

Macro Hive: Diversity Is Strength, A Trader's Proof

(Thorstern Wegener 10 June 2020)

I typically refrain from dipping into the vast array of human resources topics when I can. However, the more prevalent that phrases like 'sorry, we have to let you go' became in my social circle, the more I started wondering why, even in pre COVID-19 days, more people seemed to get the sack when times were tough compared with the equally miserable periods we used to experience on occasion in the good old days. How is it, in today's world of zero interest rates and high volatility, that highly qualified business school graduates, middle managers with fancy finance-related degrees and their highly selective chiefs seem as prone to becoming disposable as their diminishing returns? How did things go from bad to really, really bad, causing an ever faster staff merry-go-round?

The Hunch

My suspicion is that it's correlated with the diversity of employees to be found in the workplace these days. And by that I mean the complete lack thereof – a diversity so vigorously propagated and yet so apathetically achieved. Might that homogeneity be responsible for the dire situation financial institutions find themselves in?

I firmly believe that a diverse workplace brings with it significant strengths. And as something of a geek, I am going to see if I can mathematically prove as much. Of course, Markowitz proved (and bagged a Nobel prize in the process) that a sufficiently large selection of constituents can reduce the volatility of negative returns in a portfolio. But there must be a more accessible way of transferring this ingenious discovery into the world of human resources.

First, Some Folklore

In what now feels like another lifetime, I was sitting in front of too many screens doing what you do as a market maker for equity derivatives. When times were tough, rarely were my colleagues – an Oxford graduate in Ancient Greek from Yemen who ran the cash equity sales team; the risk controller, an ex-SAS man from Sheffield; the equity sales trader, a former concierge in a luxury hotel from Ireland – so easily replaced as they are today. My boss was, in his former life, a trained TV technician who ended up running the derivatives operations, and we always joked if he ever f**ed up big time he could always return to fixing television sets. Well the first he did, but not the second, though that's another story...

We had good years, bad years, and sometimes years better forgotten. But we always managed to come up with something to survive the occasional onslaught of brutal market conditions, nervous investors, and aggressively indecisive supervisory boards. Maybe these brief, highly subjective descriptions carry already a bit of an explanation in them. These were people who, apart from being very enjoyable to work with, were equipped with a huge variety of skills (I could kill you with my thumb, Thorsten); life experiences (I am telling you, the motherboard on this monitor is screwed); and the matching tales to tell (yes, Mick Jagger is a really generous dude). And it was these skills

that no doubt contributed to our success in markets and avoiding becoming victims in the next cost-saving exercise. Of course, this is anecdotal evidence, acquired over a long career in the city and certainly susceptible to observation bias. And I did promise you sort of a mathematical proof of why diversity beats today's streamlined, highly overqualified, practically inbred staff pools of today's financial institutions.

Dusting Off the Old Bell Curve, We Start With Some Basic and Bold Assumptions.

An organization requires a certain number of people to get a large variety of interconnected and related jobs done and so survive and thrive in the marketplace. Certain traits in an individual are more beneficial for success than others. You could argue that intelligence, empathy, diligence or simply being a joy to work with all rank fairly high on such a scale. Additionally, how these traits are mixed seems rather important for successfully inhabiting individual roles – creating the precondition for creative banter. However, in a pool of potential candidates these necessary skills will be like everything that is related to human behaviour: distributed in a shape approximating the classic bell curve.

Whether stock market returns or a 'combined ability indicator', there will be a mean with the majority of observations clustered around this average. As a rule of thumb, roughly 68% of all observations will fall within one standard deviation around this mean, 95% within two standard deviations, and 99% within three standard deviations. So, here is the sum of your employees nicely put into what we can call 'ability brackets'.

Let's further assume that highly successful organizations (Goldman anyone?) are able to shift this mean to the upside, therefore being able to utilize a higher-rated 68% cluster to get the daily jobs done, an awesome 15% for the tough stuff, and an additional 1% for the genius level requirements. Even the 15%, respectively 1% underperformers, punch above their weight. (How did I arrive at these numbers? Some bell curve math; the curve is symmetrical; what benefits you on the upside bites you on the downside).

Now, there is a second variable describing the distribution of a bell curve. The variance or, as I like to call it, the volatility of the distribution. The more volatile your selection of potential candidates, the higher the chance to collect some serious Einstein-level geniuses as well as some veritable halfwits. Emphasizing that the mean splits the curve in the middle, you will be collecting some pretty able cookies to the right of the mean.

You might say, yes but that will be compensated by the rejects to the left of the mean. Not so fast.

Enter a Couple of Useful Laws

First, the Pareto principle, stating that 20% of staff are responsible for 80% of the output – or to be more accurate in this attempt at a proof, introducing Price's law. Like Pareto's law it states that a small number of employees generally do most of the work. However, Derek J. de Solla Price (the Price behind Price's Law) went so far to demonstrate that the square root of the number of employees corresponds to roughly 50% of the output of an organization. Assume you employ one hundred people in your organization, then the square root of this number, a mere ten brave men and women, are responsible for 50% of

the output the organization generates. Of those ten outperformers, three will be responsible for a quarter of your company's overall results, whether measured in profits, turnover or any other kind of valuable contribution defined by you.

Of course, we can reasonably expect these employees to be located to the right of the mean of our 'ability distribution bell curve'. If we now compare two organizations, both requiring one hundred employees, with one organization having a wider spread on their ability curve, it should be self-explanatory that the probability to bag top performers, measured however you want to define ability, is increasing. The stretch covering the 16% high value bracket is wider. Suddenly there are more 'buckets' of potential hero's and heroine's available to pick from a random urn if we stick with statistics, if not call it the job market.

If you multiply the 50% chance to pick staff from the positive territory underneath the bell curve with a wider spread and compare it to the 50% chance you pick employees from a less volatile distribution, you will on average create a higher expected value from the more 'diverse', or volatile distribution. You can also compare it to a call option, priced in a high volatility environment. The average expected return will increase even if your decision criterion for hiring were 'heads or tails'.

Again, this is also true for the less desirable buckets of skillsets to the left of the mean, but in Price's Law terms they do not count as long as they do not contribute a negative output greater than the marginal positive rewards raked in by the top hires, and this potentially negative influence can be mitigated (this is conjecture now) by your bigger pool of Marie Curie genius-level employees you were able to bag, leading to another positive effect: your potential revenue-generating distribution will be skewed to the upside because you are not in the business of aggressively bidding for the bottom feeders, located left to the mean.

So, What's My Takeaway?

An increasing number of Price's Law contributors will be recruited from the more volatile, spread-out distribution, requiring you to hire people with biographies, not just CV's, increasing your organization's profitability or effectiveness. Investors will be happier, supervisory boards calmer, and HR departments less busy handing out termination agreements when times are tough. So it's not just nice or virtue signalling to encourage diversity if you want to be successful. It's a matter of law, Price's Law.

QED

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