

## **FIN 423 -- RECAPITALIZATIONS**

**Debt-for-Equity Swaps**

**Equity-for-Debt Swaps**

**Calls of Convertible Securities to Force Conversion**

- optimal conversion policy

**Asymmetric Information**

### **What Is a Recapitalization (Debt/Equity Swap)?**

**1. No net cash flow into the firm**

- apart from the transactions costs of the exchange

**2. "Pure" change in capital structure**

## **Why Swap Debt for Equity (leverage increasing)?**

**More corporate tax shields**

**Favorable inside information about the NPV  
of existing and future projects**

- **asymmetric information**

**Reduce the amount of outside equity**

- **reduce agency costs of equity**
- **creeping LBO?**

## **Why Swap Equity for Debt (leverage decreasing)?**

**Expected bankruptcy costs and/or agency  
costs have risen unexpectedly**

- **regulatory constraints (banks, S&L's, etc.)**
- **on the verge of default, so the firm  
arranges a private reorganization**

## How Does the Stock Market React to Recapitalizations?

1. **Leverage increasing => Stock price increases**
  - consistent with corporate tax shields
  - it works even for preferred stock -> common stock exchanges, which can't be explained by the tax shield
2. **Leverage decreasing => Stock price decreases**
  - why would managers voluntarily choose to do a transactions that would make stockholders worse off?

## Information Effects of Recapitalizations

**Exchange of equity for debt (to avoid default?) reveals bad news about the value of the firm**

### **Important to distinguish between:**

- recapitalization causing the drop in stock price, and
- speeding up the revelation of information that would have come out anyway

## Information Effects of Recapitalizations (cont.)

If speeding up the revelation of information, it is only the cost of having the stock price drop a little sooner traded off against:

- expected bankruptcy costs
- renegotiation costs, and
- litigation costs

if the recapitalization does not occur

## Masulis: Evidence on Common Stock Price Reactions to Recapitalizations

Sample <u>Event</u>	Effect on <u>Leverage</u>	Avg 2-day <u>Return (t-test)</u>	<u>Size</u>
Debt -> Common*	increasing	9.79 (12.5)	85
Pref -> Common*	increasing	3.34 (4.5)	43
Debt -> Preferred*	increasing	4.63 (5.8)	43

[These estimates treat leverage decreasing transactions as negative leverage increasing transactions (i.e., multiply returns by -1), Table 3]

## Masulis: Evidence on Common Stock Price Reactions to Recapitalizations

<u>Sample Event</u>	<u>Effect on Leverage</u>	<u>Avg 2-day Return (t-test)</u>	<u>Size</u>
Debt -> Preferred	increasing	2.13 (2.3)	34
Preferred -> Debt	decreasing	-14.29 (5.2)	9

[Separate analysis of leverage increasing/decreasing debt -> preferred exchanges, Table 4]

## Effects on Bond Returns as a Function of Covenants

<u>Type of Debt</u>	<u>Covenants</u>	<u>Return (t-test)</u>	<u>Size</u>
Convertible	---	.0016 (1.5)	47
Non-convertible	---	-.0030 (3.1)	49
Both	Complete	.0018 (1.3)	52
Both	Incomplete	-.0077 (3.0)	44
Convertible	Incomplete	-.0045 (0.9)	26
Non-convertible	Incomplete	-.0084 (2.7)	18

- These latter numbers come from figures 3-5

## **Calls to Force Conversion of Convertible Debt**

**Mikkelson studies situations where the firm calls a convertible debt issue to force investors to convert their debt to common stock**

- **similar to debt/equity recapitalization**
- **avg 2-day stock return = -2.13%**
  - **113 cases ( $t < -5$ )**

## **Optimal policy for the holder of an "in-the-money" convertible bond?**

**Equivalent to owning the stock with a put option to sell the stock back to the firm at expiration for the conversion price**

- **Don't exercise until the last minute**
  - **to keep a valuable option alive**
- **for economic purposes, the convertible debt is essentially equity, except the dividend payments are tax deductible**
- **for accounting purposes (or debt covenants) this is still debt**

## **Optimal policy for a firm with an "in-the-money" convertible bond?**

**Since the call price is undoubtedly below the market value of the implied equity position (or the value of the convertible as a straight bond), by calling the firm will force conversion**

- **By killing a valuable option of the bondholders, the old stockholders are better off (by the value of the option)**

### **Mikkelsen:**

## **Firms Wait Too Long to Call**

**Convertible is way in the money for a long time**

- **avg excess conversion premium is 3.6% to 1%, declining, in the 12 weeks before the call**

## **Mikkelson: Firms Wait Too Long to Call**

**Market is surprised when a call happens:**

- **the convertible bond prices fall on announcement (-5.41% in weeks 0 and +1)**
- **the stock price falls when the call is announced (-2.13%)**
- **the wealth transfer effect would imply an increase in the stock price**
- **it looks more like a small equity/debt recapitalization**

