# Venture Capital Valuation of Early Stage Companies

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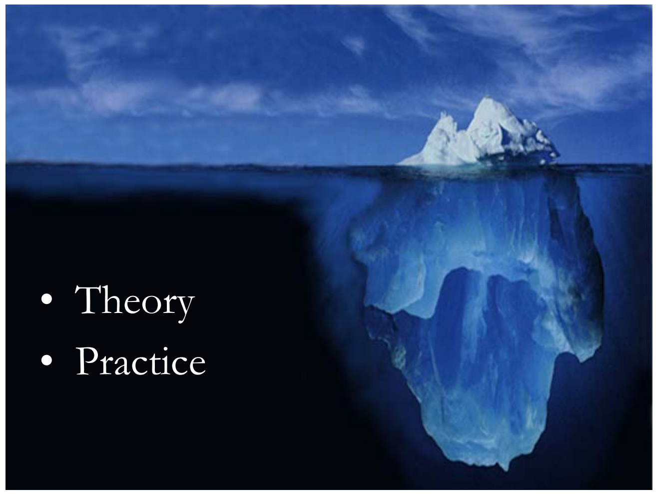
## Orchard often values the common stock of venture backed companies

- For tax purposes (IRS 409A) and financial reporting purposes (ASC 718 / SFAS 123R)
- If the equity is worth $50 million and there are 3 layers of preferred, what is the common worth?



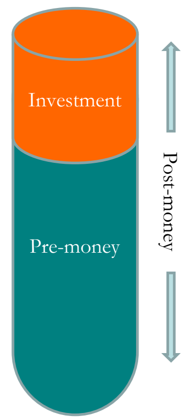



## Pre-money vs. Post-money

- A typical early-stage company
  - Small team
  - Promising technology
  - Good prospects but minimal revenues
  - No profits
- Assume
  - 1 million shares outstanding
  - Looking for an investment of $2.5 million
  - Priced at $5.00

# Pre-money vs. Post-money

| Pre-money | |
|---|---|
| Shares outstanding before | 1,000 |
| Price per share | $5.00 |
| Pre-money value | $5,000 |
| **Investment** | |
| Shares issued | 500 |
| Price per share | $5.00 |
| Investment amount | $2,500 |
| **Post-money** | |
| Shares outstanding after | 1,500 |
| Price per share | $5.00 |
| Post-money value | $7,500 |




In thousands, except per share amounts



# What determines the value?

The higher the price,
the fewer shares we sell…

| Price | $2.50 | $5.00 | $10.00 |
|---|---|---|---|
| Proceeds | $2,500 | $2,500 | $2,500 |
| Shares issued | 1,000 | 500 | 250 |

# What determines the value?

The fewer shares we sell,
the less equity we give up …

| | | | |
|---|---|---|---|
| Price | $2.50 | $5.00 | $10.00 |
| Shares out | 1,000 | 1,000 | 1,000 |
| Shares issued | 1,000 | 500 | 250 |
| Shares after | 2,000 | 1,500 | 1,250 |
| New equity | 50% | 33% | 20% |



# What determines the value?

The less equity we give up,
the higher our value…

| | | | |
|---|---|---|---|
| Price | $2.50 | $5.00 | $10.00 |
| Shares after | 2,000 | 1,500 | 1,250 |
| After-the-money value | $5,000 | $7,500 | $12,500 |

## The "Venture Capital Method"

- Forecast a future value assuming success
  - Example: if the company hits its plan, it will be worth $60 million in 5 years based on a multiple of revenues
- Determine a required rate of return
- Figure out how much of the future value the investor needs to own in order to achieve the targeted return



## Valuation determines the investor's return

| | | | |
|---|---|---|---|
| Price | $2.50 | $5.00 | $10.00 |
| Equity interest | 50% | 33% | 20% |
| Future equity | $60,000 | $60,000 | $60,000 |
| FV of interest | $30,000 | $20,000 | $12,000 |
| Investment years | 5 | 5 | 5 |
| Investment | $2,500 | $2,500 | $2,500 |
| Compound return | 64% | 52% | 37% |

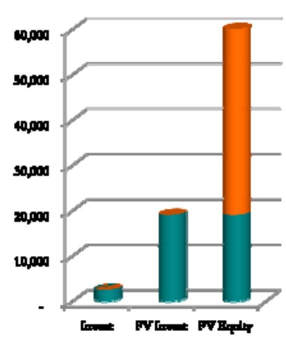
# Targeted rates of return

| Stage of development | Plummer | Scherlis & Sahlmann |
|---|---|---|
| Start up | 50-70% | 50-70% |
| First stage | 40-60% | 40-60% |
| Second stage | 35-50% | 30-50% |
| Bridge / IPO | 25-35% | 20-35% |



# Single stage investment

- Invest $2,500
- Required return 50%
- Target future value is $19,000
- Sell company for $60,000
- Target ownership
  $19,000 / $60,000 = 32%
- Post money value
  $2,500 / 32% = $7,900
- Pre money value
  $7,900 - $2,500 = $5,400



