

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

<u>Event</u>	<u>Effect on Leverage</u>	<u>Avg 2-day Return (t-test)</u>	<u>Sample 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>Event</u>	<u>Effect on Leverage</u>	<u>Avg 2-day Return (t-test)</u>	<u>Sample 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)**

Mikkelson: 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 "Overvalued" 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 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**

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