



# The Value of Cash and Cross Holdings

# 1. Dealing with Cash and Marketable Securities

- Every firm has investments in cash and near cash investments (treasury bills, commercial paper etc.) They hold cash for a multitude of reasons:
  - Operations: Some cash may be needed for operations - a retail firm will have cash in its cash registers
  - Precautionary motive: Firms hold cash just in case they may need to draw on it in the event of a crisis
  - Speculation: Just in case a great investment opportunity comes along..
- Since cash is so different from other operating assets in terms of risk and returns, valuing it becomes a challenge. There are two general ways of dealing with cash:
  - Value it separately from the other assets
  - Incorporate it into cash flows and value it with other assets

## a. Cash in DCF valuation: Separated from other assets

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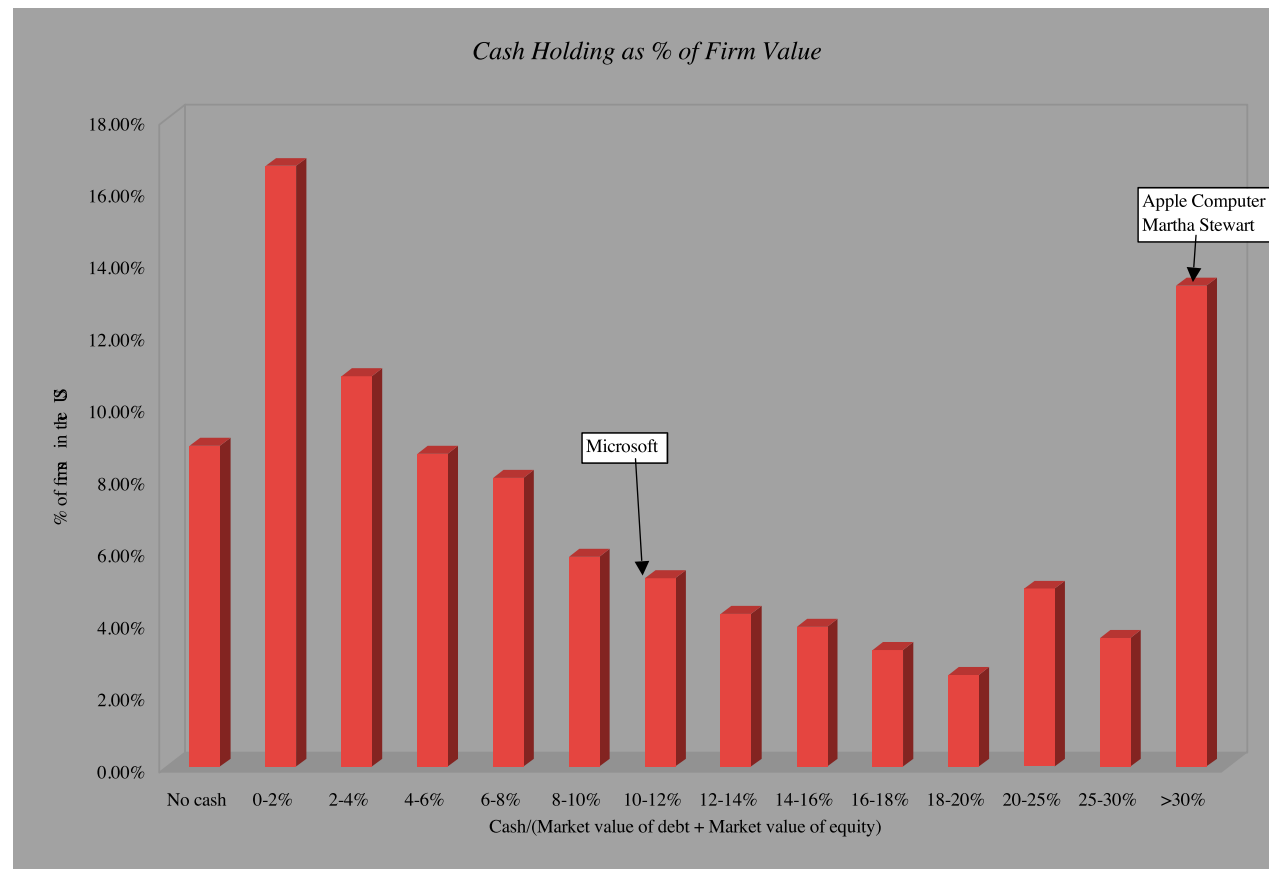
- The simplest and most direct way of dealing with cash and marketable securities is to keep it out of the valuation - the cash flows should be before interest income from cash and securities, and the discount rate should not be contaminated by the inclusion of cash. (Use betas of the operating assets alone to estimate the cost of equity).
- Once the firm has been valued, we generally add back the value of cash and marketable securities and subtract out gross debt. (This is also equivalent to subtracting out net debt)

## Operating versus Non-operating Cash

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- Some practitioners draw a distinction between what they call operating cash and excess cash.
- Operating cash is usually defined as a percent of revenues (based either on industry averages or rules of thumb) and is considered to be required for operations. Thus, it is included in the working capital and acts as a drain on the cash flows.
- It is only the excess cash that is added on to the DCF value of operating assets.

