Complementary Research Methodologies:
The Interplay of Theoretical, Empirical and Field-Based Research in Finance

The theory and practice of corporate finance:
Evidence from the field

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Overview

- Survey CFOs to find out
  - How they choose capital structure
  - How they estimate/use cost of capital
  - Which capital budgeting tech. they use

- Ask 15 questions
  - many subparts (over 100 total questions)
  - firm characteristics
    - CEO age, tenure, education, share ownership
    - firm P/E, debt rating and ratio, revenues, etc.

- Descriptive vs. draw inference on theory
Who and how did we survey?

- Financial Executives Institute (FEI)
  - 9,000 total members; 4,400 list a CFO/Treasurer
  - firms represent various sizes, industries
    - fax survey: 1 week to respond
    - refax to everyone: 3 days to respond
      - surveys were received over three week period

- Fortune 500
  - mail survey: one week to fax back
    - phone call, fax second copy of survey if needed
  - remail to everyone
Survey design

- Read, reviewed many articles
  - review available on www.duke.edu/~charvey
- Prepared initial, rough survey
- Circulated to 15-20 academics, FEI
  - changed/added questions
  - altered survey design
- Ran beta tests at FEI and Fuqua
  - goal: 15 minutes to complete
- Modified survey one last time
  - final survey instrument in appendix of paper
How good is survey evidence?

- Are executives optimizing?
  - How interpret their responses?
  - Darwinian economics
- Can they express what they are doing?
- Can we ask questions properly?
- Find out what companies actually do.
Response bias?

- 9% response rate
  - FEI (8% out of 4,400)
  - Fortune 500 (14% out of 500)
  - Similar response rate as recent surveys

- What about the other 91%?
  - check early vs. late
  - compare firm char: respondents vs. universe
    - Goodness-of-fit
    - Bootstrapping: universe and Compustat
    - Also: different ordering of questions.
Summary information

- Percent that seriously considered issuing
  - common stock: 64%
  - convertible debt: 20%
  - foreign debt: 31%

- Percent of firms that are
  - public: 63%
  - regulated utility: 7%
  - pay dividends: 53%
  - calculate cost of equity: 64%
Figure 1

I: CEO Age (years)

J: CEO tenure (years)

K: CEO Education

L: Exec. stock ownership
What techniques does your firm use to evaluate projects?

- Gitman and Forrester (1977) find only 9.8% of firms use NPV
- We find 74.9% of respondents “always” or “almost always” use NPV
Capital budgeting

- What techniques does your firm use to evaluate projects?
  - Size makes a difference!
    - Large firms score NPV 3.42/4.00
    - Small firms score NPV 2.83/4.00
    - Small firms use payback as much as NPV
  - CEO education
    - CEOs with MBAs more likely to use NPV
How does your firm estimate cost of equity capital?

- Gitman and Mercurio (1982) find 29.9% of participants use the CAPM
- We find 73.5% use some form of CAPM

Use CAPM?

![Bar chart showing the distribution of responses to the question: 0=never, 1=sometimes, 2=often, 3=10% of the time, 4=always. The chart indicates that 4=always is the most common response, with 60% of participants choosing this option.]

Cost of capital technique
Cost of capital technique

- How does your firm estimate cost of equity capital?
  - Size is important
    - Large firms score CAPM 3.27/4.00
    - Small firms score CAPM 2.49/4.00
  - Education
    - CEOs with MBAs more likely to use CAPM
Cost of capital technique

- How does your firm estimate cost of equity capital?
  - Dividend discount model’s popularity is waning
    - Gitman and Mercurio (1982) find 31.2% use a DDM to establish cost of capital
    - Our participants score the DDM 0.91/4.00
What are the most important risk factors and do you use them in cash flows, discount rate or both?

- Large firms:
  - Market, FX, business-cycle, inflation and interest rates
  - Ferson and Harvey (1993): Market, FX, inflation, interest rates

- Small firms:
  - More impacted by interest rate risk than FX
Risk factors

- What are the most important risk factors and do you use them in cash flows, discount rate or both?
  - Momentum not important
    - Used by only 11.1% of respondents
  - Book to market not important
    - Used by 13.1% of respondents
Project evaluation

- What discount rate do you use for an overseas project?
  - More than half would “always” or “almost always” use the single company-wide discount rate
  - Other half use a discount rate that reflects the particular project risks
Project evaluation

- *What discount rate do you use for an overseas project?*
  - Implies that many (half) view investment overseas to have identical risk to domestic investment - or that international risks have been ignored.

