The Mistakes CEOs Make
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16 March 2021

Overconfidence

We started Lecture 3, The Mistakes Investors Make, by highlighting how overconfidence is a common psychological bias that causes ordinary households to trade too much and lose money. But even if a bias is common among the general population, it might not be prevalent among CEOs. If biases cause you to make mistakes, those who exhibit it most will underperform and won't make it to the top. And, CEOs have decades of experience and can learn from their past actions. Experience and learning might eliminate mistakes, as has been shown for certain common biases.[1]

But there are good reasons to think overconfidence is one bias that might be *more* prominent among CEOs. A separate bias, the *self-attribution bias*, shows that people attribute successes to themselves and blame failures on other people. If a football manager wins a game, he credits his team selection and motivational speeches. If he loses a game, he may not learn that his tactics could have been better, but instead blames the pitch, the referee, or the opposition's gamesmanship. This bias means that decades of experience can lead to people becoming more overconfident – they have more past successes that they can attribute to their own brilliance. While they'll also have more past failures, they can blame this on bad luck.[2] In addition, overconfidence typically leads you to take more risks. People who take on more risks do extremely well and thus get promoted to CEO. It's also true that risks can lead you to doing extremely badly – but if you take few risks, you can't do better than moderately well, and so you wouldn't have become CEO anyway.

So we have good reason to suspect that CEOs might suffer from overconfidence. But the big challenge is how to measure overconfidence. Professors Ulrike Malmendier and Geoff Tate pioneered the idea of using a CEO's tendency to hold in-the-money options. Here's the idea. CEOs are often given share options as part of their remuneration – for example, the IBM CEO might be given the option to buy an IBM share for $40. After a certain number of years, the option becomes "exercisable" – she can exercise the option. If the option is sufficiently "in-the-money" – if IBM's current stock price is sufficiently higher than $40 – it's prudent for her to exercise it and cash out. Holding onto her options longer than she needs to exposes her to significant risk from the company's future performance, when she's already heavily exposed due to her job and reputation being tied to the company. So a CEO will only choose not to cash out if she believes that her company is worth more than the current stock price - perhaps due to overconfidence in her own ability. But this overconfidence is misplaced: Ulrike and Geoff find that the shares typically fall in value afterwards.

A second measure they introduced studies whether media articles describing CEOs classify them as "confident" (or similar words such as "optimistic") or "cautious" (or similar words such as "conservative" or "frugal"). For example, a *Wall Street Journal* article, referring to the Blockbuster CEO, noted that: "Mr. Huizenga remains ebullient in his optimism, determined to make life miserable for the "disbelievers" who have invested short in Blockbuster stock." (He was also a late option exerciser).

[1] List, John (2003): "Does Market Experience Eliminate Market Anomalies?" *Quarterly Journal of Economics* 118, 41-71.
[2] Gervais, Simon and Terrance Odean (2001): "Learning to be Overconfident." *Review of Financial Studies* 14, 1-27.

Armed with measures of overconfidence, in what behaviours do we think overconfidence might manifest? One natural outcome is mergers and acquisitions (M&A). This is because overconfident CEOs may think they can improve the performance of a company by buying it and applying their amazing management expertise to it. Indeed, Ulrike and Geoff found that overconfident CEOs are 65% more likely to do M&A deals.[3] Now M&A can sometimes create value (see my June 2019 Gresham lecture, Mergers and Acquisitions: Do They Create or Destroy Value?”), but the evidence shows that overconfident CEOs are particularly likely to undertake diversifying mergers – even though these typically destroy value. A potential reason is that they are overconfident about their ability to master a new industry, not recognising that their expertise may be limited to their current industry. Indeed, the average market reaction to an M&A deal by an overconfident CEO is -0.9%, compared to -0.12% for non-overconfident CEOs.

If overconfidence means that a CEO thinks her company is worth more than what the market thinks, she'll refrain from selling not only her own shares, but also the company's shares – i.e. issue equity. This can also be costly – because she's reluctant to raise funds, the CEO may turn down profitable investment opportunities. Indeed, a separate study found that investment is highly sensitive to the amount of cash that a firm generates internally, suggesting that overconfident CEOs will only undertake investment they can finance from within.[4]

What Causes Overconfidence?

What causes a CEO to become overconfident? Certainly, contributory factors might be innate personality traits. However, another contributor could be being showered by awards – for example, being named to *BusinessWeek*'s “Best Managers of the Year”, or being named *TIME* Magazine's “Person of the Year” (while this award can go to anyone, sometimes CEOs win this award – Mark Zuckerberg being a recent example).

You might think that a CEO winning such an award should be good news for a company. It may mean that banks are more willing to fund it, employees are more willing to work for it, and the government is less likely to work for regulate it. But the flipside is that the CEO might become too overconfident.

