

Entrepreneurship

Lecture # 10



Saltanat Kondybayeva, PhD

Topic 10.
Financing Innovation



PLAN

- 1. Funding Request**
- 2. Financial Projections**
- 3. What is 'Net Present Value - NPV'**

Funding Request

Financing is extremely important for innovation and growth, in particular at the seed and early stages of business development. Access to finance is a central issue for both innovative entrepreneurs and policy makers. Entrepreneurial start-ups and small and medium-sized enterprises (SMEs) face financial constraints largely because of their inherent riskiness and weaknesses.

Why?

Determine
Risk/Return Rates

Inform Investment
Decisions

Indirect finance

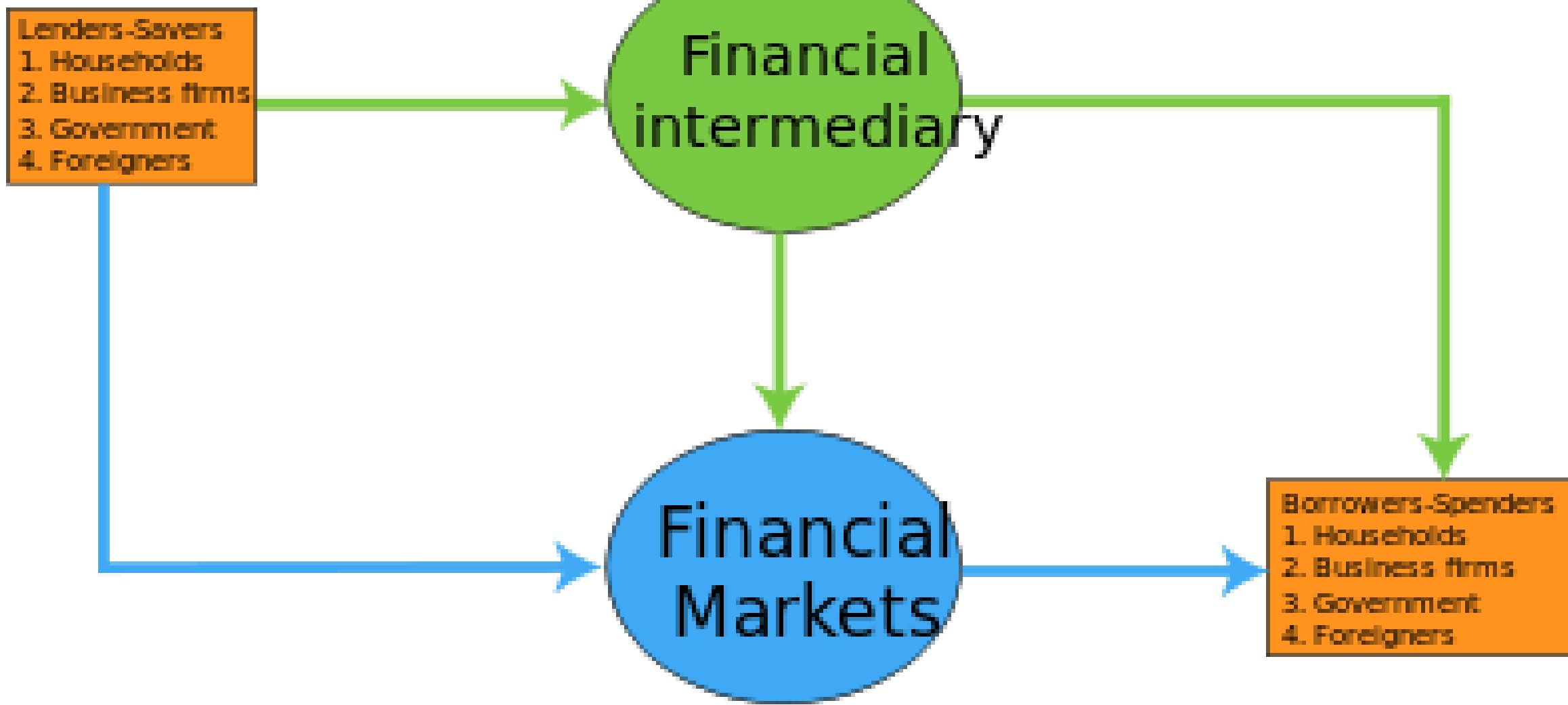
Lenders-Savers
1. Households
2. Business firms
3. Government
4. Foreigners

