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The "Risk" in Risk Arbitrage

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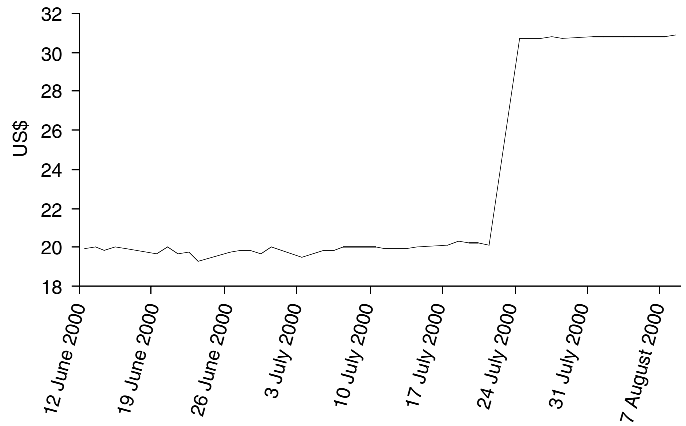
One of the great practitioners in risk arbitrage, seasoned by over 40 years of investing, once said to me, *"risk arbitrage is not about making money, it's about not losing money"*. In effect, the true skill in risk arbitrage is about avoiding losses. And to avoid losses, one must understand, evaluate and manage risk.

Risk arbitrage[1], or merger arbitrage, entails capturing the spread between the price an acquirer has agreed to pay for a target and the price the target trades at after the deal is announced. In a cash deal, the arbitrageur would merely buy the target at a discount to the cash offer price and exchange the target stock for cash at its completion. In a stock deal, the arbitrageur would buy the target and, in order to lock in the spread, short the acquirer in an amount equal to the number of shares the arbitrageur is due to receive in exchange for the target's shares. The spread is the discount the target trades at to the merger consideration and can be expressed in either absolute, percentage or annualised terms.

Since spreads are typically small in relation to the premium paid in a deal, the downside one takes to earn the spread can be significant. The graph in Figure 1 illustrates the magnitude of the risk/return trade off in a typical transaction.

In this example, Chirex Inc, a US-based pharmaceutical service provider, agreed, in a cash tender offer, to be acquired on July 24, 2000 by Rhodia SA, a French specialty chemical manufacturer, for US$31.25. Chirex stock jumped 10½ points on the day of the announcement, from 20¼ to 30¾. The spread, at US$0.50, provides a gross return of 1.6% and an annualised return of approximately 17%, assuming a 35-day close. However, many factors can affect the rate of return. If the deal incurs delays and takes three months to close, the annualised return will fall from 17% to 6%. If the price is subsequently cut to below US$30.75, the deal will turn from a profit to a loss. Or, in a worst case scenario, the deal might break altogether and the

Figure 1 Chirex Inc



stock will fall to its pre-announcement levels or lower. *The "risk" in risk arbitrage is therefore anything that affects the deal's completion, the timing of completion, or the amount of consideration received at completion.* The magnitude of the risk can be substantial. In the Chirex example, the potential loss, as measured by the premium, would be US$10.50, or 21 times the potential gain.

What should be apparent from this example is that risk arbitrage is not for the average investor. The potential downside is substantial in relation to the small upside.

Using the economics of the previous example, if one were right 95% of the time in similar situations, one would only break even. The average investor may not be able to accurately assess the myriad of risks in a transaction and would be likely to lose money in this strategy. Paradoxically, the reward for the experienced manager would be stable, non-correlated returns with less volatility than the market, but able to provide comparable returns over the long term.

To manage the "risk" in risk arbitrage, one must first identify the specific risks, and then manage risk in a way that produces the desired returns. We divide risk into two general categories:

- *macro risks*, which pertain to general economic forces such as market volatility, interest rates, exchange rates and commodity prices; and
- *micro risks*, which pertain to the specific transaction such as earnings, financing and regulatory issues.

MACRO RISKS

Market

In merger arbitrage, one can generally hedge market risk by investing in announced transactions. In cash deals, the consideration is fixed, while in stock deals the consideration can be fixed by shorting the acquirer's stock in an amount equal to the merger ratio. By locking in the spread, the expected returns are earned regardless of the direction of the market, as long as the deal closes. Sometimes, the ability to lock in a spread in stock deals can be more difficult because the ratio is not fixed and is subject to a pricing period, or a collar structure, in which the amount of stock issued will vary. However, by matching the short sales to the terms of the collar or the pricing period, the consideration can generally be locked in.

