Working capital

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- Working capital is the difference between the company's current assets and its current liabilities.
- Working capital management is a business tool that helps companies effectively make use of current assets and maintain sufficient cash flow to meet short-term goals and obligations.
- By effectively managing working capital, companies can free up cash that would otherwise be trapped on their balance sheets.
- Positive working capital means the company can pay its bills and invest to spur business growth.
- Working capital is not free. It must be financed with long-term debt and equity.

- **Working Capital = Current Assets - Current Liabilities**

- Current Assets are cash and other assets that are expected to be converted to cash within the year.
  - Cash
  - Marketable securities
  - Accounts receivable
  - Inventory
- Current Liabilities are obligations that are expected to require cash payment within the year.
  - Accounts payable
  - Accrued wages
  - Taxes

- Working capital is required to…
  - operate the business
  - serve the customers
  - deal with some variation in the timing of cash flows

- Working capital is a basic measure of both a company's efficiency and its short-term financial health
  - Too much: may indicate inefficient use of resources, low return
  - Not enough: may indicate potential cash flow problems, high risk
- Working capital analysis considers the…
  - Magnitude of each component
  - Timing of the cash flows (permanent and temporary)

The Standard Balance Sheet

TOTAL ASSETS	LIABILITIES AND SHAREHOLDERS' EQUITY
Cash	**Short-term debt**
Current assets *Accounts receivable plus Inventories plus Prepaid expenses*	**Current liabilities** *Accounts payable plus Accrued expenses*
Net fixed assets	***Long-term debt plus Shareholders' equity***

- **Assets = Liabilities + Shareholders' Equity**
- **Cash= Long-term debt + Equity + Current liabilities**
  - Current assets other than cash - Fixed assets

Issues on working capital

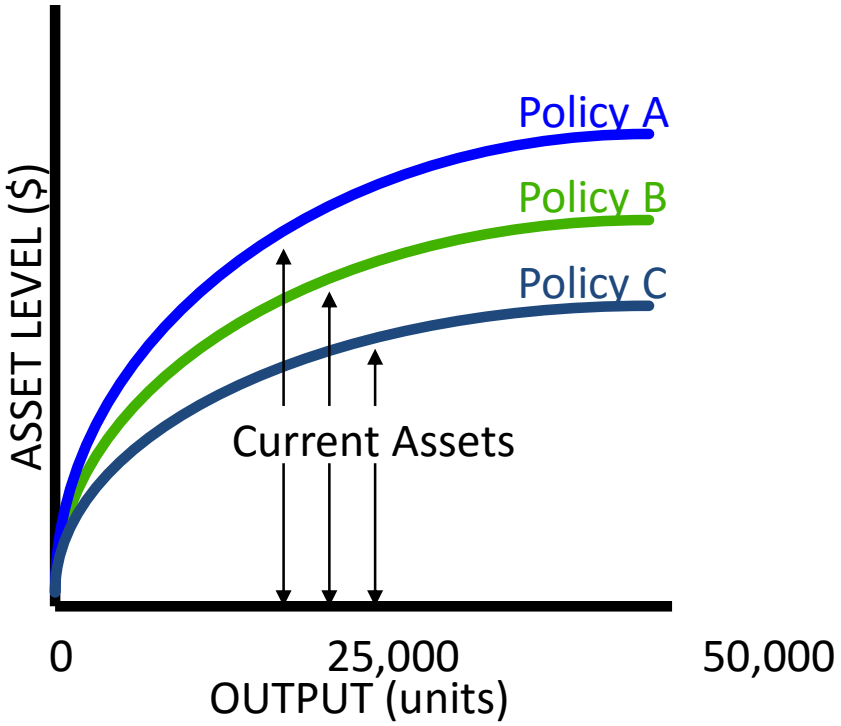
- Let assume that
  - Three different policies for current asset levels are possible
  - 50,000 maximum units of production
  - Continuous production

- Impact on liquidity
  - Greater current asset levels generate more liquidity; all other factors held constant.