Financial
intermediary

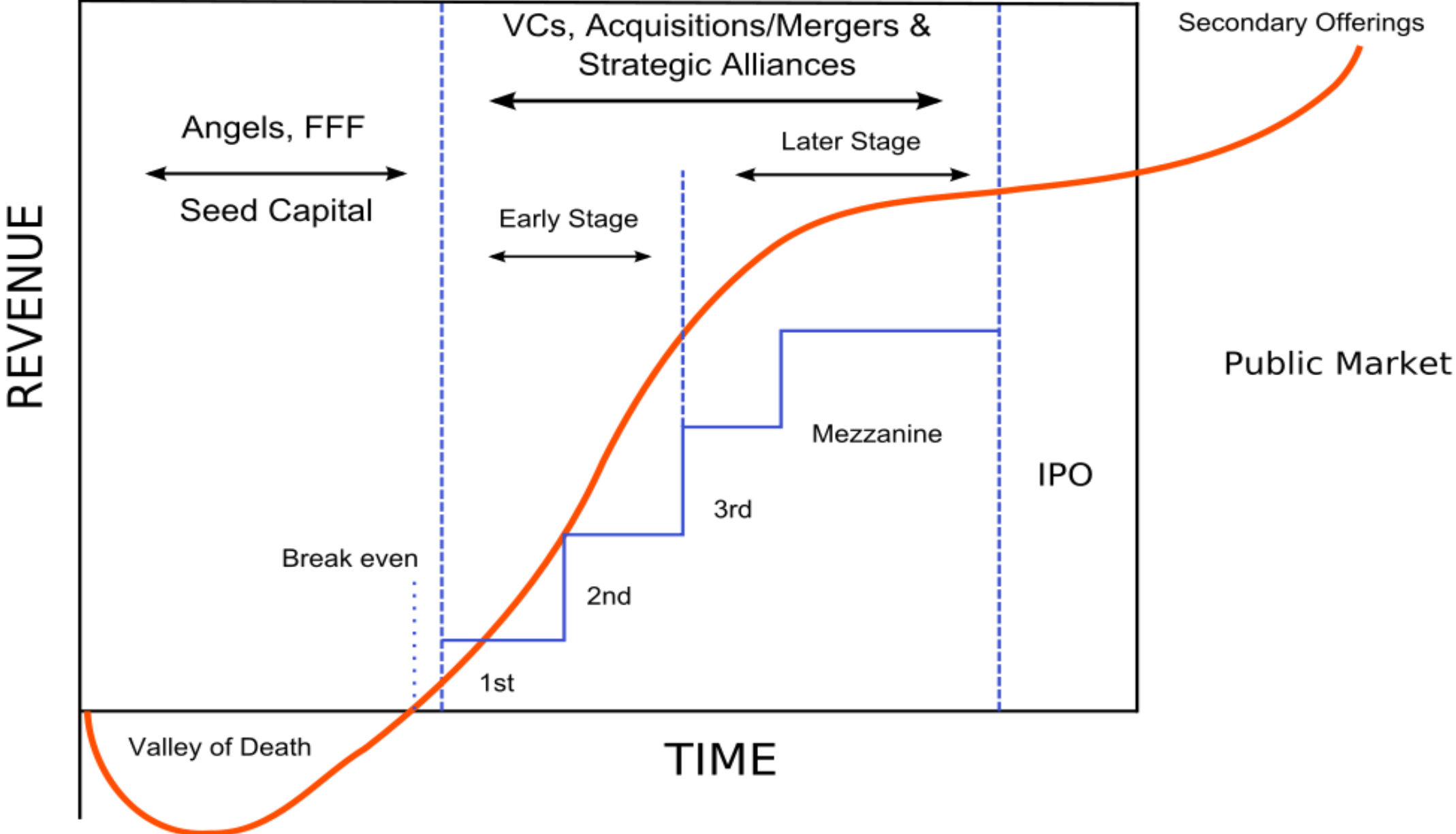
Borrowers-Spenders
1. Households
2. Business firms
3. Government
4. Foreigners

Financial
Markets

Direct finance



Startup Financing Cycle



Problems in financing

Innovative SMEs face several barriers for accessing finance, such as:

- asymmetric information
- financing gaps between investors and entrepreneurs
- suffer from resource constraints,
- insufficient collateral,
- lack of a track record.