While small market movements may have minimal effect on transactions, a sharp movement, either up or down, may increase the risk of deal completion. A rapidly falling market, for example, may cause merger financing to dry up, or may cause buyers to re-evaluate the merits and/or the price of an acquisition. In September 1998, the high yield market almost shut down completely and banks used market-out covenants to rescind financing commitments, causing many leveraged buyouts to break. Similarly, financial buyers may try to negotiate a lower price if they think they can buy the company cheaper. Generally, in a rapidly falling market, cash spreads may widen due to the increased macro uncertainty while spreads in stock deals may contract or stabilise due to the "cushioning effect" of the gains realised on the short side.

A rapidly rising market can create problems in arbitrage as well. For example, the Internet fever of 1999 caused rapid run-ups in the stock price of many buyers, causing the target's stock price to rise to levels where huge loses would be incurred if the deal were to break. The rapid increase in the potential downside caused spreads in certain deals to widen. In January, 1999, the At Home acquisition of Excite was announced. At Home ran from US$50 on the day of announcement to over US$94. This caused Excite to rise from the mid-US$60s before the deal was announced to over US$170, creating potential downside of over US$100 per share. The spread responded accordingly and widened from US$8 when the deal was announced to US$30. Numerous other examples exist including, most recently, JDS Uniphase's acquisition of E-Tek Dynamics and JDS Uniphase's proposed acquisition of SDL Inc.

Interest Rates

A rise in interest rates negatively affects certain deals and is a red flag in arbitrage. Higher interest rates will make financing more difficult, affecting the ability of borrowers to incur debt, and increasing the cost of debt. Higher interest rates will also negatively affect earnings for certain industries, such as banks, insurance and automobile companies. Difficult financing conditions, combined with negative earnings surprises, may cause buyers to terminate deals and cause the stocks of targets to collapse.

Other Economic Factors

Commodity prices, exchange rates and other economic factors may negatively affect the profitability of particular industries, which in turn could increase the probability of deal termination. To avoid losses, arbitrageurs must be aware of these trends and the impact they may have on targets.

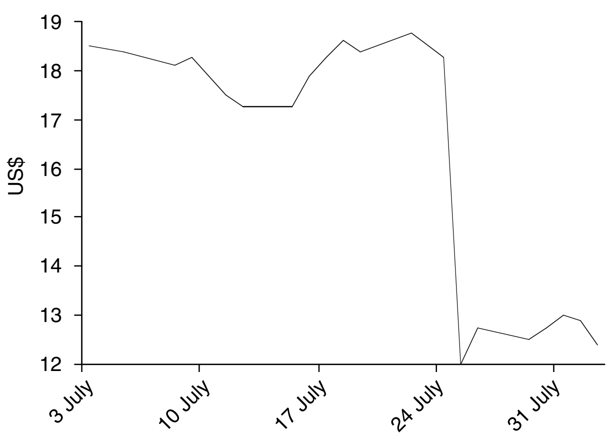
MICRO-RISKS

There are many risks pertaining to particular transactions that may give rise to a deal breaking. After 20 years in the merger or risk arbitrage business, I still uncover new risks because markets are always evolving. However, I have attempted to highlight some of the important risks that may affect a deal's outcome.

Earnings

One of the most common reasons for a deal to break is due to an unexpected decline in the target's performance. Buyers typically value an acquisition based on a multiple of earnings and the projected growth in earnings. If, between the announcement of a deal and its closure, the target fails to meet the buyer's earnings expectations, the buyer may attempt to negotiate a lower price or terminate the transaction. The result can be devastating. The example in Figure 2, while one of many, illustrates the risk of an earnings disappointment. In this case, the Warnaco Group cancelled its purchase of Authentic Fitness Corporation (AFC) and stated, "After it

Figure 2 Authentic Fitness



became clear that AFC will report a loss for its fourth quarter and report earnings below street estimates for its fiscal year, the board unanimously concluded to terminate the merger agreement”.

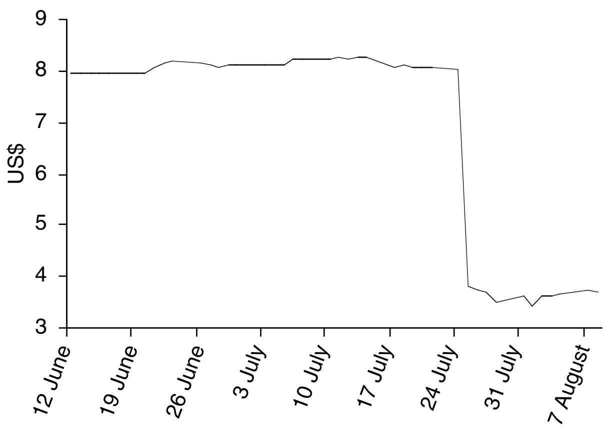
Financing

In cash transactions, the ability to finance the purchase of the target may, in certain circumstances, pose a substantial risk to deal completion. While all buyers believe they can raise the money at the time of announcement, a rise in interest rates, an earnings decline in either the target or the acquirer, or a decline in the stock market may all cause financing difficulties. In a recent deal, PSC shares plunged after Welch Allyn called off the merger as it “was unable to obtain sufficient financings” (see Figure 3).