- Impact on profitability

$$\text{Return on Investment} = \frac{\text{Net Profit}}{\text{Total Assets}}$$

$$= \frac{\text{Net Profit}}{\text{Current} + \text{Fixed Assets}}$$



- Impact on risk
  - Decreasing cash reduces the firm's ability to meet its financial obligations. More risk!
  - Stricter credit policies reduce receivables and possibly lose sales and customers. More risk!
  - Lower inventory levels increase stock-outs (out of inventory) and lost sales. More risk

- Summary

Policy	Liquidity	Profitability	Risk
A	High	Low	Low
B	Average	Average	Average
C	Low	High	High

- Profitability varies inversely with liquidity.
- Profitability moves together with risk.

Working capital management

- Working capital management is about setting working capital policy and carrying out that policy in day-to-day operations.
- Assets and liabilities must be matched and coordinated in order to keep costs to a minimum and to control risks.

- The basic working capital decisions include in day-to-day operations the following areas:
  1. manage collections from customers and disbursement to suppliers, employees, taxes
  2. bank and credit relations
  3. liquidity management – determinate expected cash surplus or deficit
  4. receivables management – firm´s credit policy, collection procedures
  5. inventory management – investments in inventory and financing

- In order to reduce working capital requirements
  - Collect payment as quickly as possible
  - Keep stock levels as low as possible
  - Delay paying suppliers as long as possible

- **Firm Value and Working Capital**
  - Any reduction in working capital requirements generates a positive free cash flow that the firm can distribute immediately to shareholders.
    - Thus, efficiently managing working capital will maximize firm value.

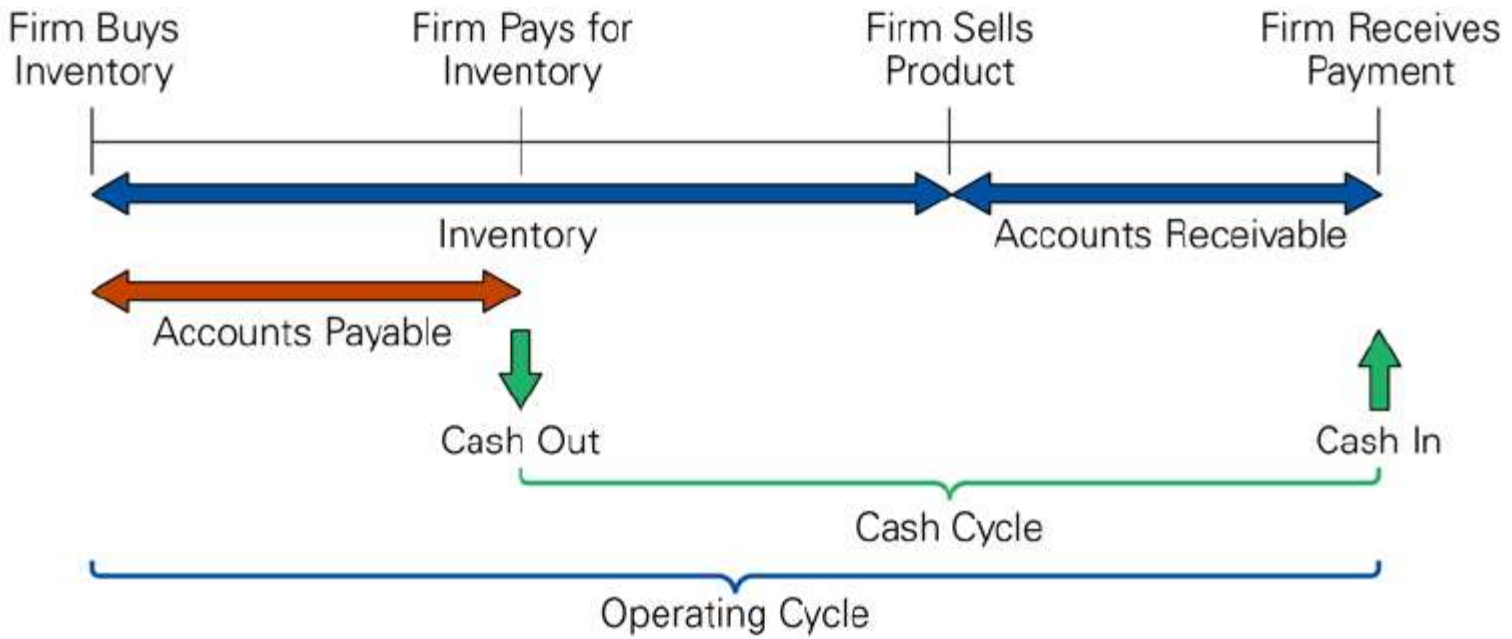
Positive vs. Negative Working Capital

- A company has positive working capital if it has enough cash, accounts receivable and other liquid assets to cover its short-term obligations, such as accounts payable and short-term debt.

