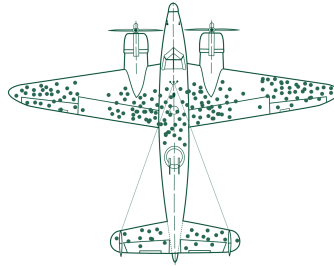


Operating In A World Of Imperfect Information

Newsletter, March 2022



*"The world we live in is vastly different from the world we think we live in."
Nassim Nicholas Taleb (1960 -), Lebanese American essayist and mathematical statistician*

Right around 1943, with World War 2 in full swing, American fighter planes were sustaining their heaviest losses in the hands of German air defenses. Most of the planes returning from their missions suffered extensive damage, prompting the military brass to urgently seek ways of turning around the increasingly grim statistics. Since most of the observable damage on the planes appeared to be concentrated along the mid fuselage and wing tips, the initial thought was to reinforce those areas in the hope that doing so would improve their odds of surviving. Wanting to make sure they hadn't missed anything, they sought the advice of a renowned group of statisticians from Columbia University¹. Their suggestion was to reinforce the areas of the plane that had sustained the least damage which was the exact opposite of what they were expecting.

The statisticians had quickly understood that the returning planes only held part of the clue, a large chunk of information had been lost on the aircraft that never made it back. If the planes that returned were able to continue flying despite sustaining heavy damage, could it be that the areas most affected by the flak were also those that were least likely to cause a catastrophic failure? If that was truly the case, it went to reason that the most vulnerable parts were likely those that had sustained the least damage, which happened to be the engines and specific portions of the fuselage, and that those were the areas that would need reinforcement.

Here is a classic example of "survivorship bias"² that illustrates how incomplete information can lead us potentially astray by drawing the wrong conclusions, tainting the decision-making process enough to cause possibly irreparable damage. We encounter survivorship biases of all shapes and forms in our lives and if they cause us to make cognitive mistakes, it is usually because we are unaware of their existence. In the investments field it is performance calculations of indices or funds that tend to be tainted by a form of survivorship bias in which the performance contribution of investments that have failed or have performed poorly compared to the rest are conveniently removed in order to artificially "boost" the performance results.

¹ <https://medium.com/@penguinpress/an-excerpt-from-how-not-to-be-wrong-by-jordan-ellenberg-664e708cfc3d>

² Survivorship bias is the logical error of concentrating on the people or things that made it past some selection process and overlooking those that did not, typically because of their lack of visibility. This can lead to some false conclusions in several different ways. It is a form of selection bias.

Media and publishing are powerful venues through which such biases tend to propagate and get reinforced. Whether it is a story about the ingenuity and business acumen of a college dropout, the record setting elite athlete or platinum status rockstar, the narrative is almost always the same, about their successes and never about the hundreds of thousands of individuals who also tried and failed, or just ended up with mediocre results. We get the impression that such spectacular achievements are within reach, only because we don't have the "full picture" and thus cannot truly appreciate the huge role that luck tends to play in all this.

And even if we happen to be blessed with the necessary skills and luck to take us to such levels, it still doesn't guarantee success, at least not in a monetary sense, as huge income discrepancies have often been observed between similarly skilled artists and athletes across the globe³. This so-called "phenomenon of superstars" just adds another layer of complexity to the problem of survivorship biases. So how should we proceed to get a more "complete" picture of an event so that we can make more informed decision? The first step would probably involve acknowledging that such biases exist and look for them beyond the information that is available.

Sometimes the information needed to make decisions that are void of major biases are lacking, because there just isn't a long enough history for that information to exist in the first place. One workaround has been to run rigorous iterative simulations and other tests, something that pharmaceutical firms tend to do when developing new drugs. Relying on incomplete information have caused tragic outcomes in the past, such as with the Thalidomide scandal of the 1950's⁴. Still, there are circumstances in which with even the best of intentions and thorough data gathering, a large amount of information will still be missing, simply because they don't exist and the possibility of their occurrence have never been considered.

Where Do We Go From Here?

Rapidly rising tensions between Russia and the west have pushed oil prices to new records, further exacerbating a global recovery that is already reeling from the pandemic and ongoing supply chain bottlenecks that have been fueling inflation for more than a year now. The mainly sentiment-driven sharp increase in energy prices comes at an inopportune time, just as the pandemic is showing signs of receding and as manufacturers appear to be making progress in bringing output to levels closer to the pent up demand. The Russian conflict is bound to add more uncertainty into the equation, further clouding an economic outlook that was already treading on a wobbly path.

Even if the comprehensive series of "biting" sanctions will cause some damage to Russia and its economy, the country with its battle-hardened military force has been planning and preparing for such an eventuality for many years now⁵, which means that their effects will be less severe than intended, giving them the capacity of withstanding such pressures for longer. Less discussed, but more worrying are the potential global repercussions of these events. Russia is a major exporter of both energy and wheat. Europe in particular remains very vulnerable in this context, given its close proximity to the conflict, exposing it to a potentially massive flow of refugees, especially if the situation degrades substantially. Europe is also significantly exposed through its substantial energy dependence on Russia, made worse with a winter season in full swing.

And then there is the digital side of these conflicts to consider. Cyber-attacks are likely to surge, especially if the west goes ahead with the more damaging sanctions. What we are witnessing could very well be the first stage of a new world

³ <https://www.jstor.org/stable/1803469>

⁴ https://en.wikipedia.org/wiki/Thalidomide_scandal

⁵ Russia's debt to GDP is roughly 18% versus 130% in the U.S. and it has sharply reduced its holdings of U.S. treasuries since 2010, stockpiling instead in gold.

order, a dynamic that has been evolving over the last two decades, pitting the autocratic regimes of mainly China and Russia against the more “liberal” democracies of the west. A U.S. that has become increasingly withdrawn from its traditional leadership role on the international stage, especially in the last five years, has given autocrats a reason to “test the waters” by flexing their muscles well beyond their borders.

A lot of what happens next will depend on how the west responds to Russia’s invasion of its neighbor. A weak signal would formalize the new cold war and set the stage for future conflicts by, for example, giving China an incentive to be more forceful with its claims on Taiwan, whereas too strong a response would tilt the world more towards “hot” wars, dragging major powers into unwanted conflicts with far greater near-term consequences. The hostilities will also be markedly complicating matters for central banks across the globe, and more particularly for the Fed, that is now having to face the dualities of persistent and heightened inflation risks unlikely to subside anytime soon, and headwinds with a possibly sharper drag on the recovery.

This can only mean that they will be less eager to use their tightening tools as effectively as they otherwise would to combat the emerging inflation, setting the conditions for stagflation to take a foothold. The market jitters and excess turbulence are also bound to create additional headwinds on the recovery, by eroding not only investor confidence, but also by sapping appetite for both consumption by households and capital outlays by businesses.

Just as the world appeared to have freed itself from the clutches of a once in a century global pandemic that has taken a major toll on both health and wealth, we are now faced with the prospects of a global war in the information age, adding yet another challenge to the recovery that is certain to rock the markets for some time to come. As Russia proceeds with a full-scale invasion of the Ukraine and as the west scramble to find effective ways to respond, one can’t help but be reminded of the great wars of the last century and how no one really saw them coming, the likely consequences of operating on imperfect information.

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