soleadea

LEVEL 1: EQUITY INVESTMENTS

Reading 33 (1st out of 6): MARKET ORGANIZATION

Difficulty: **easy**

Benchmark Study Time: **3h**

2022

THIS E-BOOK:

- is a selective summary of the corresponding Reading in your CFA® Program Curriculum,
- provides place for your own notes,
- helps you structure your study and revision time!

How to use this e-book to maximize your knowledge retention:

1. **Print** the e-book in duplex and bind it to keep all important info for this Reading **in one place.**
2. **Read** this e-book, best twice, to grasp the idea of what this Reading is about.
3. **Study** the Reading from your curriculum. **Here add** your notes, examples, formulas, definitions, etc.
4. **Review** the Reading using this e-book, e.g. write your summary of key concepts or revise the formulas at the end of this e-book (if applicable).
5. **Done?** Go to your study plan and change the Reading's status to **green**:
   (it will make your Chance-to-Pass-Score™ grow ☺).
6. **Come back** to this e-book from time to time to **regularly review for knowledge retention!**

NOTE: While studying or reviewing this Reading, you can use the tables at the end of this e-book and mark your study/review sessions to hold yourself accountable.

FUNCTIONS OF THE FINANCIAL SYSTEM

Financial system

The financial system consists of:

- financial markets, and
- financial intermediaries.

A financial market is a place where:

- capital is moved from entities that hold too much capital to entities suffering from its shortage,
- risk and real assets are transferred.

Processes in the financial system

Processes in the financial system:

- saving,
- borrowing,
- raising equity capital by businesses,
- managing risk,
- exchanging assets for immediate delivery,
- trading on information.

Saving

saving = refraining from consumption

The purpose of saving money is to:

- use it in the future,
- store it and use it in case of unexpected events.

Instruments used to save money include:

- certificates of deposit,
- stocks,
- bonds,
- mutual funds.

HERE KNOWLEDGE RETENTION HAPPENS | WRITE: notes, examples, formulas, definitions, relations, etc.

Borrowing

Ways of borrowing:

- loans,
- mortgages,
- credit cards,
- bonds,
- lines of credit.

Raising equity capital

When a company plans to carry out a project and doesn't have sufficient funds, it can raise money by selling ownership interests.

Raising equity capital cannot take place without:

- financial institutions, e.g. investment banks,
- analysts.

Managing risk

risk management = a process designed to reduce all potential negative consequences of risk

Types of risk:

- default risk,
- liquidity risk,
- currency risk,
- interest rates risk.

Exchanging assets for immediate delivery

The financial system allows asset exchange.

Information-motivated trading

The financial system also enables information-motivated trading.

Information-motivated trading is about making investment decisions based on the information available to a trader.

Information-motivated trading vs Traditional investing

- Traders focused on information seek to make a profit on trade based on forecasts concerning future prices.
- Ordinary investors want to move wealth from the present to the future.

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Functions of the financial system

Functions of the financial system:

- enabling the processes,
- determining rates of return,
- facilitating capital allocation efficiency.

One of the functions of the financial system is to determine the equilibrium interest rate.

equilibrium interest rate = the interest rate for which the aggregate supply of funds is the same as the aggregate demand for funds

Capital allocation efficiency

- Capital is allocated efficiently if only the best projects get financing.
- Capital providers take care of efficiency because they are afraid of losing money.

Well-functioning financial system

Financial markets that make up a financial system are complete markets if:

- the movement of money from the present to the future isn't hindered in any way, and rates of return that can be earned as compensation for risk should reflect its level.
- businesses have access to capital allowing them to grow.
- hedgers are able to trade in overseas markets to hedge against risk.
- market participants are free to trade one class of assets for another.

A well-functioning financial system is characterized by:

- complete markets (participants can easily solve their financial problems),
- operationally efficient markets (all information on assets is reflected in their prices),
- informationally efficient markets (costs of trading i.e. commissions, bid-ask spread, and order price impact are low).

