PRACTITIONER'S BRIEF

AN OLD MERGER ARBITRAGE TECHNIQUE RIPE FOR A TAKEOVER

By Rich Blake

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> *This article is based on the paper "Impact of Toeholds in Corporate Takeovers" by Simone Kelly, Bond University; and Ray McNamara and Sam Herlihy, James Cook University.*
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> *This paper was recently posted on the CFA Institute Asia-Pacific Research Exchange (ARX).*

In the summer of 2019, China's HNA Group Co. Ltd. (HNA), saddled with debt, reportedly looked to sell its minority ownership in Virgin Australia Holdings Limited.

Among the potential buyers were Turkish Airlines and Singapore Airlines Limited. Before any deal gets off the ground, of course, several questions must be answered, such as how, exactly, did the complexly structured conglomerate amass its VAH shares? About two years ago, HNA admitted that it had failed to properly disclose how its stake — at one point bordering on 20% — was controlled. The revelation came amid regulatory scrutiny into whether some additional ownership was being obscured.

Under Australian merger and acquisition rules, a stake higher than 5% has to be disclosed.

Anything beyond 20% should trigger a formal tender offer. Breach of the 20% threshold is a statutory offence. Because of the rule, there's a unique early-stage stake-building zone of between 5% and 20%.

In dealmaker's parlance, this is known as the "toehold."

Toehold stakes, because they are publicly reported, have been used for decades as viable signals that a company is potentially about to become a takeover target. The technique's widespread acceptance among merger arbitrage hedge funds is testament to the notion that somewhere along the way the information found in filings, which is difficult but not impossible to garner, has proven to be predictive.

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If toehold variables could correctly identify corporate takeovers for masters of the universe, couldn't they also be commandeered by more traditional equity managers, or even ordinary investors, to generate alpha? A trio of Australian researchers wanted to find out.

Their recently published paper "Impact of Toeholds in Corporate Takeovers" is the subject of this ARX Practitioner Brief.

WHAT'S THE INVESTMENT ISSUE?

Before such things were easily obtained online, the art of pouring over public filings was a useful technique for arbitrageurs pursuing some inefficiency to exploit. For the better part of the past two decades, hedge funds have replicated merger arbitrage quantitatively, as an alpha-seeking strategy, wielding data-driven models scrubbed clean by PhDs, reducing the alpha to something more resembling beta.

In examining whether the toehold variable indeed has any unique value, the team of researchers looked at some prior research that was inconclusive. In doubling back over the terrain, the authors wanted to see whether new methods could reveal the toehold as a genuinely predictive tool and, if so, also test whether it could be repurposed as an investment strategy.

Prior research (Goldie, 2014) has suggested that toehold information can be used to predict takeovers and that being able to spot takeover targets could be a source of abnormal returns. Academics, however, have not reached any real consensus as to whether or not this actually worked. One recent toehold variable study, for example, focused on 153 Norwegian companies listed on the Oslo Stock Exchange. Although inconclusive, the Oslo study did show some promise, insofar as it revealed evidence suggesting that certain financial proxies (for underperforming management and liquidity) signaled a higher chance of a takeover. Encouraged, the authors continued their quest to produce something definitive on toeholds.

HOW DO THE AUTHORS TACKLE THIS ISSUE?

The team set out primarily to test the significance of using a toehold variable to predict Australian corporate takeovers. Such an experiment focused on the Australian market had never been done.

The Oslo market tests (Khan and Myrholt, 2018) produced a correct classification (takeover target or not?), on average, only about one-third of the time.

The Australian market tests would incorporate two existing toehold variables — one of which included the filings of all stock owners regardless of whether they had been trimming their stakes, hardly a harbinger of acquisitiveness — alongside two newly designed variables, including one that considered this indiscrimination (by excluding the filings of owners who had reduced positions).

The researchers examined Australian toehold data obtained through the notice of substantial holding forms spanning from the start of 2010 through the end of 2015. Throughout this period, 33 companies (meeting some pre-set requirements, such as having at least three years'

worth of filing data) were deemed as having been targeted for takeover and 33 companies (with the same prerequisites met) were not, forming an in-sample dataset of 66 companies. Data from this in-sample set were put into a logical regression model, the Logit model, which is one of the most widely used takeover prediction tools known to quants. It includes seven other financial metrics (e.g., earnings per share) as control variables. Next, the model was applied to an out-of-sample dataset of 368 companies to test its accuracy at being able to spot the likelihood of a takeover.

Normal regressions have continuous dependent variables (e.g., "share return") that can take on any value from 0% to 100%. This is not the case with the Logit regression model. In this model, what you predict (the dependent variable) is either a 1 (if the company was taken over) or a 0 (if not).

THE FINDINGS

According to the authors, "The toehold variables are found to be statistically significant, and when applied to an out-of-sample data set correctly classify 82% of companies as either a target or non-target."

This result was better than the Oslo study's 32% success rate, no doubt. But when the model is used to form an investment portfolio, things get really interesting.

Creating an investment portfolio based on the two newer, and more successful, of the four toehold models, the researchers observed on-paper total returns over a two-year period (all of 2016 and 2017) of as much as 55% or more than twice the return of the ASX 300.

The authors explain, "It achieves significant positive abnormal returns and successfully beats the return of the ASX 300 index."

The portfolio created with the fourth, superior model includes just 10 companies and only 2 of them were taken over. Other companies shot up in share value merely by being viewed as likely to be taken over.

WHAT ARE THE IMPLICATIONS FOR INVESTORS AND INVESTMENT PROFESSIONALS?

Pulling public filing data is still a labor-intensive mission that cannot be trusted to interns. Analysts mired in the tedious task of building massive, meticulously clean spreadsheets should be heartened to see new evidence supporting the importance of the toehold variable in takeover prediction models.

The Australian market test results shed new light on why a toehold-variable-based investment strategy could even work.

Having a bid that acts as both a buying and selling price, as it turns out, has "incredible advantages," say the authors. Toeholders are in a unique win–win position, whether a bid is forced or if a rival bid is entered. Investors in the target benefit either way. The toeholder's purchase, of a limited amount of outstanding shares, creates a premium.

Selling that minority block to a rival, likewise, creates a premium. Toeholders en route to a foothold thus are presenting management and shareholders with both a buying price *and* a selling price.

These thoughtful Australian researchers are not the first to produce new methods for constructing portfolios that achieve significant abnormal returns, and they won't be the last.

The authors explain that, in theory, any potential acquirer using this model exclusively would have an advantage over competitors. The quest for a unique research edge has gone on for decades. Development of a tool capable of predicting takeovers has been connected with academic studies dating back to the early 1980s, with mixed results and with no one in agreement on what works best. According to the authors, "Currently, there remains no consensus method of predicting these takeover targets" and "as such, the takeover-prediction puzzle is of key interest, not only to academics but also to private practitioners."