The Problem of Financing Innovation

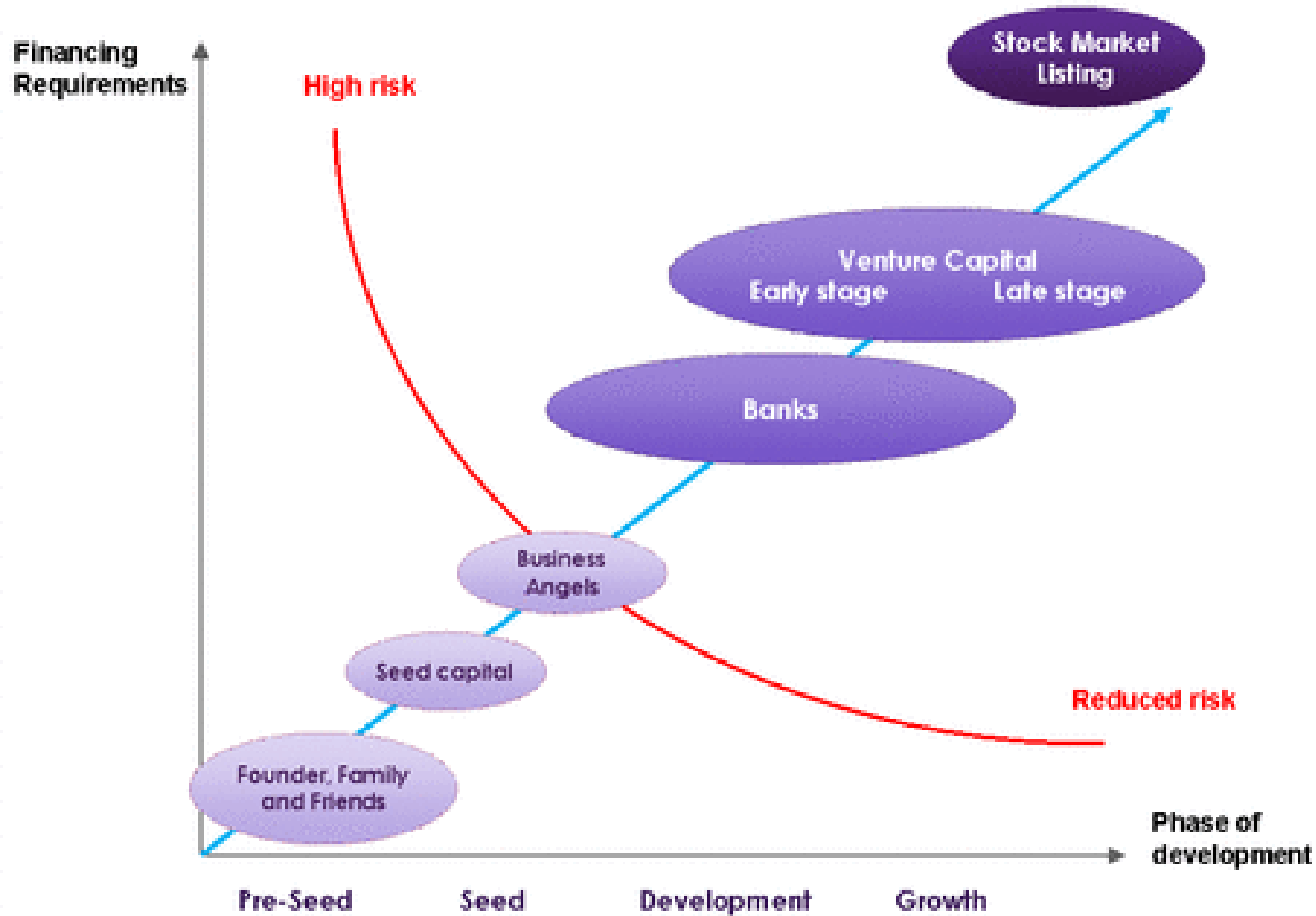


Sources of Finance

- YOU!
 - Savings, personal loans, housing loans
- The 3 F's:
 - Family
 - Friends
 - Fools
- Donors/foundations
- Government agencies
- Banks
- Commercial finance/leasing companies
- Angel investors, private equity investors, venture capitalists
- Suppliers/Customers/Partners

Financing instrument	Key features in financing	Remarks
Bank loan	Used as one of the most common tools for access to finance, It needs collateral or guarantees in exchange for loans.	Obligation to repay as debt
Grant, subsidy	Used as seed funding for innovative start-ups and SMEs at the seed and early stage: small business innovation research in the United States , the United Kingdom and the Netherlands; feed-in-tariffs in Denmark and Germany: OSEO funding in France ; Innovation Investment Fund in the United Kingdom.	Complements market failures, financing at seed and initial stage
Business angel	Financing source at early riskier stage and provides financing, advice and mentoring on business management. Tends to invest in the form of groups and networks, e.g. Tech Coast Angels and Common ANGELS in the United States, Seraphim Fund in the United Kingdom.	Financing at start-up and early stage
Venture capital	Tends increasingly to invest at later, less risky growth stage. Referred to as patient capital owing to the lengthy time span (10-12 years) for investing, maturing and finally exiting, e.g. Pre-seed Fund and Innovation Investment Fund in Australia, Yozma Fund in Israel, Seed Fund Vera in Finland, Scottish Co-investment Fund in the United Kingdom.	Financing at later expansion stage
Corporate venturing	Used by large firms to invest in innovative start-ups with a view to improving corporate competitiveness with either strategic or financial objectives.	Strategic motive
