

BAKER - WRUGLER (2002)

Capital Structure Models

A. STATIC MODELS

1. No frictions --no taxes, no transactions costs, no asymmetric information, efficient markets etc.

→ Capital Structure doesn't matter
(*M&M*)
2. Add taxes and bankruptcy costs

→ Optimal Capital Structure
(*Trade-Off Theory*)
3. Add asymmetric information
Equity is costly to issue --Creates a further preference for debt (Myers)
(*Pecking Order*)

→ Optimal Capital Structure
(*Trade-Off Theory with another cost*)

B. DYNAMIC MODLES

1. Trade-Off theory models in a dynamic setting

Firm value is assumed to follow a diffusion process with constant volatility (Leland JF 1994)

2. Add adjustment costs

There is an "optimal capital structure *strategy*." Due to the cost of adjustment, firms can, at certain points in time, be very far away from what would, in a static model, be considered the optimal point. Firm engage in periodic restructuring.

→ Optimal Capital Structure Strategy (Leland)

Is there any way to see empirically if managers are making optimal capital structure decisions??

3. New Twist --Managers attempt to “time the market”

- Issue stock when the stock is perceived by the manager to be “overvalued” (How would you determine empirically whether the stock is “overvalued”?)
- Buy back stock when the stock is perceived by the manager to be “undervalued”

Note that the earlier papers always assumed that everyone was rational and prices were correct, given the information available.

Market timing potentially adds an element of irrationality to the story
(.) Either:

- Managers irrationally think they can forecast future returns.
What would be evidence of this?
- Investors don't correctly adjust prices when equity issues or buy backs occur (price inefficiency). *What would be evidence of this??*
 - Don't drop the price enough when issues are announced.
 - Don't raise the price enough when buy backs are announced.

Lots of empirical evidence to suggest that this happens

- Stock is issued (bought back) when the stock price is high (low) relative to book value and past market values. (what does this imply? -- good investment opportunities?, overvaluation?)
- Market timing appears to be successful
- Firms issue equity at times when investors are “too enthusiastic” about earnings prospects

Baker- Wurgler

“In this paper, we ask how equity market timing affects capital structure.”

“The main finding is that low leverage firms are those that raised funds when their market valuations were high, as measured by book-to-market ratio, while high leverage firms were those that raised funds when their market valuations were low.”

“The impact of past market valuations (*on a firm's capital structure*) turns out to have a half-life of well over 10 years.”

“Capital structure is the cumulative outcome of attempts to time the equity market”

Empirical Tests

- Data
 - All COMPUSTAT firms with an IPO between 1968 and 1998 (IPO date defined as the first year that COMPUSTAT reports market value data.)
 - Exclude financial firms
 - Exclude firms with minimum BV < \$10M
 - Exclude firms w/o complete data on total assets between IPO year and year the firm exits COMPUSTAT.
 - Exclude some firm outliers for capital structure and market-to-book ratio

- Study sample in IPO time (hold the number of years since the IPO fixed)