils of creative metrics, has emerged.**

As a statistician, Kaiser confirms my belief that charts, data and, in this case, averages are merely numbers attempting to describe the world. **As such, they're never truer than truth itself.**

To read and subscribe to Kaiser's thought-provoking blog Junk Charts, [click here](#).

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*\* Mariko O. Gordon is founder, CEO and CIO of Daruma Asset Management, a NY-based small cap investment management firm. Subscribe to her free monthly e-newsletter On Daruma's Watch [here](#).*

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