- In contrast, a company has negative working capital if it doesn't have enough current assets to cover its short-term financial obligations.
- A company with negative working capital may have trouble paying suppliers and creditors and difficulty raising funds to drive business growth. If the situation continues, it may eventually be forced to shut down.

The Cash and Operating Cycle for a Firm

- Firms hold cash to:
  - Meet their unexpected expenses
  - Acquire assets on short notice
  - Maintain some compensating balances required by banks, *etc*.
- The aim of working capital management is to minimize the cash conversion cycle.



Cash-to-Cash Cycle

- The terms Cash Conversion Cycle and Cash-to-Cash Cycle are used interchangeably
- Cash conversion cycle= **(Inventory days + Account Receivables Days) – Accounts Payable Days**

- Focuses on account receivables, account payables, and inventory
- It is the amount of time (in days) that a company takes to sell inventory, collect receivables and pay accounts payable
- The combined cycle indicates how much cash is tied up in the company's operations (procurement, production, sales, etc.)

Inventory Days

- Inventory Days = Average Inventory/One day Cost of Goods Sold (COGS)
  = Average Inventory/(COGS/365)
  - A financial measure indicating how long it takes a company to turn its inventory (including raw materials, WIP, and finished goods) into sales
  - Inventory is recorded at cost, so COGS is used
  - It is the inverse of Inventory Turnover (e.g. Inventory Days of 91 days is the same as Inventory Turnover of 4)
  - In general, lower Inventory Days is better, provided the company is not missing out on sales due to lack of inventory

Accounts Payable Days

- Accounts Payable Days = Average Accounts Payable/One day Cost of Goods Sold (COGS) = Average Accounts Payable/(COGS/365)
  - A financial measure indicating how long a company is takes to pay its suppliers
  - Accounts Payables are recorded at cost of the materials, so COGS is used
  - In general, higher Accounts Payable Days is better, provided the company is not damaging supplier relationships or performance by delaying payment

Accounts Receivable Days

- Accounts Receivable Days = Average Accounts Receivable/One Day Sales = Average Accounts Receivable/(Sales/365)
  - A financial measure indicating how long a company takes to collect the cash after making a sale
  - Accounts Receivable are credit sales to customers, so Total (credit) Sales is used
    - Note that if the business uses cash, then one should separate out credit sales because cash sales are not 'outstanding'
  - In general, lower Accounts Receivable Days is better, provided the company is not missing out on sales due to lack of customer credit

- Operating Cycle
  - The average length of time between when a firm originally purchases its inventory and when it receives the cash back from selling its product
  - Most firms buy their inventory on credit, which reduces the amount of time between the cash investment and the receipt of cash from that investment.

Working Capital Trade-off

- Working capital trade-off is an art to find the level of current assets that minimizes the sum of *Carrying Costs* and *Shortage Costs.*
- It is the trade off in terms of profitability and risks.
- Carrying Costs:
  - Costs of maintaining Current Assets; including opportinity cost of capital.
  - Investment in cash and receıvables may cause an interest loss and
  - Investment in ınventory has opportinity cost of capital; storage and insurance costs
- *Carrying Costs encourage firm to hold current assets to a mınımum*

- Shortage Costs:
  - Costs incurred from shortages in Current Assets
  - Shortage in cash may incur unnecassary transaction costs of selling marketable securities and
  - Shortage in receıvables may cause to lose customers because of credit sales' restrictions
  - Shortage in ınventory may have shut down production and unable to to fill orders promptly
- Shortage Costs encourage firm to hold current assets to a maximum.