# How much cash is too much cash?



## An alternate distinction: Wasting versus Non-wasting cash

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- The discussion of whether cash is operating or non-operating misses the point. The real distinction should be between wasting and non-wasting cash.
- As long as cash is invested to earn a fair market rate (given the risk of the investment), it is not wasting cash. It is irrelevant whether it is needed for operations or not.
- If cash is invested at below market rates or is idle, it is wasting cash and should have a discount attached to it.

## Estimating how much cash is wasting cash...

- It is often difficult, from the outside, to estimate how much cash in a firm is wasting and how much is non-wasting. There are two solutions.
- The first is to assume that any reasonably competent treasury department would not let large cash balances go uninvested. This would lead us to conclude that no cash (or at least a negligible amount) will be wasting cash.
- The second is to divide the interest income earned by the average cash balance during the year and to compare this rate to the rate on a short-term government security (T.Bill).
  - Interest income for year = \$ 3 million
  - Average cash balance = \$ 150 million
  - Interest rate earned =  $3 / 150 = 2\%$
  - Treasury bill rate during year = 3%
  - Wasting cash for year =  $(2\% / 3\%) * 150 = \$ 50$  million

## Discount for Wasting Cash

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- If cash is indeed invested at below market rates, there should be a discount attached to the cash balance. Only the non-wasting cash should be added back to the value of the operating assets to arrive at firm value.
- The wasting cash should become part of working capital. As revenues increase, the wasting cash balance will increase proportionately and reduce value.



## b. Incorporating Cash into the DCF valuation

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- In some discounted cash flow valuations, the income from cash is incorporated into the free cash flows. When discounted back at the right discount rate, the resulting value will include cash.
- This is often the case when you value equity and use net income, you are valuing cash (because the interest income from cash is part of net income). The cost of equity used then has to allow for the firm's cash holdings - the unlevered beta used should be the weighted beta of operating assets and the beta of cash (zero).
- The danger with this approach is that it is built on the assumption that cash as a percent of value will remain unchanged over time.