Legal

A thorough understanding of legal issues is imperative to evaluate the risks in a transaction. Such issues include the specifics regarding tender offers, exchange offers, cash mergers, stock mergers, spin-offs, state takeover statutes, corporate by-laws and articles of incorporation. One must also be familiar with litigation risk as the buyer, or the seller, may be involved in litigation which could affect the deal’s completion. Consider the US$145 billion judgment against Philip Morris in Florida State Court, announced after Philip Morris agreed to buy Nabisco, or the US$800 million patent infringement suit filed against Seagate in the midst of its proposed merger with Veritas. An understanding of a broad spectrum of legal areas is paramount in assessing the risk of a transaction.

Figure 3 PSC Inc



Premium

The premium the acquirer pays for the target can be used as a starting point in estimating the downside risk if the deal fails. Generally, the greater the premium, the greater the downside risk. Premiums of 75%, 100% or even 150% are not uncommon in risk arbitrage. In such situations, the arbitrageur must carefully weigh the risk/return trade-off and avoid those situations where the return is not adequate for the risks assumed.

Merger Agreement

Not all merger agreements are created equal and, in fact, vary widely in the parties' degree of commitment to completing the transaction. The weakest form of a merger agreement is an agreement-in-principle or a letter-of-intent, both of which virtually allow either party to walk from the transaction at will. Even definitive agreements can vary widely as to the circumstances under which the buyer can walk from a transaction. Merger agreements must be examined closely to investigate any due diligence conditions, any performance tests, material adverse change clauses, drop-dead dates, walk-away provisions, and regulatory outs. Clearly, the tighter the merger agreement, the greater the certainty of deal completion.

Taxes

A dollar in cash is not always a dollar in cash. The after tax proceeds to the investor can vary widely, depending on the tax structure of the transaction and the tax status of the shareholders. This is especially true as more and more transactions are cross-border deals involving multiple tax codes and investors of different nationalities.

For example, the receipt of cash in a merger may sometimes be taxed as a dividend and not as a capital gain. While this may have limited impact on a US fund, it could be disastrous for an offshore fund which, although it incurs no tax on capital gains, is subject to a 30% withholding tax on dividends. Consider the situation where the arbitrageur buys Company A for US$19.50 and sells it to Company B for US$20.00, earning a US$0.50 spread. If the transaction is taxable as a dividend, 30% of the US$20 (ie, US$6.00) will be withheld by the depository and paid to the IRS. Instead of a US$0.50 gain, this example will provide a US$5.50 loss for the offshore investor.

Consideration

While most deals involve either all cash or all stock, there are a near infinite number of possible permutations. Merger consideration could include:

- a mixture of cash and stock in fixed proportions;
- cash and stock in fixed amounts subject to proration;
- cash and stock in unlimited proportions;
- fixed dollar amount of stock subject to a collar;

- fixed dollar amount of stock subject to a pricing period;
- fixed ratio of stock with a dollar cap;
- stock and a spin-off;
- stock, a spin-off and debt; and
- stock, a spin-off, debt and cash.

The risk the form of consideration poses to the arbitrageur is in the ability to lock in the value of the consideration at the time of closing to ensure a positive spread. This may not always be possible if the consideration does not trade, is illiquid, is contingent, is based on a random pricing period or is subject to an unknown proration. The following quotation from the press release regarding the acquisition of Trimark by AMVESCAP highlights how complex the form of consideration can be:

> AMVESCAP will offer Trimark shareholders a mix of consideration valued at approximately CDN$27.00 per share. Total consideration will include a fixed amount of cash of approximately CDN$760 million and, at current prices, approximately CDN$1.97 billion in shares or other AMVESCAP linked securities, all subject to proration. Trimark shareholders may elect either AMVESCAP Ordinary Shares or shares of an AMVESCAP Canadian subsidiary which are exchangeable into ordinary Shares ("Exchangeable Shares"). If the trading price of the underlying AMVESCAP Ordinary Shares increases or decreases by up to 12.5% from the current level, the number of shares to be issued will be adjusted accordingly. The final value of the consideration to be offered will be based upon the weighted average of the Canadian dollar equivalent of the trading prices of AMVESCAP Ordinary Shares on the London Stock Exchange for a period of five consecutive trading days ending the day that is three business days prior to the closing. Additionally, Trimark shareholders may elect to receive consideration in the form of up to CDN$1.3 billion in principal amount of equity subordinated debentures ("ESDs") subject to a minimum ESD issuance of CDN$100 million. The ESDs are a form of convertible debenture security with a 6.0% coupon, three year term and a strike price at the AMVESCAP Ordinary Share price calculated as of the issue date and an appreciation cap of 20% above the strike price.

Acquirer

One must examine the acquirer as well as the target in a merger transaction. In a cash transaction, for example, one must ensure that the acquirer has the ability to raise the cash to complete the transaction. Also, one needs to know the reputation of the acquirer, as some acquirers are known for being tough negotiators and may try to negotiate the price downward given any opportunity. In stock deals, a recurring risk is that the acquirer itself may become a takeover target. This is one of the biggest risks in risk arbitrage. Since the arbitrageur is long the target and short the acquirer, a bid for the acquirer could cause the acquirer to rise and the target to fall, resulting in losses in both the long and the short side. This happened in the proposed acquisition of Ocular Science by Wesley Jensen. Only two days after the two companies signed a definitive merger agreement, Bausch & Lomb bid for Wesley Jensen, causing the deal with Ocular to break, Ocular's stock price to fall and Wesley Jensen's stock price to soar, leading to large losses for some arbitrageurs.

Fraud

Unfortunately, fraud is a risk that may be difficult to uncover until it is too late. While infrequent, many examples exist, including the creation of Cendant through the merger of HFS with CUC International, the proposed sales of North Face and Sunbeam, and, in the biggest fiasco of all, Bre-X. In the cases of CUC, Northface and Sunbeam, management used irregular accounting practices to overstate earnings. When the frauds were uncovered, the stocks collapsed. Bre-X was the most bizarre story of all. Advised by JP Morgan, Bre-X was billed as the largest, lowest cost and most profitable gold prospect in the world, with a value estimated by mining analysts of US$11 billion. Bre-X became the target of a fierce bidding war between Barrick Gold, Freeport McMoran and Placer Dome, with bids exceeding US$5 billion. In the end, Freeport prevailed, only to find out that the mine was a complete fraud, supposedly masterminded by an employee who then, supposedly, committed suicide. Ultimately, the stock price of Bre-X declined from a high of US$27 to zero.

Regulatory

"In the risky realm of arbitraging mergers and acquisitions, government scrutiny can be perilous and costly", states Marcelo Price of Dow Jones (From Dow Jones News Service). Very true. Regulatory concerns frequently cause spreads to widen, leads to delays in closing and ultimately cause deals to unravel. The most common form of government scrutiny would be antitrust. In the United States, either the Justice Department or the Federal Trade Commission reviews mergers to ascertain their competitive implications. In Europe, each individual country has its own regulatory authority investigating mergers, eg, the Federal Cartel Office in Germany and the Monopolies and Mergers Commission in the United Kingdom. In addition, the European Commission investigates mergers for their impact on the European Union. Many deals have broken due to antitrust enforcement, including such landmark cases as Staples/Office Depot and Lockheed Martin/Northrop Grumman.

However, anti-trust authorities are not the arbitrageurs' only regulatory concern. Many industries have their own specialty government watchdogs. In the United States, these include the Federal Communications Commission for communication deals; the Committee on Foreign Investment for national security concerns; the Federal Reserve for bank deals; State Insurance Commissions for insurance deals; and State Public Utility Commissions for utility, cable and telephone deals. Some deals cause a virtual regulatory quagmire. Our firm's analysis of the merger of Entergy and FPL Group ended promptly after we read the following paragraph from the press release:

> The merger requires the approval of shareholders of both companies, the Securities and Exchange Commission, the Federal Energy Regulatory Commission, the Nuclear Regulatory Commission, and the Federal Communications Commission; the expiration or termination of the waiting period under the Hart-Scott-Rodino Antitrust Improvements Act; and the completion of regulatory procedures in Arkansas, Florida, Louisiana, Mississippi, Texas and the city of New Orleans. The companies' objective is to complete the transaction within 15 months.