Sources and uses of cash

- **Assets = Liabilities + Shareholders' Equity**
- **Cash= Long-term debt + Equity + Current liabilities**

  - Current assets other than cash - Fixed asset

- An increase in long-term debt and or equity leads to an increase in cash—as does a decrease in fixed assets or a decrease in the non-cash components of net working capital.

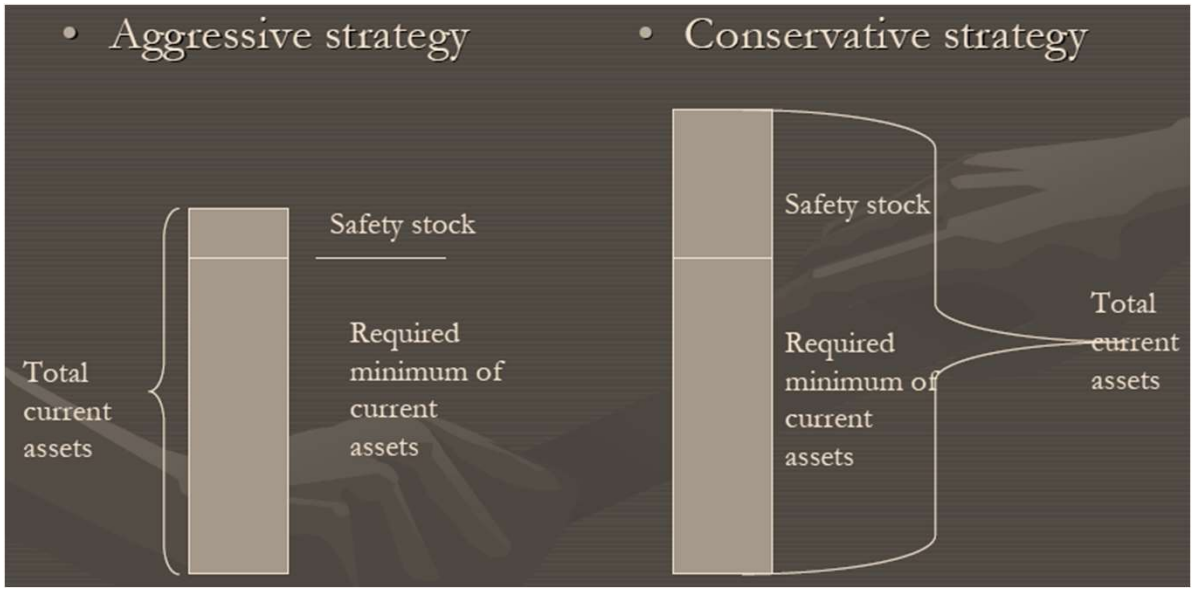
- The sources and uses of cash follow from this reasoning.
  - **Sources of Cash**
    - Long term financing
    - Share capital
    - Preferred share
    - Long term bond
    - Reserve and surplus
    - FDI
  - Uses of Cash
    - Working Capital
    - Fixed Assets
    - Fees

Importance of Working Capital

- The firm´s well-being shows up first in its working capital accounts and the flow of cash.
- Working capital management must ensure that a firm can meet its short-term maturity obligations.
- Working capital requirements are an investment
  - Firm finances accounts receivables and inventory
- An important job of the financial manager is to strike a balance between the costs and benefits of current assets.
- Manager has to find the level of current assets investment that minimizes the sum of carrying costs and shortage costs.

