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Lantau **Pique**

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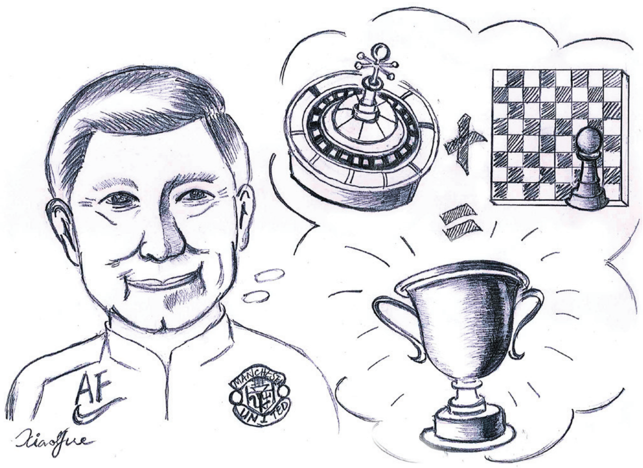
In this edition

In this edition of Lantau Pique, taking inspiration from the career of Alex Ferguson who recently retired from managing Manchester United, the champion UK football (soccer) club, we share some thoughts on the challenges of valuing opportunities in the Asian energy sector.

Never ask a Barber if you Need a Haircut - Avoiding the Pitfalls of Luck and Bias

Sir Alex Ferguson recently retired after a remarkable career spanning 26 full years and 38 trophies at Manchester United. Transforming the club into a global phenomenon, Sir Alex led United out of a 26-year doldrums to achieve rarefied success over decades with an ever-changing roster of players. Even before he joined United, he had won 11 trophies already, including the European Cup Winners' Cup with Aberdeen. It's now easy to place Sir Alex amongst the greats, given so much observed success.



Yet, in 1990, on the dawn of the FA Cup final, Sir Alex was staring at the sack, following a trophy-less and disappointing run since joining United in 1986. Mark Robins' FA Cup-winning goal allegedly saved his job. Suppose Robins had missed. Suppose further that someone else stepped into a United organization whose foundation Sir Alex had built - perhaps even enjoying a run of winning seasons on the back of that foundation. United still might have won the European Cup the next year. Sir Alex might have received none of the credit for what he had built up. However, the new manager eventually would likely have been called out for being merely mortal: unable to sustain success as his inherited foundation eventually unwound.

Focusing only on United's early losses would not have provided the information needed to determine whether to keep Sir Alex employed as manager. Outcomes invariably reflect a confounding mixture of luck and skill. Making crucial decisions based on recent outcomes is risky, however emotionally tempting. When uncertainty and random factors play a large role, it can take a large number of outcomes before you can confidently distinguish decision-making skill from luck (good or bad). So if you want to make better decisions without depending fundamentally on luck, it pays to focus on improving the quality of your decision-making process, and, in particular, to look for and mitigate possible sources of bias or other distorting influences.

In this edition of the Lantau Pique we apply some of these concepts to valuation-related decision-making in the Asian energy sector.

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All Dressed Up and No Place to Go?

As shown in Table 1, in the broader Asia Pacific region (excluding Japan), the private sector controls a little more than 250 GW of existing power generation assets – about 14 percent of all currently installed capacity spread over more than a dozen countries. In comparison, the private sector controls over 1,000 GW of capacity (about 90 percent) of installed capacity in the US market alone.

Table 1: The Commercially Addressable Market in Asia

Countries	Total Installed Capacity (MW)	Addressable Capacity (MW)	Addressable Proportion (%)
Australia	54,324	29,481	54%
China	1,144,910	55,185	5%
Hong Kong	12,625	12,625	100%
India	211,766	62,459	29%
Indonesia	36,257	5,428	15%
Korea	79,432	8,832	11%
Malaysia	27,179	16,704	61%
New Zealand	9,751	3,342	34%
Philippines	15,717	14,512	92%
Singapore	10,884	10,632	98%
Taiwan	41,401	8,893	21%
Thailand	32,600	17,669	54%
Vietnam	23,652	5,984	25%
Other	56,640	*Limited*	*Limited*
Total Asia Pacific	***1,757,138***	***251,747***	***14%***

Source: Company annual reports, presentations, government regulatory reports, and resolutions, and TLG Research. Installed capacity for “other” Asia Pacific countries is sourced from the US Central Intelligence Agency (CIA) “Fact Book” and are based on 2009 data increased to 2011 levels based on the country’s GDP growth rate.