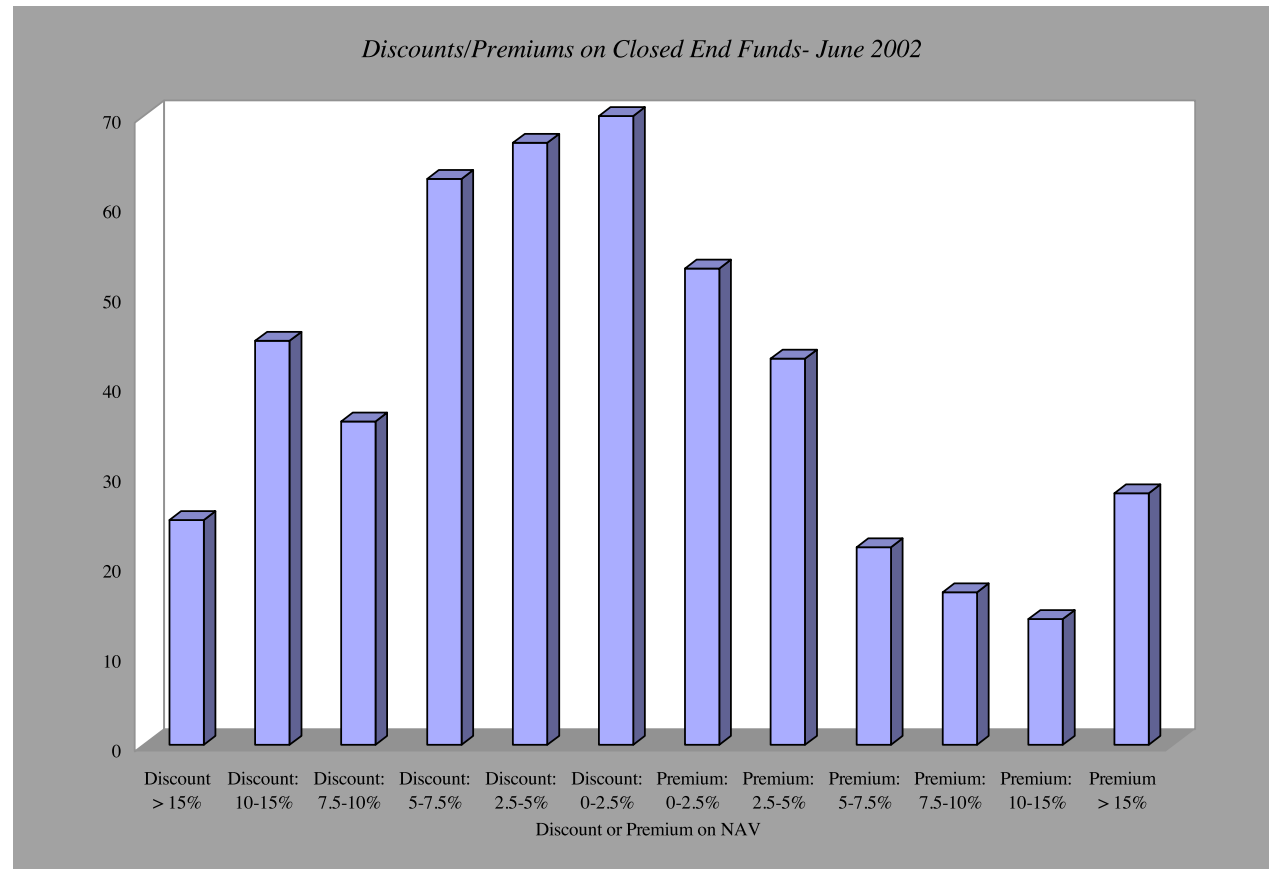
## The Value of Cash

- Implicitly, we are assuming here that the market will value cash at face value. Assume now that you are buying a firm whose only asset is marketable securities worth \$ 100 million. Can you ever consider a scenario where you would not be willing to pay \$ 100 million for this firm?
- Yes
- No
- What is or are the scenario(s)?

## The Case of Closed End Funds

- Closed end funds are mutual funds, with a fixed number of shares. Unlike regular mutual funds, where the shares have to trade at net asset value (which is the value of the securities in the fund), closed end funds shares can and often do trade at prices which are different from the net asset value.
- The average closed end fund has always traded at a discount on net asset value (of between 10 and 20%) in the United States.

# Closed End Funds: Price and NAV



## A Simple Explanation for the Closed End Discount

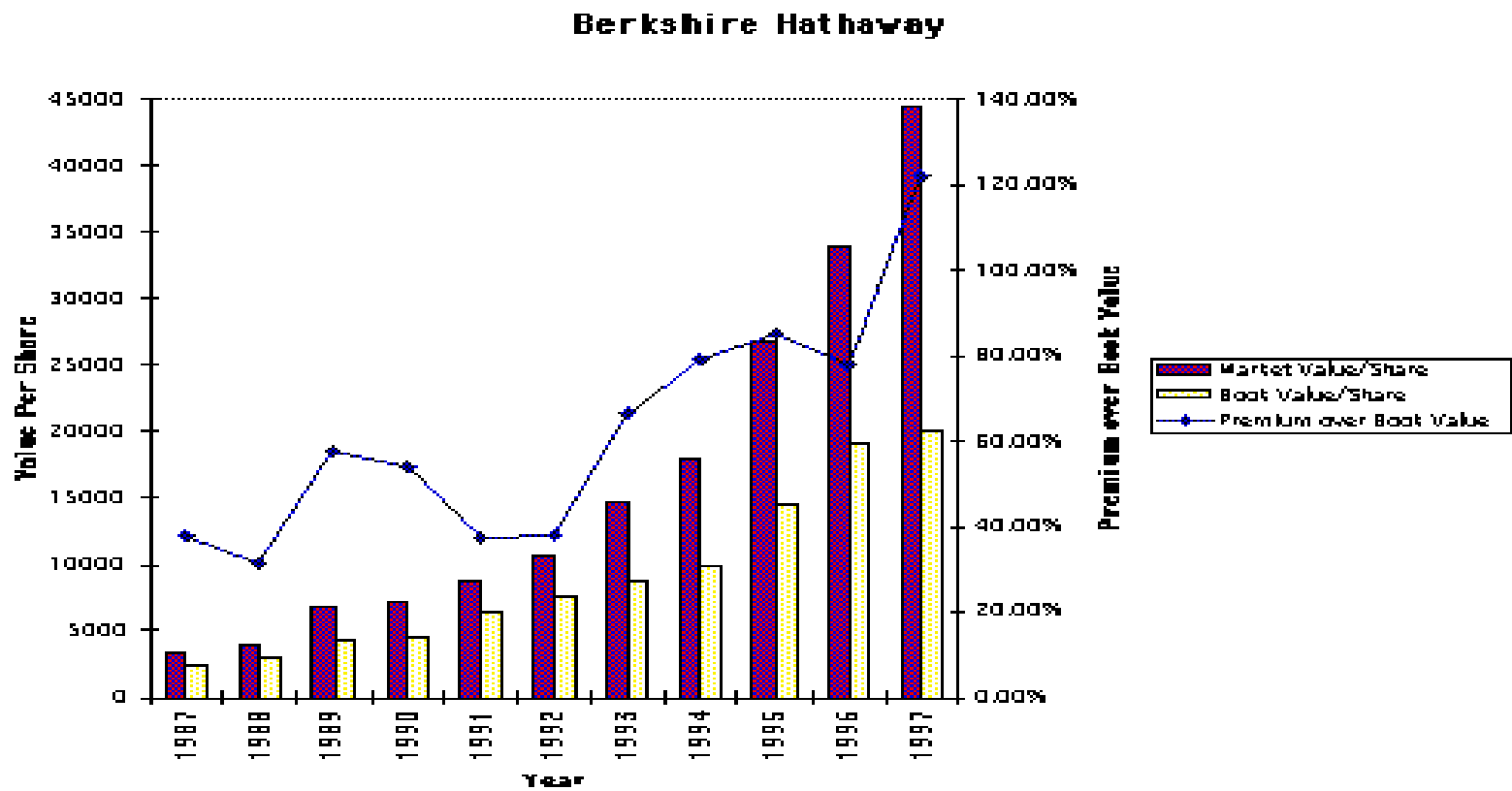
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- Assume that you have a closed-end fund that invests in ‘average risk’ stocks. Assume also that you expect the market (average risk investments) to make 11.5% annually over the long term. If the closed end fund underperforms the market by 0.50%, estimate the discount on the fund.