Crowd funding	A collective funding tool via the Internet which makes it easier for small businesses to raise capital at the seed and early stages.	Potential for fraud
Tax incentive	A broad range of tax incentives for R&D and entrepreneurial investments in most countries, e.g. Enterprise Investment Scheme in the United Kingdom, tax relief on the wealth tax (ISF) in France. Business Expansion Scheme in Ireland.	Indirect, non-discriminatory

Type	Advantages	Disadvantages
Tax concession	<ul style="list-style-type: none"> - <u>Nondiscriminatory</u>, open to all - "Arm's length" instrument; activities chosen by industry - Maintenance of firm's confidentiality - Speedy processing (where approval is automatic) 	<ul style="list-style-type: none"> - Not of benefit to unprofitable or start-up firms - Subsidizes existing activity that would have occurred anyway (unless based on incremental performance, which is hard to police)
Repayable loan	<ul style="list-style-type: none"> - Can be targeted widely or focused - Priorities or scope (type, timing, size) set by government - Specific proposals can be made by firms 	<ul style="list-style-type: none"> - Requirements (e.g., collateral) work against small and medium-sized enterprises and start-ups - Procedures are long and cumbersome
Grant	<ul style="list-style-type: none"> - Benefits targeted activities, sectors, clusters, some types of firms - Allows prioritization and therefore is appropriate for innovative projects - No need to write it off 	<ul style="list-style-type: none"> - May be subject to criticism for being unfair - Government must have the ability to select recipient
Equity participation	<ul style="list-style-type: none"> - Benefits targeted activities - Firms get investment money up front, reducing risks and uncertainty and increasing creditability 	<ul style="list-style-type: none"> - May be subject to criticism for being unfair - Government must have the ability to select recipient - Must write off bad projects