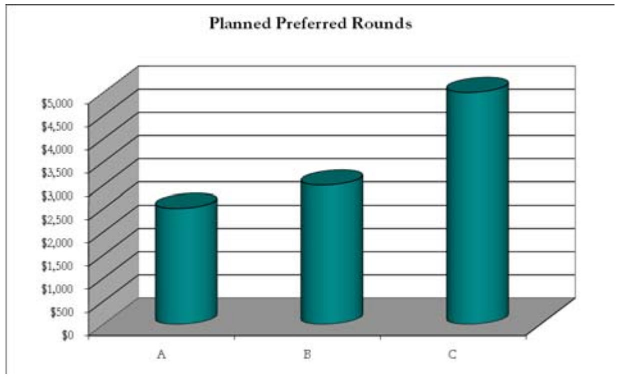
# Multi-stage investment

Assume

Series A
$2,500 in Year 1

Series B
$3,000 in Year 2

Series C
$5,000 in Year 3




If management achieves its plan, the company will have a value of $60,000 in 5 years



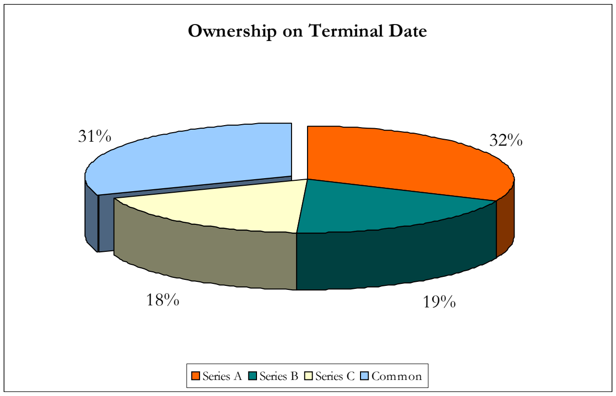
# We can estimate the future values needed to provide the required return

Series A 50%
PV $2,500
FV  $19,000

Series B 40%
PV $3,000
FV $11,500

Series C 30%
PV $5,000
FV of $11,000

# Future split assuming company is sold for $60,000






# Work back from future value to first round

Terminal value → Series A requires $19 million → $19 million equals 32% of equity $19,000 /$60,000

Adjust for dilution → But Series B will buy 19% & Series A 18% → Dilution to Series A 100%-19%-18%=62%

Initial value → Series A buys 32%/62%=52% → After-money $2,500 / 52% = $4,800 → Pre-money $4,800-$2,500= $2,300

## <u>There are two kinds of dilution: ownership & equity</u>

- Series A ownership is diluted:
  - Buys a 52% interest
  - Owns only 32% when the company is old
- But its value is not diluted:
  - Invests $2,500
  - Receives $19,000 when the company is sold
- When a company is raising equity capital
  - It can't avoid ownership dilution
  - It tries to avoid value dilution.



# Theory vs. Practice

## How do VCs really determine value?

- Consider a number of qualitative factors: management, size of market, etc.
- Know the pricing of other deals.
- Respond to competition and negotiation



## Know the pricing of other deals

- One source is "Venture Perspectives" from Foley, Hoag
- Tracks pre-money values in Series A deals
- In Q4 2010 in New England, there were
  - 5 life science deals with pre-money values of $6.6-16.0 million.
  - 7 technology deals with pre-money values of $2.6 to $18.6 million.
- http://www.emergingenterprisecenter.com/News/Publications/Updates/FH-Venture-Perspectives/FH-Venture-Perspectives-0211.aspx

"You can dictate the value if I can dictate the terms"

| | Q3 2010 | Q4 2010 |
|---|---|---|
| Cumulative dividends | 76% | 69% |
| Participating preferred | 38% | 62% |
| Redeemable preferred | 48% | 77% |

Source is Foley Hoag



# Deciphering venture capital terms

- Cumulative dividends: if the dividends are not paid in one year, they are added to the dividends owed in the next year.
- Participating preferred: if the company is sold, the preferred is paid the liquidation preference, then paid again as if it had converted to common.
- Redeemable preferred: after 5 years, the preferred investor can demand repayment.

## Assume 1million shares outstanding & $2.5 million is raised at $5.00 per share

| First VC | Second VC |
| --- | --- |
| – 1X LP<br>– No participation | – 2X LP<br>– Participation |

- Pre-money value is $5 million in both cases
  - 1,000 shares x $5 = $5,000
  - 500 shares x $5 = $2,500
  - $5,000 + $2,500 = $7,500



## Assume business is sold for $10,000

| First VC | Second VC |
| --- | --- |
| – LP is $2,500<br>– Conversion value is $10,000 x 33% = $3,333<br>– Proceeds to remaining common shareholders $10,000 - $3,333 = $6,667 | – LP is $5,000<br>– Proceeds after payout of LP $10,000 - $5,000 = $5,000<br>– Participation is $5,000 x 33% = $1,667<br>– Proceeds to remaining common shareholders $5,000 - $1,667 = $3,333 |

# Conclusions

- The venture capital method works for common shareholders as well as preferred
  - What do you expect as future value?
  - What sort of return do you require?
- Creating competition among venture investors may be to the company's benefit
- Understand the terms



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