## **Stock Is "Over-valued" Before Forcing Conversion**

**Managers expect that the price will fall before maturity date, and they will have to repay the debt in cash (unless they force conversion now)**

- **may explain why managers wait "too long"**
- **they don't want to imply that they think the stock price is too high**
- **avg firm value falls -2.71% in weeks 0 and +1 relative to call**

## **Firms That Call Convertibles Perform Terribly Afterwards**

### **Ofer & Natarajan:**

- 141 voluntary calls for NYSE/AMEX firms 1971-80
- EBIT, EBT and EPS growth rates all fall from 18-20% in 5 years before call to much lower rates in the 5 years after the call
  - EPS growth rates are negative in years +1 to +4: Table 2
- stock price falls about 15 percent per year (abnormal returns) for the next 5 years
  - Table 5!!!

## **Stock Price Performance for Firms That Call Convertibles**

**Consistent with the reluctance of managers to call to force conversion as theory suggests**

- so as not to look like these disasters in the making

**Also an inefficient markets story here:**

- Why doesn't the stock price fall 75% immediately when the call is announced if the market can predict these disastrous results?

**O&N find -1.3% with a t-test < -5, similar to Mikkelson**

## **Dunn & Eades: Optimal Conversion Strategy for Convertibles**

**The holder of a convertible (bond or stock) should convert (kill the option) when:**

- **dividend on the common stock is greater than the payout (dividend or coupon) on the convertible**
- **this is analogous to an American call option on a dividend-paying stock**
  - **i.e., you may want to kill the option if the dividend payment is large enough**

## **Dunn & Eades: Optimal Conversion Strategy for Convertibles**

**They look at convertible preferred stocks where the dividend yield is lower than the yield on the implied common stock position**

- **so investors should convert, but they are slow to do so (for some unspecified reason)**
- **all NYSE or AMEX-listed convertible preferreds listed on January 5, 1970 (then track these securities until December 31, 1983)**
- **avoids 'selection bias' of only looking at called securities**

## **Dunn & Eades: Optimal Conversion Strategy for Convertibles**

**About 25% of the outstanding shares are not converted 5 years after it would be optimal for shareholders to do so**

- **it costs them 2.5% per year to follow the suboptimal strategy: Table 4**
- **frequently convertible preferreds sell at discounts from conversion value**
  - **transactions costs?**

## **Dunn & Eades: Policy Implications**

**Firms should somewhat delay their calls to force conversion if they think they have some 'passive' investors who will not optimally convert on a voluntary basis**

- **accepting lower dividends/coupon payments than they should**

## **Asquith & Mullins: Call Policy for Convertible Debt**

**208 convertible bond with conversion values exceeding call prices at January 1984:**

- **(1) 30 are call protected**
  - **90% of these bonds are still outstanding**
  
- **(2) 66 have a conversion value less than 120% of the the call price**
  - **66% of these bonds are still outstanding**
  - **given the waiting period and the stock price drop after the call is announced, these bonds may not remain "in-the-money" when the call would be exercised**

## **Asquith & Mullins: Call Policy for Convertible Debt**

**208 convertible bond with conversion values exceeding call prices at January 1984:**

- **(3) of the remaining 112 bonds, 90 have after-corporate tax interest payments less than the dividends that would be paid if converted**
  - **cash flow advantage for the firm**
  
- **(4) of the remaining 22 bonds, 14 were called sometime in 1984**
  - **so only 8 bonds can't be "explained"**

## Asquith & Mullins: Voluntary Conversions by Investors

Investors should convert voluntarily if there is a cash flow advantage to them, and the value of the option (downside protection) is small:

- i.e., conversion is strongly "in-the-money"
- after-tax dividends > after-tax coupons on the convertible debt
  - corporate investors pay lower taxes on dividends

## Asquith & Mullins: Voluntary Conversions by Investors

Regression test (208 bonds, Table IV):

$$Y = 45.5 - .11 [CV - CP] - .47 [D - I(1-t)] + e$$

(15.) (-3.21) (-11.42)

where Y = % of issue outstanding

CV = conversion value

CP = call price

D = dividend if converted

I = coupon interest on bond

t = corporate tax rate

## **Asquith & Mullins: Voluntary Conversions by Investors**

**Regression explains 49% of variation in voluntary conversions, and t-stats are large**

- **when option is more in-the-money [(CV-CP) is large], more voluntary conversions occur**
- **when dividends are relatively large, more voluntary conversions occur**

## **Asquith & Mullins: Summary**

**Even without the negative "signal" implied by a call to force conversion, it is possible to explain much of the observed behavior of call policy using cash flow arguments**

- **if most investors convert voluntarily, there is only a small benefit in forcing conversion for the rest**
  - **value of option is small**
- **on the other hand, A&Q apply a high standard [(CV/CP) > 1.2]**
  - **cases where CV = CP are where the insurance value of the option is greatest**
  - **"at-the-money" option**