Now if you saw that a company underperformed after its CEO won an award, this would only be correlation, not causation. It may not have been that the award caused the CEO to become overconfident and then underperform, but the underperformance would have happened anyway because of *mean reversion*. An award is likely to be given after periods of unusually good luck (which led to the CEO outperforming), but because luck evens itself out over time, that good luck can't be sustained. If you toss a coin 100 times, you might find a streak of three heads, but that streak is unlikely to be followed by another streak of three heads.

So Ulrike and Geoff compare award winners with CEOs who performed just as well, but didn't win an award. They found that winners underperformed non-winners by 15-26% over the next three years. But the award pressures CEOs to give the semblance of deserving it, so they engage in earnings management – changing accounting policies to boost reported earnings. While company performance lags, the CEOs themselves benefit. Perhaps due to the fame coming from the award, they obtain significant pay rises, join outside boards, and write books – rather than focusing on the job they're paid handsomely to do.

[3] Malmendier, Ulrike and Geoffrey Tate (2008): “Who Makes Acquisitions? CEO Overconfidence and the Market's Reaction.” *Journal of Financial Economics* 89, 20-43.
[4] Malmendier, Ulrike and Geoffrey Tate (2005): “CEO Overconfidence and Corporate Investment.” *Journal of Finance* 60. 2661-2700.

Solving Overconfidence

This lecture is called "The Mistakes CEOs Make". There are very many actions that CEOs undertake that reduce firm value, but I'm not calling them "mistakes" because the reduction in firm value may be deliberate. The CEO knows that the action is harming firm value, but she undertakes it because it benefits herself – for example, taking a corporate jet, paying herself an excessive salary, or cutting investment to boost short-term performance. Those are *agency problems*, rather than mistakes. Agency problems occur when an *agent* (here, the CEO) works for a *principal* (here, shareholder) but has misaligned incentives. The solution is to more closely align incentives, e.g. by making the CEO's pay sensitive to long-term performance.

The challenge with mistakes caused by overconfidence (and other psychological biases) is that the CEO genuinely believes that she is creating value. She buys other companies because she believes she's a great CEO and can turn them around. She doesn't issue equity because she believes that her company is worth much more than what investors think. Paying the CEO according to long-term performance won't help because the CEO genuinely believes she's improving long-term performance. Thus, the solutions are to involve other opinions in the decision making process. As explained in my TED talk, What to Trust in a Post-Truth World and my April 2020 Gresham lecture, Critical Thinking, this involves actively seeking other viewpoints (from the executive team, non-executive directors, investors) and listening to experts (e.g. academic research showing that diversifying mergers subtract value). For award-winning CEOs tempted to milk their status, the advice is to stick to the knitting. As Warren Buffett said, "The best CEOs love operating their companies and don't prefer going to Business Round Table meetings or playing golf at Augusta National."

Other CEO Traits

In addition to overconfidence, other CEO traits can lead to poor decisions. One is narcissism. While related to overconfidence, it's distinct in that it also involves a sense of entitlement, a need for constant recognition and attention, and a willingness to further your own interests at the expense of others. Again, creativity is necessary to come up with a measure of narcissism. One is the size of a CEO's signature in regulatory filings and annual reports – there is surprisingly large variation in CEOs' signature sizes. One CEO with a particularly large signature is Rupert Murdoch, who is also commonly viewed as having narcissistic traits. Research finds that narcissistic CEOs invest more than their peers, but generate lower profitability and cash flow.[5] Echoing the research on award-winning CEOs, narcissistic CEOs are paid more but also engage in more earnings management.[6] Importantly, the results hold after controlling for overconfidence, highlighting that narcissism and overconfidence are distinctive traits.

However, it's important to stress that not all CEO traits are bad. One trait is "sensation seeking", the desire to take risks. In an investment setting, this has been shown to be undesirable. One study, using speeding tickets as a measure of sensation seeking, finds that household investors who receive more speeding tickets trade more, and underperform more under transactions costs.[7] Another, using ownership of flashy cars as a measure of sensation seeking, finds that sensation-seeking hedge fund managers take on more risk, but earn the same return, so their risk-adjusted performance is worse.[8]

[5] Ham, Charles, Nicholas Seybert and Sean Wang (2018): "Narcissism is a Bad Sign: CEO Signature Size, Investment, and Performance." *Review of Accounting Studies* 23, 234-264.
[6] Ham, Charles, Mark Lang and Nicholas Seybert (2017): "CFO Narcissism and Financial Reporting Quality." *Journal of Accounting Research* 55, 1089-1135.
[7] Grinblatt, Mark and Matti Keloharju (2009): "Sensation Seeking, Overconfidence, and Trading Activity." *Journal of Finance* 64, 549-578.
[8] Brown, Stephen, Yan Lu, Sugata Ray and Melvyn Teo (2018): "Sensation Seeking and Hedge Funds" *Journal of Finance* 73, 2871-2914.