Assets	Liabilities & Shareholders' Equity	<u>Expected Returns</u>	<u>Key Characteristics</u>
Assets	Bank Debt (30-60%)	Senior 4% - 8%	<ul style="list-style-type: none"> - Low financing costs - Lowest default risk in cap structure - Floating rate, callable instrument - Restrictive maintenance covenants - Ability to increase line of credit / additional debt
	High Yield Debt (0-15%)	8% - 14%	<ul style="list-style-type: none"> - Typically fixed rate loan - Prepayable penalties for first few years - Limited flexibility in raising additional debt
	Quasi Equity (0-15%)	15% - 20%	<ul style="list-style-type: none"> - Has debt and equity characteristics - Downside protection (like debt) with upside potential (like pure equity)
	Common Equity (20-50%)	Junior 20% - 40%	<ul style="list-style-type: none"> - Riskiest security in capital structure - No downside protection with unlimited upside potential - Private Market Equity - Financial Sponsor - Public Market Equity - Common Shareholders

funding request should include the following information

- Your current funding requirement
- Any future funding requirements over the next five years
- How you intend to use the funds you receive: Is the funding request for capital expenditures? Working capital? Debt retirement? Acquisitions? Whatever it is, be sure to list it in this section.
- Any strategic financial situational plans for the future, such as: a buyout, being acquired, debt repayment plan, or selling your business. These areas are extremely important to a future creditor, since they will directly impact your ability to repay your loan(s).

Financial Projections

Planning out and working on your company's financial projections each year could be one of the most important things you do for your business. The results--the formal projections--are often less important than the process itself. If nothing else, strategic planning allows you to "come up for air" from the daily problems of running the company, take stock of where your company is, and establish a clear course to follow.

three good reasons to project your financials:

- **First, the financial plan translates your company's goals into specific targets.** It clearly defines what a successful outcome entails. The plan isn't merely a prediction; it implies a commitment to making the targeted results happen and establishes milestones for gauging progress.
- **Second, the plan provides you with a vital feedback-and-control tool.** Variances from projections provide early warning of problems. And when variances occur, the plan can provide a framework for determining the financial impact and the effects of various corrective actions.
- **Third, the plan can anticipate problems.** If rapid growth creates a cash shortage due to investment in receivables and inventory, the forecast should show this. If next year's projections depend on certain milestones this year, the assumptions should spell this out.

Financial Projections

Historical Financial Data

- If you own an established business, you will be requested to supply historical data related to your company's performance. Most creditors request data for the last three to five years, depending on the length of time you have been in business.
- The historical financial data to include are your company's income statements, balance sheets, and cash flow statements for each year you have been in business (usually for up to three to five years). Often, creditors are also interested in any collateral that you may have that could be used to ensure your loan, regardless of the stage of your business.

Prospective Financial Data

- All businesses, whether startup or growing, will be required to supply prospective financial data. Most of the time, creditors will want to see what you expect your company to be able to do within the next five years. Each year's documents should include forecasted income statements, balance sheets, cash flow statements, and capital expenditure budgets. For the first year, you should supply monthly or quarterly projections. After that, you can stretch it to quarterly and/or yearly projections for years two through five.

Depending on a company's situation and objectives, you'll need to develop several types of projections and budgets:

- **A model that projects either the current year or a rolling 12-month period by month.**
- **A long-range, strategic plan looking out three to five years.**
- **Budgets, typically covering one year.**
- **Cash forecasts.**

Key Elements of Your Financial Projection

- **Income Statement:** An Income Statement shows your revenues, expenses and profit for a particular period. If you are developing these projections prior to starting your business, this is where you will want to do the bulk of your forecasting.
- **Cash Flow Projection:** A Cash Flow Projection will demonstrate to a loan officer or investor that you are a good credit risk and can pay back a loan if it's granted.
- **Balance Sheet:** This overview will present a picture of your business' net worth at a particular time.

The key sections of an income statement are:

- **Revenue** – This is the money you will earn from whatever goods or services you provide.
- **Expenses** – Be sure to account for all of the expenses you will encounter, including **Direct Costs** (i.e. materials, equipment rentals, employee wages, your salary, etc.) and **General and Administrative Costs**(i.e. accounting and legal fees, advertising, bank charges, insurance, office rent, telecommunications, etc.).
- **Total Income** – Your revenue minus your expenses, before income taxes.
- **Income Taxes**
- **Net Income** – Your total income without income taxes.