The commercially addressable part of the merchant power sector in Asia is particularly thin. Only about 34 GW of capacity – representing only two percent of all capacity in the region – is located in the three Asian countries with wholesale electricity markets: Philippines, Singapore, and South Korea. An additional 33 GW of capacity is located in the wholesale electricity markets of Australia and New Zealand.

Asia’s combination of commercial thinness and extraordinary geographic and political diversity makes it difficult for investors to build up the same extensive in-house experience and specialist expertise – particularly in merchant markets – that a company of equivalent size can develop in a thicker market like the United States. Furthermore, investors in the Asia Pacific power sector tend to focus in narrow pockets, measured both in terms of specific locations (such as the privatized Australian, Singaporean or Philippine markets) or time (such as the especially intense investor activity that accompanies major privatisation events).

Add the uncertainty of Asia’s gradually hastening efforts to address environmental concerns, and the challenge to investors of drawing useful inferences about good strategy based on observed outcomes becomes even more difficult.

Winner’s Curse is Real: Be Prepared

In 1971, Capen, Clapp, and Campbell put forward the notion of winner’s curse to explain the financially unsatisfactory results of competitive bids for oil leases. The most optimistic assessments were naturally winning, which meant that upward valuation bias could lead to buyer’s regret.

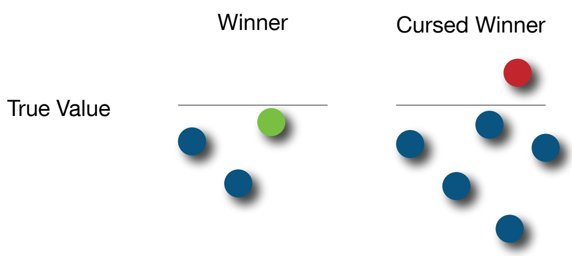
The Victoria, Australia privatisation in the late 1990s provided an initial glimpse of winner’s curse in the Asia Pacific power sector. As the first major electricity privatisation in the region, bidder interest ran high. A prominent global strategy consultancy put forward a projection of high prices backed by claims about market power and bidding behaviour. If you wanted to win the tenders, you faced strong pressure to start from this projection and ignore more rigorous, alternative forecasts based on economics and market fundamentals that took a far less rosy view of future prices.

It did not help that it is often easy to dismiss even the most outstanding of analysis if it depends on less familiar theory or a more complex implementation, especially when time is short or the results run counter to expectations influenced by other incentives or biases. Ultimately, it proved difficult for transaction teams to move away from the higher price forecast – which ultimately carried the day for most bidders. After privatisation, however, market prices fell to levels much closer to (and in some instances below) the lower forecast. The winners – with the optimistic, not realistic, market price projections - were cursed.

When presented with divergent projections of value, you have to choose – and choose in a way that avoids bias. You need to assess how market models work, and (sometimes even more importantly) how your project and advising teams use them. If you treat the models as black boxes, or you choose just the results that enable you to win a given auction, then you risk the winners’ curse. You also have to pay attention to the incentives of project developers and transaction advisors. Good decision-making focuses on combining a clear understanding of risks and value with the ability to recognize and mitigate bias.

Of course, if you focus excessively on the risk of the curse, then you might never do any deal at all. That would be wrong. Winner’s curse is a risk characteristic linked to certain types of tenders and auction processes and conditions. It relates to the number of competing bidders and the quality of information available upon which to render their valuations. When major valuation factors are particularly uncertain, the prospect increases that the valuation will reflect prevailing biases, incomplete information, or simple inaccuracy. The more competitors who compete to put forward their own uncertain valuations, the more likely the winner will be one whose valuation is not only optimistic, but excessively so – well above the “unbiased” or “true” value.

Figure 1: The Optimistic Outlier Wins



A key part of what made the Victorian and the later Singaporean privatisation processes ripe for winner's curse was the sheer amount of investor interest that each attracted. As illustrated in Figure 1, as more investors participate, the winning bid is more likely to be cursed. It's bad enough when random error causes such outcomes. Relying on distorted or bad analysis or employing poor decision-making practices only worsens your fate. Concentrated privatisation "events" are particularly risky situations for buyers, unless the auction process has been structured to protect against the curse.