Timing

Not only must the arbitrageur predict the outcome of a transaction, but he must also estimate the time to completion. If a deal takes significantly longer to complete than anticipated, the rate of return will decline to uneconomic levels. Intense regulatory review will frequently prolong the time to closing. Dow Chemicals' acquisition of Union Carbide, announced on August 4, 1999, had still not received antitrust clearance as of its first anniversary. If one had put the transaction on the day of the announcement, the annualised return-to-date would be less than 5.0%. Other regulatory reviews have taken longer. Consider the following Bloomberg news story: "The Federal Energy Regulatory Commission rejected Wisconsin Energy and Northern States Power plan to merge and told the companies to come back in three months with a new plan. The two companies first proposed their merger two years ago".

Due Diligence

Announced mergers with due diligence conditions always raise a red flag and create uncertainty as to when, and if, the deal will be completed. Some due diligence clauses are open-ended while others have a specific time, or event, to their completion. One must always research whether there are any due diligence conditions, and be wary of any deals with such clauses. The following news stories are not unusual. "Banyan Corporation announces that it has signed a Letter of Intent to merge with Echo Marketing Corporation. Additional details will be made available as soon as both companies conclude their due diligence". Four months later, "Banyan Corporation announces that after extensive due diligence it has withdrawn from its merger with Echo Marketing Corporation". Or, "EDS today announced it has withdrawn its proposal to acquire Policy Management Systems after completing due diligence".

Other

There are many other risks that may need to be considered including, environmental liabilities, customer concentration, shareholder vote requirements, and management issues. Each of these risks has affected a deal's outcome in previous situations. The important point for the arbitrageur is to know which potential risks are relevant to which particular situations.

Risk management

Once the arbitrageur understands the "risks" in risk arbitrage he can then begin constructing a portfolio of deals that balances risks and limits downside exposure. Unfortunately, every deal has risk, so one cannot avoid risk entirely. Instead, one must prudently manage risk to produce a desired return with minimal drawdowns and low market correlation.

To manage portfolio risk, we first examine the potential downside in a transaction. We eliminate, up front, the riskier arbitrage transactions, which over time have proven a poor or even negative expected value. Instead, we look for deals whose characteristics imply a high probability of closing (see Table 1).

By avoiding low quality deals and focusing on high quality deals, we reduce both the micro and macro risks of our portfolio. For example, by eliminating from our portfolio deals subject to financing or deals with poor performing targets, we remove deals that have a lower probability of closing in a stable market as well as a higher probability of breaking in a deteriorating macro economic environment. On the other hand, by focusing on the strategic combinations of solidly performing targets by large acquirers, we increase the probability that deals in the portfolio will close in all market environments.

To further reduce the risk of our portfolio we:

- constantly monitor events which could alter the risk profile of a transaction, and, when necessary, adjust positions;
- diversify the portfolio across industries to avoid the influence of any industry specific risks;
- diversify the portfolio amongst deals to limit the impact any unforeseen event could have on a portfolio position;
- diversify the portfolio across cash and stock deals to mitigate the effect of rising or falling markets;
- size individual positions according to their potential downside and the probability of that downside;
- hedge stock deals according to their full merger ratios and use "put" protection, when necessary, to limit downside loss; and
- focus on deals with structures that perform better in declining markets.

Table 1 Screening criteria

Avoid	Focus
• Agreements in principle	• Definitive agreements
• Deals subject to financing	• Strategic rationale
• Deals subject to due diligence	• Large acquirer
• Targets with poor earnings trends	• No financing condition
• Targets with negative earnings	• No due diligence condition
• Deals in cyclical industries	• Solidly performing target
• Deals in highly regulated industries	• Reasonable valuation
	• Limited regulatory risk

CONCLUSION

The same wise gentlemen who told me "risk arbitrage is not about making money, its about not losing money" also told me, "*if you watch the downside, the upside will take care of itself*". To manage the downside, one must first have a thorough understanding of the "risk" in risk arbitrage. Using that understanding, one must then construct a portfolio that eliminates poor quality transactions and focuses on high quality deals. To further manage risk within the portfolio, one must constantly monitor one's positions for any changes, hedge all positions, limit position size, and broadly diversify across deals and industries. By implementing these criteria, the manager will be able to deliver the benefits of this strategy: non-correlated, low volatility returns.

1 In addition to mergers, risk arbitrage may also include situations such as spin-offs, recapitalisations, partial tender offers and other forms of restructurings. "Event arbitrage" situations have higher risk/return profiles, as the value of the ultimate consideration is less certain. For the purposes of this chapter, we will limit our discussions to merger arbitrage, the segment of risk arbitrage pertaining to announced corporate mergers and acquisitions.