

Financial Policy

Cash Management and Working Capital Policy

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Course Outline

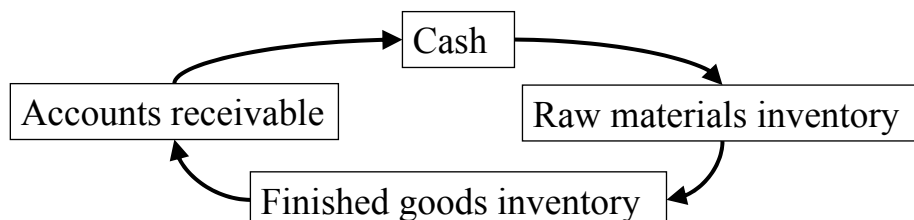
- **Introduction**
 - ◆ Lecture 1: Financial Management and the Business Environment
 - Readings: Brealey & Myers (B&M) Chap1, Chap2.
 - ◆ Lecture 2: Time Value of Money
 - Readings: B&M Chap3
- **Investment Decisions**
 - ◆ Lecture 3: Investment Appraisal Methods (+ *Quiz* 1)
 - Readings: B&M Ch5
 - ◆ **Lecture 4: Net Working Capital and Cash Flow Management**
 - Readings: B&M Ch30, 31.
 - ◆ Lecture 5: Financial Forecasting and Budgeting
 - Readings: B&M Ch6, 19.2, 29.
 - ◆ **Week 6 Midterm Exam (1h30)**
- **Financing Decisions**
 - ◆ Lecture 6: The Value of Bonds and Common Stocks
 - Readings: B&M Ch4.
 - ◆ Lecture 7: Internal Funds, Equity Financing and Dividend Policy
 - Readings: B&M Ch14, 15, 16.
 - ◆ Lecture 8 and 9: Capital Structure and the Cost of Financing (+ *Quiz* 2)
 - Readings: B&M Ch9, 10.1, 19.
 - ◆ Lecture 10: Overall Recap
 - ◆ **Week 11 Final Exam (3h)**

Class Outline

- The Working Capital Cycle
- The Cash-Conversion Cycle
- The Dynamics of Working Capital
- The Cash Management Model
- Exercise

The Working Capital Cycle

- Let's imagine a very simple business: a company buys raw materials for cash, processes them into finished goods and then sells these goods on credit to its customers
- How does it work?



The Working Capital Cycle

- (Net) working capital
 - ◆ Financial resources (i.e. the **capital**) required to make **work** the business
 - ◆ N.W.C. = **current assets** less **current liabilities**

- **Current assets**
 - ◆ **Accounts receivable**
 - ◆ **Inventory**

- **Current Liabilities**
 - ◆ **Short-term loans**
 - ◆ **Accounts payable**
 - ◆ **Accrued income taxes**
 - ◆ **Current payment on long-term debt**

The Working Capital Cycle

- (Net) working capital
 - ◆ Financial Resources or Financial Surplus

- **Current assets**
 - ◆ **Accounts receivable**
 - ◆ **Inventory**

- **Current Liabilities**
 - ◆ **Short-term loans**
 - ◆ **Accounts payable**
 - ◆ **Accrued income taxes**
 - ◆ **Current payment on long-term debt**

**Financial Resources
Required**

The Working Capital Cycle

- (Net) working capital

- ◆ Financial Resources or Financial Surplus

- **Current assets**

- ◆ Accounts receivable
- ◆ Inventory

**Cash Surplus
Generated**

- **Current Liabilities**

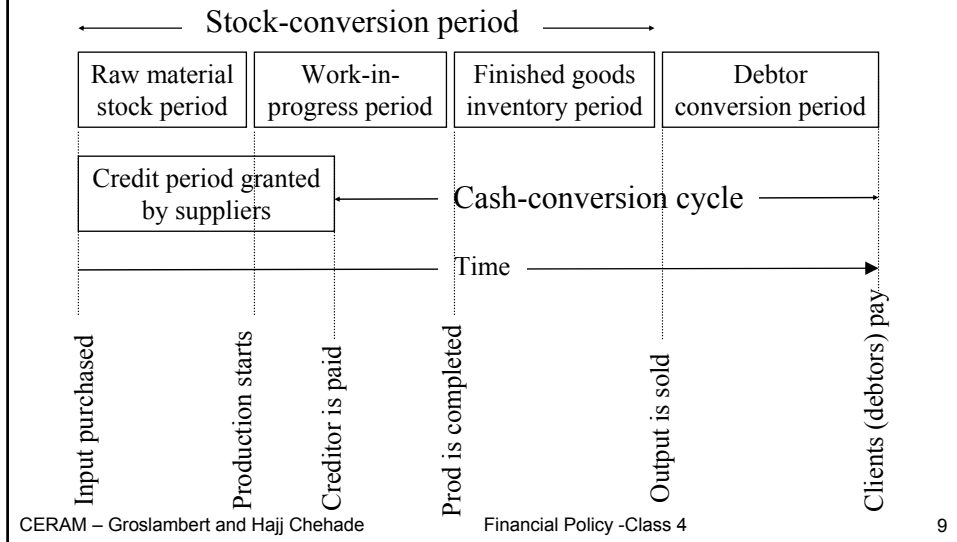
- ◆ Short-term loans
- ◆ Accounts payable
- ◆ Accrued income taxes
- ◆ Current payment on long-term debt

The Cash Conversion Cycle

- The cash conversion cycle is the **length of time** between

- ◆ the initial cash outflow when the firm pays for the acquisition of raw materials
- ◆ and the inflow of cash from the sale of goods when the clients (debtor) pays
- ◆ It is the length of time a € is locked up in current assets.