Some "cursed" winning bids will still turn a profit if subsequent good luck offsets the original poor valuation decision. Fuel prices can shift; demand can grow unexpectedly; policies can change; or competing generators can experience outages or transmission constraints. Not all such changes will be favourable. Some cursed bids will face a round of bad luck, invariably with the result that the buyer will sell and retreat, most likely to restore parent company liquidity. Such tidal behaviour is not uncommon in Asia. Investors periodically have professed to take a "long-term" position only to exit "strategically" just a few years later. When opportunities come around again, the sales process is often very different, and the intrinsic risks of winner's curse may be reduced as a result.

Don't Shoot Yourself

Winner's curse is usually a self-inflicted injury. It arises because you have not detected inadequacies in your decision-support processes or mitigated your own internal biases. Biases take many forms. Some biases are perceptual – related to beliefs formed from past experiences or from incomplete information. Knowing less about something tends to increase the scope for divergence between what you think you know and the "truth". Some biases are process-related – sellers not giving teams the time or resources to vet assumptions that they need to avoid the curse. Take heart: if it turns out that knowing more about a market means you lose to a more aggressive valuation, it probably means you are avoiding the curse.

Financial advisors have long worked on a success-fee basis and buyers have long had the chance to understand and mitigate the obvious associated risks. But similar risks arise in using specialist market advisors. If you hire such advisors too late or on a success fee basis or based on a track record of "wins", you may well be setting yourself up for the curse. As short-term results can be deceiving, you can't reliably use past "wins" as a measure of expertise. Instead, you need to drill down into the underlying process of reaching a recommendation and assess the fundamental commitment of the team to analytical rigor and comprehensive and objective evaluation. Otherwise, you could merely be relying on Mark Robins' to score a timely goal rather than focussing on the fundamental, positive, long-term changes that Sir Alex had been implementing that would ultimately position United so well for the future. That's why the saying goes: "never ask a barber if you need a hair cut"[1].

The key assessment of Sir Alex was not his winning record – that came later and was easy after so many years and victories – but the assessment that would have been required had Robins not scored that goal. After all, that is the value challenge: to be able to make quality decisions that are substantially independent of, or at least objectively distinct from, short-term outcomes. To do that prudently requires that you drill deeply into the assumptions, factors, behaviours, analyses, incentives, and potential biases that influence decision quality. And you have to be able to communicate that message to those who do not share the same perspective or access to information[2].

Some places to look to mitigate the curse

Bias can creep into power sector valuations. Vetting expert market analysis is not only difficult but it is virtually impossible in the heat of a time-pressured transaction. Investors or lenders often have to trust advisors who may have been hired based on reputation for successful transaction support work in the past. How do you manage the risk that such success could itself reflect a biased model or modelling approach? Would you have the wherewithal and time to determine this?

One relatively expensive but potentially prudent option is to arrange to compare results derived from two different modelling teams (one could be an in-house team, or both could be hired-in consulting teams). An investor operating in a thicker commercial environment would almost certainly have robust in-house analytical capability for such a vetting exercise. In side-by-side testing of models, we've seen examples of logical errors – errors related to misinterpreting the way the underlying market works – adding several basis points to "expected" project IRR. We've also seen differences in views on the ability of market participants to exercise market power. Only by noting the differences and digging into the reasons is it possible to determine whether a given difference is material to your valuation and what your position on it should be.

1 Quote attributed to many, including Warren Buffet, a well-known and highly successful investor.

2 Martin Edwards, Chairman of Manchester United back in 1990, noted recently: "By 1990 we hadn't won anything and we'd bought a lot of players. But we knew how hard Alex was working, particularly at the youth level," Edwards told Sky Sports News. "We felt that given the time it would come right. It was just a question of whether the supporters would give us the time. Fortunately the success in 1990 [winning the FA Cup] revived everything. It saved us really." http://www.sportsmole.co.uk/football/man-utd/news/edwards-1990-fa-cup-success-saved-ferguson_83398.html

Sometimes, however, two models are different because of assumptions or theories. In such cases, "proving" that one model is right and the other is wrong may not be possible. It is here that things get complicated. If you choose between two seemingly indistinguishable models simply because one has produced many results that have won bids in the past, then you risk falling into the trap of the curse. The fact that two models can be difficult to distinguish is why the stakes are high. Nevertheless, it is incumbent on you, the buyer who wishes to be wise and profitable, to choose for reasons other than merely a winning or losing track record. That means you have to do your homework. You need to find some other basis for making such choices.