The three sections of a Cash Flow Projection are:

- **Cash Revenues** – This is an overview of your estimated sales for a given time period. Be sure that you only account for cash sales you will collect and not credit.
- **Cash Disbursements** – Look through your ledger and list all of the cash expenditures that you expect to pay that month.
- **Reconciliation of Cash Revenues to Cash Disbursements** – This one is pretty easy: you just take the amount of cash disbursements and subtract it from your total cash revenue. If you have a balance from the previous month, you'll want to carry this amount over and add it to your cash revenue total.

Balance Sheet:

- **Assets** – These are the tangible objects of financial value owned by your company.
- **Liabilities** – These are any debts your business owes to a creditor.
- **Equity** – The net difference between your organization's total liabilities minus its total assets.

What is 'Net Present Value - NPV'

Net Present Value (NPV) is the difference between the present value of cash inflows and the present value of cash outflows. NPV is used in capital budgeting to analyze the profitability of a projected investment or project

When cash flows are uneven

- ▶ The formula for the net present value can be written as follows:

$$\text{NPV} = \left[\frac{C_1}{(1+k)} + \frac{C_2}{(1+k)^2} + \frac{C_3}{(1+k)^3} + \dots + \frac{C_n}{(1+k)^n} \right] - C_0$$

$$\text{NPV} = \sum_{t=1}^n \frac{C_t}{(1+k)^t} - C_0$$

Where as

$C_1, C_2 \dots C_n$ represents net cash inflow for year 1, 2 ... n

K is the opportunity cost of capital

C_0 is the initial investment

n is the expected life of investment

Determining the value of a project is challenging because there are different ways to measure the value of future cash flows. Because of the time value of money (TVM), money in the present is worth more than the same amount in the future. This is both because of earnings that could potentially be made using the money during the intervening time and because of inflation. In other words, a dollar earned in the future won't be worth as much as one earned in the present.

Net Present Value(NPV) Method:

- *NPV is a method of ranking investment proposals.*

Net present value is the difference between the present value of cash inflows and the present value of cash outflows that occur as a result of undertaking an investment project.

NPV may be positive, zero or negative.

- **Positive NPV:**

If present value of cash inflows is greater than the present value of the cash outflows, the net present value is said to be positive and the investment proposal is considered to be acceptable.

- **Zero NPV:**

If present value of cash inflow is equal to present value of cash outflow, the net present value is said to be zero and the investment proposal is considered to be acceptable.

Advantages of NPV

- NPV method, is a direct measure of the contribution.
- It increases the wealth of the share holders as it gives you money.
- The investment will increase the firm's value
- Considers all the cash flows
- Considers the time value of money
- Considers the risk of future cash flows
- Provides better forecast

Internal Rate of Return

The internal rate of return (IRR) on a project is the rate of return at which the project's NPV equals zero. At this point, a project's cash flows are equal to the project's costs. Similar to how management must establish a maximum payback period, management must also set what is known as a "hurdle rate", the minimum rate of return a company will accept for a project.