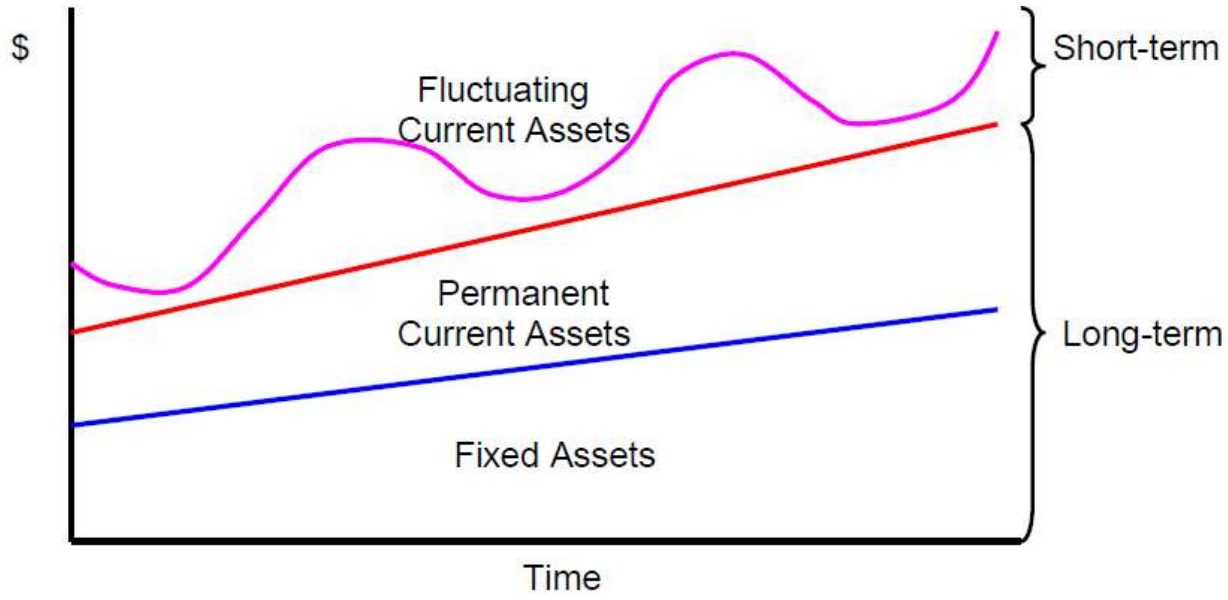
Working Capital Strategy – in terms of volume

- A conservative working capital strategy maintains working capital more than the optimum requirement. This implies higher safety (lower risk) and lower rate of return for the firm.
- There is a theoretical optimum for working capital (Moderate strategy)
- An aggressive working capital strategy maintains working capital less than the optimum requirement. This implies lower safety (higher risk) and the rate of return that depends upon the degree of reduction in sales.



Working Capital Strategy – in terms of financing

- A company that is growing over time, its assets can be decomposed into three categories
  - fixed assets
  - permanent current assets
  - fluctuating current assets



- Matching principle:
  - Permanent assets (fixed assets + permanent current assets) financed with long-term sources of financing.
  - Fluctuating assets financed with short-term sources of financing.
  - The idea is to match the cash flow generating characterises with the maturity of the financing.
- Working capital strategy
  - Conservative: Use permanent capital for permanent assets and temporary assets.
  - Moderate: Match the maturity of the assets with the maturity of the financing.
  - Aggressive: Use short-term financing to finance permanent assets.

Inventory Management

- Inventory management is about the control of investments in inventories. Because excessive inventory uses cash, efficient management of inventory increases firm value.
- Common major determinants of inventory level:
  - level of sales
  - length and technical nature of production process
  - durability, perishability
- Examples:
  - Large inventories: machinery , precious metals
  - Seasonal: agriculture, canning
  - Low: oil and gas production, baking

- There are broadly three costs associated with the merchant's inventory holding.
    1. Holding (or carrying) costs: An increase in order size increases the carrying cost. They include the costs of maintaining economic value and opportunity costs.
    2. Ordering costs: This cost does not depend on quantity ordered. E.g., Cost to prepare a purchase requisition, cost to prepare a purchase order, cost of the labour required to inspect goods when they are received etc.
    3. Shortage costs (stock-out costs): the loss due to losing a specific sale, customers goodwill, or future business. Shortage costs fall with increases in order size.
- The role of the inventory manager is to balance the costs and benefits associated with inventory.

- Effective inventory management requires turning over inventory as quickly as possible without losing sales from inventory stock-outs (return versus risk).
- The approaches to inventory management:
  - EOQ (Economic Order Quantity)approach: technique for determining the optimal order size, i.e. order size that minimizes total order costs and carrying cost
  - The ABC system
  - Just-in-Time system
  - Computerized systems for resource control