Summing Up

Decisions have outcomes. But outcomes are influenced by factors that make it very difficult to judge success from outcomes alone. The larger the scope for chance to influence outcomes, the more careful you must be to judge your strategy and shape your expectations based on a robust assessment of how you make decisions:

- Do you have a comprehensive understanding of the situation, or is something missing from your field of view?
- Do you have the expertise to process the information that you receive?
- Have you vetted the expertise and information that you rely on to be unbiased and based on logic that you understand and endorse?
- Have you been vigilant against the hidden assumption or bias that avoids the same level of scrutiny commonly directed at, for example, technical assumptions?
- Are you familiar with the conditions that give rise to winner's curse?
- Are you prepared to be patient?

A number of basic forces shape business outcomes. If you make just one decision and it turns out great, enjoy it, but don't take too much credit. You might just have been lucky. Conversely, if things turned out badly, don't necessarily stop. Regression to the mean is real.

Similarly, the decision-outcome framework has an element of gravity to it. Eventually, the bad deals that hit bad luck are pulled down. The next round may well see them available at much more attractive price points.

Building long-term capability to analyse transactions in merchant markets without winners curse requires a degree of stability and expertise. If your team is always changing and you are pulling things together at the last minute, the transactional "friction" can be corrosive and costly.

In the end, good analysis allied to disciplined patience is rewarded. It is far easier to win bids than to make money. We like it when our clients do both.

Appendix: Winner's Curse in Australia and the Philippines

Victoria, Australia 1997

On or about 1 May 1997, the Australian National Electricity Market (NEM) commenced. At the same time, the Victorian power assets were substantially privatized. As detailed in Figure 3, average wholesale electricity prices in Victoria decreased dramatically from $28.1 per MWh to $12.5 following privatisation. The wholesale electricity prices in the NEM reflected the emergence of a highly competitive restructured market with excess capacity in which prices approached short run marginal cost. The result was a significant reduction in expected revenues to the buyers of the generation assets.

Table 2: Dramatically Falling Spot Market Prices in Victoria, Australia (US$/MWh)

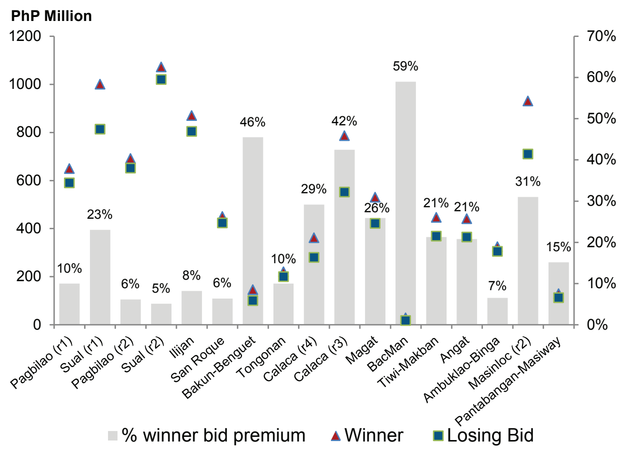
1995			1997		
Weekday	Weekend	Total	Weekday	Weekend	Total
$30.8	$21.4	$28.1	$14.6	$7.2	$12.5

Source: TLG Research.

Philippine Power Sector Privatisation

Across a number of generation asset transactions in the Philippines, the Asian power market with the most recent and extensive privatisation program, winning bidders have paid 17.4 percent more than the second highest bidder on a value-weighted basis.

Figure 2: Results from the Sale of Philippine Generation Asset and IPPA Arrangements

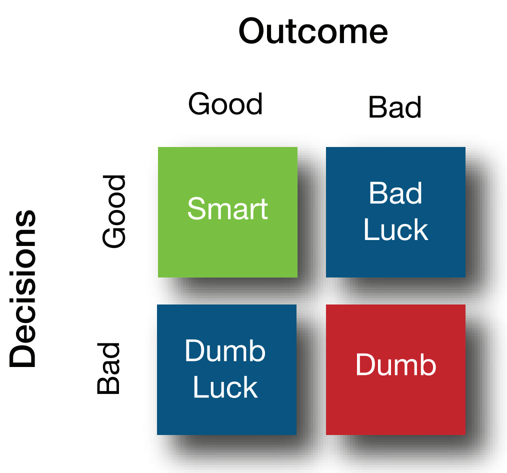


Source: TLG Research.

