21. Investment strategies & merger arbitrage

= How can I profit from stock P ∆ caused by M&A deals?

1. Pre-bid
= buy shares of potential takeover targets
2. Post-bid
= merger arbitrage

1. TAKEOVER TARGETS

1.1 Detecting targets

= Rules of thumb based on market experience & academic research

**Higher P(takeover)**

* Smaller company
	+ More buyers can afford purchase cost
	+ Easier to integrate into existing operations
	+ Lower defense capacity against hostile takeovers
* Lower stock market valuation
	+ Low P/E, high div yield
	+ Low takeover P
	+ Low growth expectations as stand-alone company
* Lower management efficiency
	+ Lower profit margins (ROA, ROE) than industry peers
	+ Lower sales growth
	+ Lower inventory turnover
	+ Poorly performing subsidiaries, too much real estate holdings
* Very high/low leverage and/or liquidity
	+ High leverage and/or low liquidity
	= signal of financial distress (weak prey)
	+ Low leverage and/or high liquidity
	= buy company and use the company’s own excess of cash to recover part of cost

**Characteristics**

1. Industry
= M&A deals clustered across industries
2. Market conditions
= hot (risk too high) vs. cold markets
3. Stock P momentum
= speculation and/or insider trading often leads to + P momentum during weeks prior to bid announcement
4. Prediction model
	1. Most European quoted companies acquired 1992-2003 succeeded
	2. Larger companies
	= P(acquisition) lower
5. Trading strategy
! Expensive strategy
! # funds , reward
	1. Compute P(takeover) of all companies in broad market index according to model
	2. Order all shares
	3. Buy top-10% takeover candidates
	4. Update portfolio composition once a month

1.2 M&A mutual funds

= an investment strategy that speculates on the successful completion of M&A

= in tw funds high risk/return & funds low risk/return

🡪 Sharpe ratio = (Ri – Rf)/σi = the larger, the better

🡪 S&P index, do lot better but also have more risk
🡪 Downside risk valued more than upside risk

2. POST-BID STRATEGY: MERGER ARBITRAGE

= When deal is announced, stock P target increases to level just below (1-2%) value of bid

= speculates on successful completion of deal
= zero-investment purchase of a security financed by the sale of an identical security at a higher P.

🡪 Zero P(loss) & positive P(profit) = risk free! But risky due to occasional deal failure

**! Risk arbitrage/Deal arbitrage**

= No pure arbitrage strategy, given there is always risk of non-completed deal
e.g. buyer doesn’t have money/ antitrust laws block deal

2.1 Existing shareholders

1. Receive large part of bid premium if they sell immediately
2. Reward for waiting
= some additional percentage points
3. Risk of waiting
= deal falls apart
	1. Important losses
	2. Sell shares to arbitrageur (insurance against deal risk)

2.2. Merger arbitrage: Risk-components



2.3 Merger arbitrage: Process



2.4 Merger arbitrage: Strategies

Basic strategies

1. Long only
	1. Buy shares of target company
	2. Financed with own funds + ST loans
2. Long + short
	1. Buy shares of target company + short shares of bidder
	2. Finance (part of) long position with short position’s proceeds, then use own funds & ST loans
3. Basic strategies can be combined with derivatives to increase strategy’s leverage and/or hedge market risk

3. THREE TYPES OF MERGER ARBITRAGE

3.1 Cash offer

= go long in shares of target company

* Most straightforward type of merger arbitrage
* Promised return
= Net spread/Cost of purchase
	+ Spread = Tender offer P – current target P – commission costs + target dividend
	+ Spread decreases as deal gets closer to completion
* Low deal failure risk
= there is already an agreement, there is money & antitrust won’t block
* Expected stock P
= P(success).Pricesuccess + P(failure).Pricefailure
* Expected return
= (expected P/Cost of purchase) – 1
* Expected annualized return
= (1+ expected return)365/days to completion – 1
* Opportunity cost of capital
	+ Benchmark return
	= annualized 3-month treasury bill return
	+ Expected annual return > benchmark return?
	= invest!
* Expectation of deal failure