The Cash Conversion Cycle



The Cash Conversion Cycle

$$\text{Cash-conversion cycle} = \text{Stock-conversion period} + \text{Debtor-conversion period} - \text{Credit period granted by suppliers}$$

The Cash Conversion Cycle

- **Calculation of cash-conversion cycle in days**
 - ◆ + Raw materials stock period =
 - av. value of R.M. stock / av. purchase of R.M. per day (p.d.)
 - ◆ + Work-in-progress period =
 - av. value of work-in-progress / av. cost of goods sold p.d.
 - ◆ + Finished goods inventory period =
 - av. value of finished goods in stock / av. cost of goods sold p.d.
 - ◆ + Debtor-conversion period =
 - av. value of debtors / av. value of sales p.d.
 - ◆ - Credit period granted by suppliers =
 - av. level of creditors / purchases on credit p.d.

The Cash Conversion Cycle

- **Calculation of cash conversion cycle: example**
 - ◆ You are given the following **end-of-year** data for XYZ Ltd. Compute its cash-conversion cycle.

	1999	2000
	(in € mns)	(in € mns)
Raw materials inventory	10	12
Creditors	5	7
Work-in-progress inventory	4	4
Finished goods inventory	4	6
Debtors	20	26
Sales	110	126
Raw material purchases (annual)	70	80
Cost of goods sold (annual)	85	100

The Cash Conversion Cycle

- Why is the cash-conversion cycle so important?
 - ◆ Too much working capital entails **liquidity risk**
 - ◆ The shorter this cycle, the fewer resources the company needs to lock-up
- How to reduce this cycle?
 - ◆ Reduce debtor levels
 - ◆ Decrease inventory levels
 - ◆ Increase creditor levels
- Where is the limit?

Dynamics of Working Capital

- XYZ's annual sales are €10,000,000
- Working capital periods are (in months)
 - ◆ Stock conversion period¹ 2 months
 - ◆ Debtor conversion period 1.5 month
 - ◆ Creditor period 1 month
- Input costs are 60% of sales
- What is the (average) working capital investment?

¹: Raw material + work-in-progress + finished goods periods

Dynamics of Working Capital

- Now, what if sales rise by 50%?
 - ◆ Let's consider 3 different W.C. period estimates
- | | 1 st est. | 2 nd est. | 3 rd est. |
|--------------------------|----------------------|----------------------|----------------------|
| | = | ↑ | ↓ |
| Stock conversion period | 2 | 3 | 1.5 |
| Debtor conversion period | 1.5 | 2 | 1 |
| Creditor period | 1 | 1.5 | 0.5 |
- What are the new working capital investments?

Dynamics of Working Capital

- An increase in sales is likely to increase the working capital needs
- => the firm must find new financial means to finance its growth
- Otherwise it could go bankrupt

Cash Management Model

- Why is cash important?
 - ◆ Transaction motive
 - To act as a buffer when daily cash flows do not match cash out flows
 - ◆ Precautionary motive
 - As a safety stock to face errors in forecasts
 - ◆ Speculative motive
 - To be able to react immediately when unexpected opportunities can be taken

Cash Management Model

- Cost of not holding cash
 - ◆ Difficulties to pay debtors, possibly bankrupt
 - ◆ Opportunities missed
 - ◆ Loss of discounts from suppliers
 - ◆ Temporary borrowing => higher financial cost
 - ◆ More frequent payments to replenish the cash balances (i.e. sell securities more frequently)

Cash Management Model

- Cost of holding cash
 - ◆ Loss of interest
 - ◆ Loss of purchasing power, inflation erodes the value of cash

Exercise

- The manufacturing process of XYZ Ltd is
 - ◆ Direct-material costs are 30% of sales (before tax)
 - ◆ Supply costs are 10% of sales (before tax)
 - ◆ Direct-labor costs are 40% of sales (before tax)
 - ◆ Manufacturing period is 6 days
 - ◆ Stock conversion period
 - Raw materials 30 days
 - Finished goods 10 days

Exercise

- The manufacturing process of XYZ Ltd is (cont'd)
 - ◆ Credit on sale is 30 days
 - ◆ All wages are paid on a monthly basis
 - ◆ Raw materials suppliers are paid at 30-days, end-of-month, the 10th.
 - ◆ Other suppliers are paid end-of-month
 - ◆ The VAT rate is 7% and is due on the 15th of each month
- Assuming materials are incorporated at the very early of the manufacturing cycle, compute the net working capital (both **in % of sales** and **in number of days of sales**)