

Lecture 2 Raising Capital: Debt and Leases

1: Raising Debt Capital

Debt Capital

- Pecking order suggest that: Preference: Internal Finance > Debt > Equity

Properties

- Interest payments are tax-deductible to the companies
- ‘Default Risk’: lenders may take control of the company and the assets when the company cannot meet its obligation- ‘default’
- No voting power
- have Debt Covenants

Debt Covenants

Definition: the specific provisions in the debt contract which promises that certain activities will or will not be carried out. It is designed to protect the interests of lenders and reduce downside risk

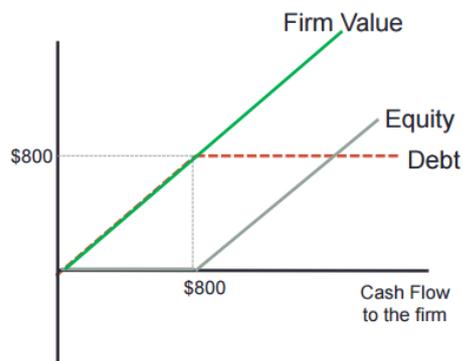
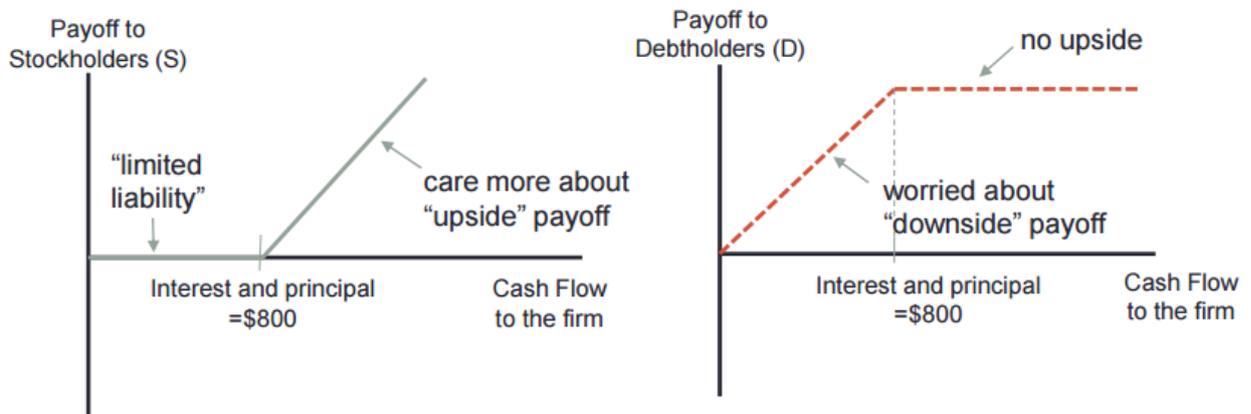
- Negative(restrictive-not to do) Covenants: limit access to further debt, restrict holdings of certain investments, restrict dividends paid
- Positive(affirmative- to do) Covenants: maintain assets, provide audited financial statements to the lenders

Types of Debt

Bank Loans	Debt Securities (Capital markets)
<u>Bank overdraft</u>	<u>Commercial paper, Bills of exchange:</u> short-term ➤ Intermediate with banks
<u>Inventory loan:</u> made to a company so it can purchase products or inventory. Those inventories served as collateral is the business does not sell its inventory and cannot repay the loan	<u>Debentures:</u> medium-long term yield a fixed rate and is secured against assets
<u>Bridge loan:</u> a short-term loan used until the company secures permanent financing or removes an existing obligation. It is used to meet current obligations by providing immediate cash flow. To bridge significant transactions that are slightly mistime.	<u>Corporate bonds:</u> more flexible, can be variable or fixed <u>Unsecured notes:</u> long-term, not secured by the issuer’s assets, similar to a debenture.
<u>Term loans</u> (fixed, variable): long-term	

2: Debt vs Equity Payoffs

Shareholder-Debtholder Conflicts



“Equity + Debt = Firm Value”

- For Debt holders: dislike risky projects due to defaulting
 - A full payoff to debtholder is effectively a long position in risk-free debt as well as short position in a put option
- For From stockholders: prefer volatile cash flows so they can gain on the upside. Hence, prefer risky projects.
 - A full payoff to shareholders is effectively a long position in a call option with an exercise price equal to amount of debt owed
 - May have incentive to take on risky negative NPV projects
- Equity + Debt = Firm Value (market value of assets)

3: Operating and Finance Leases

- Leasing: a form of debt
- Lessor= legal owner/ fancier of asset
- Lessee= the asset user
- Lease= contract where the lessor receives fixed payments from the lessee in return for the use of the asset

Operating Lease	Finance Lease
Like a (usually short-term) rental agreement	A long-term agreement(alternative to borrowing to buy)
Cancellable by lessee	Non-cancellable without substantial penalty
Risk of ownership borne by lessor	∴ Risk of ownership transferred to lessee
Lessor is often a supplier of the asset	Lessor is generally a financial institution
	Effectively lessor is a source of finance for lessee
<u>Lease vs. buy</u>	<u>Lease vs. borrow-buy</u>

4: Financial Evaluation of Leasing

Financing Lease

- Methodology: identify the incremental cash flows from leasing as opposed to borrow to buy

$$NPV_0 = C_0 + \frac{C_1}{(1+k)^1} + \frac{C_2}{(1+k)^2} + \dots + \frac{C_T}{(1+k)^T} = \sum_{t=0}^T \frac{C_t}{(1+k)^t}$$

Discount Rate: k: 'opportunity cost of capital'

- NOTE: 'k' is the **after-tax** cost of borrowing on an equivalent loan to buy the asset:

After-Tax cost of borrowing on an equivalent loan to buy the asset:

$$= \text{Interest Rate} \times (1-t_c)$$

b/c interest payment is tax deductible

Assumption: assume leasing has the same risk as interest and principal payments on a loan

- Tax-effects
 - Tax-shields from lease payments (lessee)
 - Tax-shields from asset depreciation (lessor-owner of the asset)
 - Tax on gain from the sale of asset (lessor-owner of the asset)

Cash flows from leasing vs. borrow-to-buy:

Leasing

Lease payments	(-)
Tax-shields from lease payment	(+)

Borrow-to-Buy

Amount borrowed (+) & Interest and Principal paid (-) <i>perfectly offset in present value terms</i>	0
Cost of asset	(-)
Tax-shields from asset depreciation	(+)
Residual asset value	(+)
Tax on gain from sale of asset	(-)

Note: Though depreciation is not a cash flow, but the tax shield on depn is a cash flow.

Financing decision (lease vs borrow to buy)

Formula: CFs(Leasing)-CFs(Borrow-to-buy)

Investment decision:

- Should I invest the A?
- Use cash flows operation of the asset
- Assume that you **borrow and buy**

Gain on sale = Residual Value – Book Value = salvage value

Book value = accumulated depn= \$0

Illustration: s 35- 41

Annuity formula: a coupon payment every period until year n, start at year 0

$$PV = \frac{C}{k} \left[1 - \frac{1}{(1+k)^n} \right]$$

- Financing can complement investment strategy
 - A finance decision but a good finance decision (i.e. with positive NPV value) can add value to the company. This facilitates investment strategy
 - If NPV Finance is positive, NPV investment + NPV financing. If NPV financing is negative, NPV=NPV investment only. If NPV investment is negative but the figure is smaller than NPV financing, still do the project.

Operating Lease

$$NPV_{operating\ lease} = NPV_{finance\ lease} + PV_{option\ to\ cancel}$$

The cancellation option is valuable b/c

- Insurance against premature obsolescence

- Reduce operating exp when demand is weak

5: Suggested Advantages of Leasing

The Purpose of Leasing

Leasing from others - borrow vs. borrow-to-buy - leasing to others

Think about the NPV of a finance lease from the lessor's point of view:

$NPV_{Lessee} =$	$NPV_{Lessor} =$
+Cost of Asset	-Cost of Asset*
-PV(Lease Payments)	+PV(Lease Payments)*
+PV($\frac{\text{Tax Saving/Cost on}}{\text{Lease Payments}}$)	-PV($\frac{\text{Tax Saving/Cost on}}{\text{Lease Payments}}$)*
-PV($\frac{\text{Tax Savings on}}{\text{Depreciation}}$)	+PV($\frac{\text{Tax Savings on}}{\text{Depreciation}}$)*
-PV(After Tax Residual Value)	+PV(After Tax Residual Value)*

*'Market Friction' enables lessee and lessor both have a positive NPV (both better-off) through:

- Company Taxation
 - If lessor's tax rate is higher than the lessee's, lessor can receive a higher tax benefit which is reflected as a smaller after tax discount rate and obtain a positive NPV lessor. Because the lower discount rate, they may charge lessee a lower borrowing rate (lower lease payment) as well so that they can obtain a positive NPV as well e.g.: cross-border leases, progressive tax rates, or tax loss carry-forwards
 - Although the tax on lease payment received by the lessor is higher but the tax shield effect on depreciation outweigh the loss of tax on lease payment → both lessee and lessor may end up in positive NPV
- Diff Costs of Capital
 - $NPV_{lessor} = -\text{Asset Cost} + PV(\text{Lease Payments})^* + \text{Residual Value}$
 - $NPV_{lessee} = +\text{Asset Cost} - PV(\text{Lease Payments}) - \text{Residual Value}$
 - Cost of capital for the lesser is lower than that of the lessee, we can have both positive NPVs b/c the risk of ownership is transferred to lessee, the financial risk of the lessor is not that high and can borrow at a lower rate.
- Transactions Costs (embedded in interest rate charged by lenders)
 - Since the lessor own the asset, when lessee defaults on a payment, the lessor can take back the item more easily. Hence, the bankruptcy cost is lower comparing to the bank loan → the borrowing rate can be lower for lessee
 - Standardization: buy in a significant quantity which can low administrative and transaction costs
- 'Off-Balance Sheet Financing '
 - Understated the true leverage ratio or debt capacity of the company
 - AASB now require to put certain lease on the B/S where the lease is non-cancellable and significant
 - Lease term $\geq 75\%$ of the asset's useful life
 - PV (lease payments) $\geq 90\%$ of the fair value of the A to the lessor

6: Propensity to Lease

- **Less Sensitivity to use and maintenance**
 - Little incentive to care for an asset when they have no right to its salvage value
 - Lessor can incorporate the risk of abuse into lease payments
 - ∴ Assets that are more sensitive to use and maintenance will be more expensive to lease – purchase instead
- **Specialised Assets**
 - Lessee values specialised assets more than lessor
 - Disposal value of lessor is uncertain if no active second-hand market
 - Therefore, specialised assets have higher likelihood of a purchase
- **Flexibility and transaction costs**
 - Quality assessment and ownership transfers involve transactions costs
 - The higher these costs, the more likely an asset will be leased

- **Comparative Advantage in Asset Acquisition/Disposal**

$$NPV_{\text{lessor}} = -\text{Asset Cost} + PV(\text{Lease Payments}) + \text{Residual Value}^*$$

$$NPV_{\text{lessee}} = +\text{Asset Cost} - PV(\text{Lease Payments}) - \text{Residual Value}$$

- If lessor can get higher disposal value than a lessee or obtain asset at a lower market price, asset is more likely to be leased