	+ Break-even analysis
	= alternative method
	= market’s implied expectation of deal failure (p) can be computed from break-even relationship
		- (1-p) x (profit if deal succeeds) + p x (loss if deal fails) = 0
		- P = …
		- Follow arbitrage strategy if own assessment of success > 1-p

3.2 Exchange offer

= company A wants to acquire company B by exchanging shares of A for shares of B

**Strategy**

= long in target & short in bidder

* Limit financing needs (use proceeds short position to finance long position)
* Neutralize exposure to value of bidder’s share P
* Hedged vs unhedged
	+ Unhedged investment
	= captures spread only if bidder P at completion deal = closing P start date
	+ Hedged investment
	= shorts x shares of bidder for each share of target purchased
	= captures spread as long as deal is completed
* Adjust (gross) spread for all costs & benefits linked to the strategy’s positions
	+ Gross spread + target div – bidder div + Short interest proceeds – commission cost
	= net spread
	+ Return
	= net spread/cost of purchase
		- Cost of purchase = offer P – net spread
	+ Expected annualized return
	= (1 + expected return)(12/months to completion) – 1
* Medium – high deal failure risk
	+ Large amount of public criticism
	+ High risk of antitrust intervention
	+ Resistance from bidder’s largest shareholders
* Stock p & implied P(success) continuously ∆

3.3 Combined offer

= exchange offer + fixed cash amount

Strategy

= long in target & short in bidder for the exchange offer part of the bid

3.4 Other types

1. Combined offer with fixed % of shares/cash
	1. Exchange offer + cash
2. Combined offer with variable exchange ratio
= derivatives

! When you get in offer at different times

= \* different results & different prospectives about success/failure

4. EMPIRICAL EVIDENCE

= evidence of very high excess returns

* Correlation other assets low
* Beta should be low (zero)
= if deal risk uncorrelated with market returns

5. MERGER ARBITRAGE FUNDS

5.1 Merger arbitrage funds

= offers opportunities to make small % of profits during short periods of time (deal = ±4 months)

* Viable strategy
	+ Needs constant flow of new cases
	= consider almost all M&A deals in certain market
	+ Needs to be able to invest large amounts in each deal

🡪 Specialized merger arb funds

5.2 MAF & leverage

= returns low, so need to be levered

* Expected return x # times per year – net interest on loan = net profit
* Net profit/equity investment (fund) = return
* If too many deals fail
= not enough money to pay interest

5.3 Selling points

* Professional, advanced strategy with proven track-record
* High (Excess) returns
* Low correlation with other assets, low (zero) beta
* Example The Arbitrage Fund
* Risk return comparison & performance comparison
= S&P very high return, but also high risk

**Problems with selling points**

1. Professional, advanced strategy with proven track-record
	1. Survivorship bias
	= Funds that are active today, are not funds that went out of bs in the past
	= more skill or more luck?
2. High (excess) returns?
= theoretical excess returns high, but should be corrected by
	1. Transaction costs
	2. Impact of arbitrage trading on profit potential (share P)
	= size of arbitrage positions limited
3. Low correlation with other assets
= low beta
= true, but only if markets are doing well!

5.4 MAF: returns

1. After controlling for market risk
= significant 0.3% α on monthly basis
2. Excess return 3-4% annual
	1. Fair compensation for deal risk & increasing market liquidity

S&P merger arbitrage index

= provide risk arbitrage strategy that exploits commonly observed P∆ associated with global selection of publicly announced M&As

5.5 MAF: correlation with other assets

🡪 Risk is asymmetric!

🡪 Market beta almost 0 in bull markets (0.02), but increases to 0.49 in bear markets

**Effect of economic crisis**

🡪 During crisis: MAF go down alogn with markest (no zero beta)

🡪 Why are hedge funds not crisis proof?