But for CEOs, sensation seeking might actually help. CEOs with private pilot licenses run riskier firms and undertake more M&A.[9] While this may seem bad, given the overconfidence results, it's important to stress that not all M&A is bad (diversifying M&A typically is, but focused M&A is typically good), and risk-taking can also be good. Indeed, the study finds that these actions have neither helps nor hurts the average firm. Moreover, for low-value companies, which might have few organic investment opportunities, M&A by sensation-seekers typically adds value. A separate study finds that sensation-seekers produce more patents, and these patents are higher quality and more innovative (i.e. different from what the firm is currently doing).[10]

Why might the results be different between investors and CEOs? For investors, there is essentially one job – to invest money. Certainly, investors can take *risks* by what they choose to invest in, but they can't *innovate* by moving into a different line of business. Their scope to launch new products is largely limited to new fund offerings. In contrast, CEOs can choose to launch new products that differ significantly from what they're currently offering. For example, in my March 2020 Gresham Lecture, How Great Companies Deliver Both Purpose and Profit, I explained how Vodafone launched a mobile money service in Kenya. The willingness to take risks may be necessary to encourage such swinging for the fences.

Indeed, as emphasised in my October 2018 Gresham Lecture, Purposeful Business: The Evidence and the Implementation and my January 2019 lecture, Reforming Corporate Governance, the biggest "mistakes CEOs make" may not be *errors of commission* (taking a bad action) but *errors of omission* (failing to take a good action). Sensation seeking, within reason, can avoid such errors of omission.

Rules of Thumb

Shifting gears from CEO traits that cause mistakes to actual examples of such mistakes, one common theme behind many mistakes is the use of *heuristics* or "rules of thumb" to simply complex problems. The lecture describes several value-destructive rules of thumb; here I'll describe one in detail rather than several superficially.

Any Finance 101 class will emphasize that the appropriate "hurdle rate" for a project depends on the project's own characteristics, not the firm as a whole. For example, if you're undertaking a risky project, you might require a 20% return for you to go ahead; for a safe project, the "hurdle rate" might only be 10%. However, a survey found that 58% of firms use a single company-wide hurdle rate for all projects (say 15% in the above example), rather than a hurdle rate specific to the project's characteristics. Applying the same number to every project is simply more convenient.

But the important question is – does this really matter? Perhaps an ivory-tower academic will tell you the correct hurdle rate for a particular project – known as the weighted average cost of capital (WACC) – is 16.524% but if you use 15%, is that good enough? Given the cash flows of a project are so difficult to estimate to begin with, it seems pointless to "fine-tune" the WACC calculation.

An important study shows that it does matter.[11] The research first looked at investment. If your core business is utilities (safe) and the non-core division is media (risky), you should be using a media hurdle rate for non-core capex. But, if you incorrectly use a utilities hurdle rate, the hurdle rate is too low and you'll be taking too many projects. The authors indeed find that investment in a non-core division is greater if the non-core division is riskier than the core division.

[9] Cain, Matthew and Stephen McKeon (2016): "CEO Personal Risk-taking and Corporate Policies." *Journal of Financial and Quantitative Analysis* 51, 139-164.
[10] Sunder, Jayanthi, Shyam Sunder, and Jingjing Zhang (2017): "Pilot CEOs and Corporate Innovation" *Journal of Financial Economics* 123, 209-224.
[11] Kruger, Philipp, Augustin Landier and David Thesmar (2015): "The WACC Fallacy: The Real Effects of Using a Unique Discount Rate." *Journal of Finance* 70, 1253-1285.

They then turn to M&A. They find that conglomerates tend to buy high-WACC targets rather than low-WACC targets, again consistent with them erroneously using their own WACC to value a target, when they should be using the target's high WACC. Moreover, the attraction of studying M&A is that you can measure the stock market's reaction to the deal, to quantify how much value is destroyed. The authors find that shareholder returns are 0.8% lower when the target's WACC is higher than the acquirer's WACC. They study 6,115 deals and the average acquirer size is $2bn. Thus, the value destruction is 0.8% * $2bn * 6,115 = $98bn lost to acquirers in aggregate because they apply a simple rule of thumb rather than starting from first principles.

The description of the paper on hurdle rates is adapted from my blog, "Access to Finance", at https://alexedmans.com/blog/corporate-finance/dangers-of-using-a-company-wide-discount-rate/