- *Size makes a difference*
  - Risk matched discount rate scores 2.34/4.00 (large) versus 1.86/4.00 (small)
  - Fortune 500: risk-matched discount rate obtains a 2.61/4.00 score.
Capital structure

- What is your
  - credit rating
  - long-term debt ratio
- Do you have a target debt ratio?

- What factors affect your choice of
  - amount of debt
    - target/deviation from target
  - short-term vs. long-term debt
  - issuing convertible debt
  - issuing foreign debt
  - issuing equity
Somewhat tight or strict (overall: 44%)
- large (55%) small (36%)
- investment grade (65%) speculative (41%)
- regulated (67%) unregulated (43%)
### What factors affect debt policy?

<table>
<thead>
<tr>
<th>Important (%)</th>
<th>Unimportant (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>59.4: fin. flexibility</td>
<td>0.0: bargain with employees</td>
</tr>
<tr>
<td>57.1: credit rating</td>
<td>1.1: accumulate past profits</td>
</tr>
<tr>
<td>48.1: CF volatility</td>
<td>1.7: mgmt work hard</td>
</tr>
<tr>
<td>46.8: insufficient CF</td>
<td>2.3: threat to competitors</td>
</tr>
<tr>
<td>46.4 low interest rates</td>
<td>4.8: takeover deterrent</td>
</tr>
<tr>
<td>44.9: tax deduction</td>
<td>4.8: personal tax cost</td>
</tr>
<tr>
<td>44.9: tax deduction</td>
<td>9.8: impression of prospects</td>
</tr>
</tbody>
</table>

% that say option is important (3) or very important (4)

Tables 5/6
**Short-term vs. long-term debt?**

**Important (%)**

- 63.3: maturity match (private (67.4), small (66.4))
- 48.8: issue long-term to avoid refinancing in “bad times” (high debt (62.8))

**Unimportant (%)**

- 4.0: asset substitution
- 9.0: time credit rating
- 9.5: underinvestment

Table 7
Convertible debt

**Important (%)**
- 58.1: delayed equity
- 50.7: stock undervalued
- 48.0: force conversion
- 43.8: investors unsure riskiness
- nonMBA CEO (55.6)

**Unimportant (%)**
- 1.4: asset substitution
- 12.5: other firms in industry use

Table 10
## Foreign debt

<table>
<thead>
<tr>
<th>Important (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>85.8: natural hedge</td>
</tr>
<tr>
<td>63.4: source close to use</td>
</tr>
<tr>
<td>52.3: low foreign interest rates</td>
</tr>
<tr>
<td>44.3: foreign tax treatment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unimportant (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.5: foreign regulations</td>
</tr>
</tbody>
</table>

Table 8
What factors affect equity policy?

<table>
<thead>
<tr>
<th>Important (%)</th>
<th>Less important (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>68.6: EPS dilution</td>
<td>5.0: personal tax advantage</td>
</tr>
<tr>
<td>66.9: stock valuation</td>
<td>14.1: stock is cheapest</td>
</tr>
<tr>
<td>62.6: recent stock price</td>
<td>15.6: other sources used up</td>
</tr>
<tr>
<td>53.3: emp. stock plans</td>
<td>21.5: impression of prospects</td>
</tr>
<tr>
<td>51.6: target D/E</td>
<td>23.0: other firms in industry</td>
</tr>
<tr>
<td>50.4: dilute shares of certain shareholders</td>
<td>30.4: recent profits</td>
</tr>
</tbody>
</table>
Capital structure overview

- Moderate support for trade-off theory
  - corporate taxes (+), personal taxes (-)
  - bankruptcy costs (-), CF volatility (+)

- Moderate support for pecking order
  - financial flexibility important (+)
  - importance unrelated to asymmetric info (-)

- Less support for other theories
  - underinvestment: absolute and relative support

- Practical rules important
  - credit rating, EPS dilution, fin. flexibility
Perspective

- Today’s empirical research takes one of two approaches
  - Large sample studies
  - Clinical/case studies

- We offer a third alternative
We analyze the behavior of managers [like clinical studies] on a grand scale [like large sample studies].

Control variables tell us whether behavior is consistent with theory.

- lack of support of a particular theory does not necessarily invalidate the theory.
Perspective

- Though theories are always difficult to test, our work provides fresh insights -- from an alternative methodological perspective.

- There are many questions for the future:
  - Many issues could be explored with our current dataset.
  - Future survey planned on dividend policy.
Ongoing research

- Questions such as
  - Correlation (financial flexibility in capital structure, real options)

- Relate managerial views to actions and fundamental characteristics of the firm