## A Premium for Marketable Securities

- Some closed end funds trade at a premium on net asset value. For instance, the Thai closed end funds were trading at a premium of roughly 40% on net asset value and the Indonesian fund at a premium of 80%+ on NAV on December 31, 1997. Why might an investor be willing to pay a premium over the value of the marketable securities in the fund?

# Berkshire Hathaway



## 2. Dealing with Holdings in Other firms

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- Holdings in other firms can be categorized into
  - Minority passive holdings, in which case only the dividend from the holdings is shown in the balance sheet
  - Minority active holdings, in which case the share of equity income is shown in the income statements
  - Majority active holdings, in which case the financial statements are consolidated.



## An Exercise in Valuing Cross Holdings

- Assume that you have valued Company A using consolidated financials for \$ 1 billion (using FCFF and cost of capital) and that the firm has \$ 200 million in debt. How much is the equity in Company A worth?
- Now assume that you are told that Company A owns 10% of Company B and that the holdings are accounted for as passive holdings. If the market cap of company B is \$ 500 million, how much is the equity in Company A worth?
- Now add on the assumption that Company A owns 60% of Company C and that the holdings are fully consolidated. The minority interest in company C is recorded at \$ 40 million in Company A's balance sheet. How much is the equity in Company A worth?

## More on Cross Holding Valuation

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- Building on the previous example, assume that
  - You have valued equity in company B at \$ 250 million (which is half the market's estimate of value currently)
  - Company A is a steel company and that company C is a chemical company. Furthermore, assume that you have valued the equity in company C at \$250 million.

Estimate the value of equity in company A.

## If you really want to value cross holdings right....

- Step 1: Value the parent company without any cross holdings. This will require using unconsolidated financial statements rather than consolidated ones.
- Step 2: Value each of the cross holdings individually. (If you use the market values of the cross holdings, you will build in errors the market makes in valuing them into your valuation.)
- Step 3: The final value of the equity in the parent company with N cross holdings will be:

Value of un-consolidated parent company  
– Debt of un-consolidated parent company

$$+ \sum_{j=1}^{j=N} \% \text{ owned of Company } j * (\text{Value of Company } j - \text{Debt of Company } j)$$

## If you have to settle for an approximation, try this...

- For majority holdings, with full consolidation, convert the minority interest from book value to market value by applying a price to book ratio (based upon the sector average for the subsidiary) to the minority interest.
  - Estimated market value of minority interest = Minority interest on balance sheet \* Price to Book ratio for sector (of subsidiary)
  - Subtract this from the estimated value of the consolidated firm to get to value of the equity in the parent company.
- For minority holdings in other companies, convert the book value of these holdings (which are reported on the balance sheet) into market value by multiplying by the price to book ratio of the sector(s). Add this value on to the value of the operating assets to arrive at total firm value.