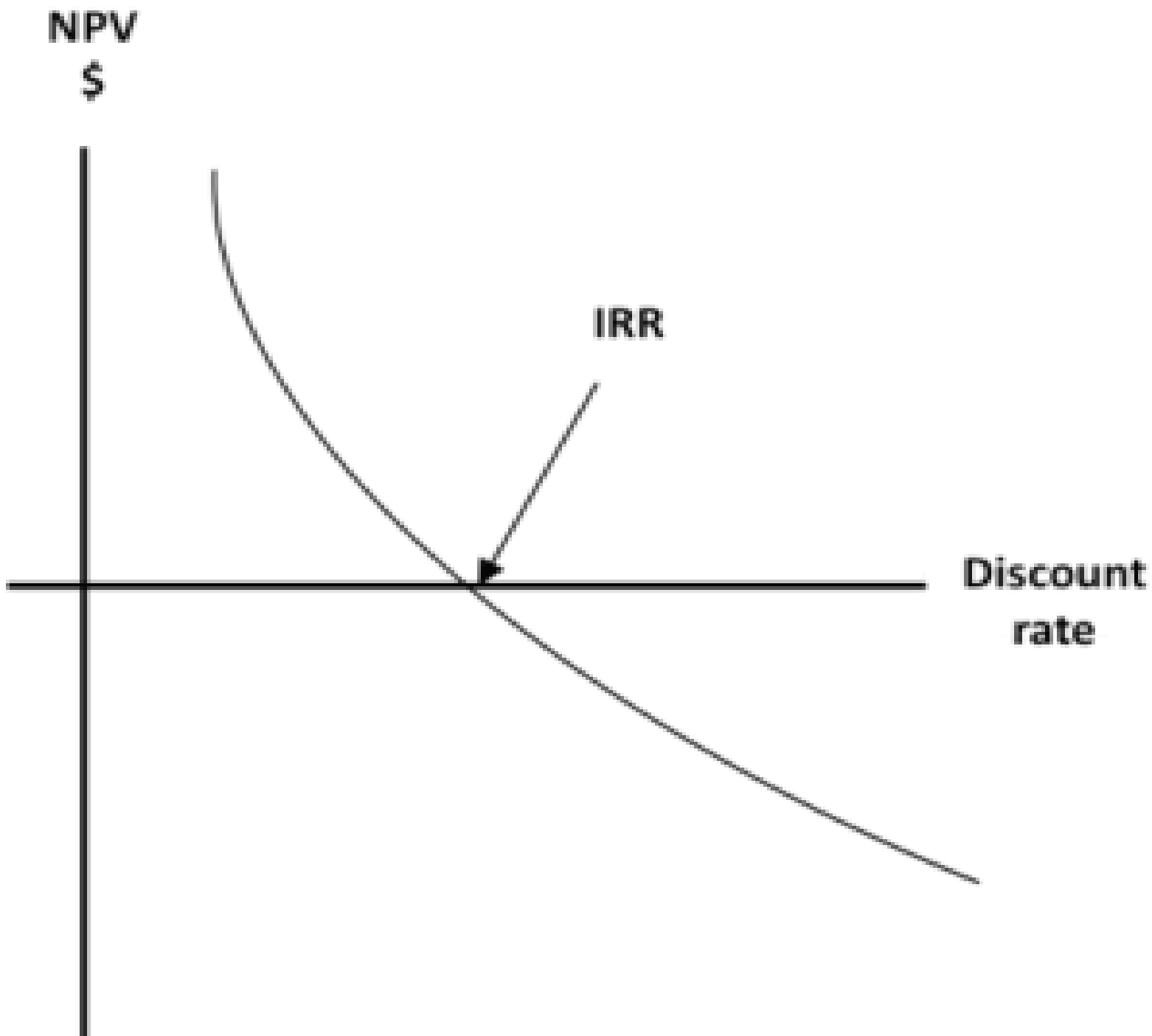
$$\text{IRR} = r_a + \frac{\text{NPV}_a}{\text{NPV}_a - \text{NPV}_b} (r_b - r_a)$$

r_a = lower discount rate chosen

r_b = higher discount rate chosen

N_a = NPV at r_a

N_b = NPV at r_b





NPV Vs. IRR

- NPV and IRR will generally give us the same decision
- Exceptions
 - Non-conventional cash flows – cash flow signs change more than once
 - Mutually exclusive projects
 - Initial investments are substantially different
 - Timing of cash flows is substantially different

Conflicts Between NPV and IRR



- NPV directly measures the increase in value to the firm
- Whenever there is a conflict between NPV and another decision rule, you should ***always*** use NPV
- IRR is unreliable in the following situations
 - Non-conventional cash flows
 - Mutually exclusive projects

Advantages of IRR

- IRR is indicating a rate of return of a project.
- IRR is sometimes referred to as "economic rate of return (ERR)".
- IRR method, it shows the return on the original money invested.
- No need to calculate the cost of capital.
- Tell weather an investment increase the firm value
- It calculates Break-even.
- IRR calculates an alternative cost of capital including an appropriate risk premium



Innovation



“There is a way to do it better - find it”

-Thomas Edison