Addendum: Decisions versus Outcomes

Decisions have outcomes. A simple four-box matrix (Figure 3) establishes a visual reminder that everything we see and experience, in life, sports, or business, is quite possibly not what it first seems.

Figure 3: Decisions vs. Outcomes



As the potential for material random error increases between the decision and the outcome, it takes more outcomes before one can determine (from those outcomes) whether the underlying decisions are sound. A simple way to illustrate this intuitive but often ignored fact is to establish a "truth" line and alternative lines that have the same expected value as the truth line but have differing amounts (1x, 2x and 4x) of randomisation applied. Let's assert that the truth line represents "good decision-making". The randomised lines then reflect the resulting "outcomes" from making good decisions. Over time, no matter how much random noise there is, if you keep making good decisions, you track the truth line. Any single decision, however, will yield an outcome that could be better or worse than had been hoped for.

Figure 4: The Truth Line and Three Estimation Lines: (1x), (2x), and (4x)

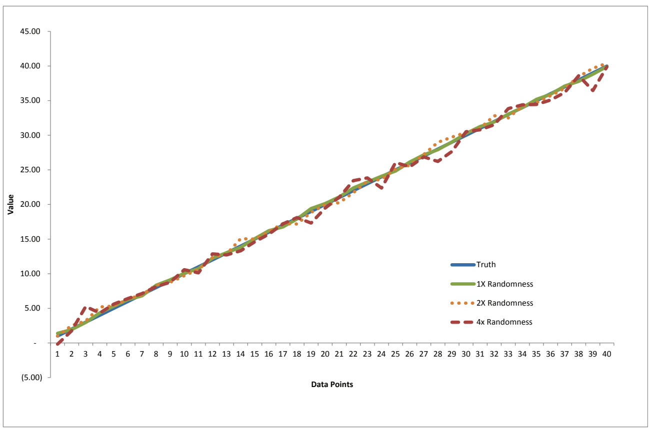
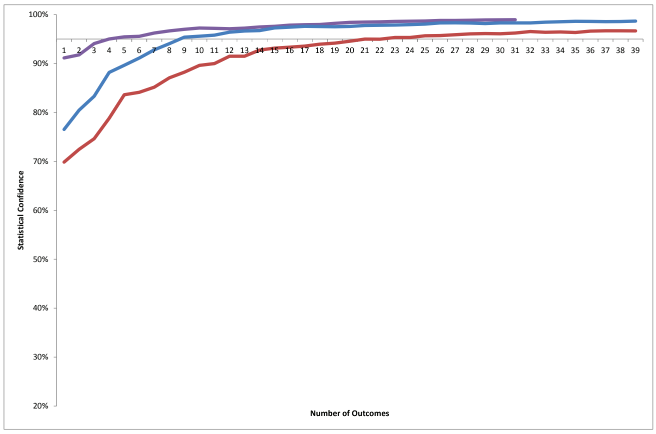


Figure 5 summarises the results by showing how many outcomes must be sampled for each level of uncertainty (1x, 2x and 4x) before the results can be relied on with 95% statistical confidence as indicating the sampled line has the same expected value as the truth line.

Figure 5: T-Test Results: Confidence Level Increases as a Function of Number of "Outcomes"



The results are intuitive, but striking nonetheless. The most randomised truth line requires several times more outcomes before it can be assessed with the same confidence as the least randomised truth line. Given that real life outcomes often involve a substantial degree of randomness that complicates even the very best decision-making process, it's much more difficult to evaluate competence and value than it might first appear – especially in real time. This is the central problem of relying heavily on short-term outcomes to guide decision-making. We rarely have enough outcomes to know anything fundamentally real until it is already too late.

More generally, success requires two things: both of which are difficult. The first is the ability to make good decisions, which requires that you focus intently on your decision-making process, eliminate sources of bias, and undertake appropriate analysis. The second is the ability to confidently wait for the good decision-making process to pay off. To achieve the second often is the hardest part, as it requires the ability to communicate to those who do not share your access to the inner-workings of the decision-making process. Others may not have confidence that decision quality is adequate if outcomes are disappointing. The ability of decision-makers to articulate and defend their decisions is amongst the most valuable skills in business and sports.