Complete markets and operationally efficient markets could not exist without intermediaries that:

- match entities with excess capital with those that are in need of capital,
- provide liquidity by taking the other side of orders,
- create financial instruments by securitizing assets,
- take deposits and extend loans to entities in need of capital,
- make the transfer of risk possible,
- provide investment advisory services,
- run clearing houses and depositories.

A financial system serves its functions well if several criteria are met:

- It needs a strong financial market where a variety of assets is traded.
- Its financial markets need to be liquid and offer low transaction costs.
- Detailed information should be disclosed about the issuers of securities traded in markets.
- The fundamental values of securities and changes in them should be reflected in the prices of securities.

HERE KNOWLEDGE RETENTION HAPPENS | WRITE: notes, examples, formulas, definitions, relations, etc.

ASSETS AND MARKETS CLASSIFICATIONS

Assets classification

Assets classification:

- securities,
- currencies,
- contracts,
- commodities.

Securities

Securities include:

- equities,
- debt instruments (fixed-income securities),
- shares in pooled investment vehicles.

equities = instruments certifying that the holder owns a specified share in the issuing entity

debt instruments = instruments certifying that the holder extended a loan to the issuer

shares in pooled investment vehicles = shares in investment portfolios managed by professionals

Equities

Common shares

Equities are instruments representing ownership rights in companies.

Ownership rights of a common shareholder:

- depend on the number of shares she holds,
- give many privileges such as:
  - right to dividend,
  - residual right to the company's assets,
  - right to elect representatives in the board of directors.

Preferred shares

Preferred shareholders enjoy additional rights as compared to common shareholders.

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Fixed-income securities

Fixed-income security has a specified schedule for the repayment of the principal and interest.

Types of payment schedules:

- fixed interest,
- variable interest depending on e.g. LIBOR, inflation rate, etc.

Fixed-income instruments:

- bonds,
- Treasury bills (issued by governments),
- commercial paper (issued by companies),
- certificates of deposit (issued by banks).

Fixed-income instruments that mature within less than a year (notes):

- Treasury bills,
- commercial paper,
- certificates of deposit.

Fixed-income instruments maturing within more than a year (bonds):

- short-term instruments,
- intermediate-term instruments,
- long-term instruments.

Bonds can be issued by:

- state governments,
- local authorities, or
- companies.

Convertible bonds can be converted into the company's shares.

HERE KNOWLEDGE RETENTION HAPPENS | WRITE: notes, examples, formulas, definitions, relations, etc.

Pooled investment vehicles

Pooled investment vehicles are institutions that engage in the accumulation and investment of funds deposited by investors.

Pooled investment vehicles include:

- mutual funds,
- trusts,
- depositories,
- hedge funds.

Investing through pooled investment vehicles:

- is based on trust in the fund's managers,
- enhances the portfolio diversification.

Open-end fund vs Closed-end fund

- Open-end funds issue their shares at every request of their customers.
- Closed-end funds shares cannot be purchased on demand from the institution, but only in the primary or secondary market.

Exchange traded fund (ETF)

ETF:

- tracks an index,
- is a type of an open-ended fund,
- is passively managed.

Hedge funds:

- use leverage,
- are allowed to invest in derivatives,
- can take both long and short positions,
- operate as limited partnerships and are managed by their general partners,
- are addressed to affluent investors.

HERE KNOWLEDGE RETENTION HAPPENS | WRITE: notes, examples, formulas, definitions, relations, etc.

Currencies

Currencies:

- only national monetary authorities are empowered to issue currencies,
- the most commonly traded currencies are the US dollar and the euro.

reserve currency = a currency that is commonly accepted for the purposes of international transactions

The primary reserve currencies are:

- the U.S. dollar,
- the euro.

The secondary reserve currencies are:

- the British pound,
- the Japanese yen,
- the Swiss franc.

Contracts

contract = **derivative** = agreement under which the buyer undertakes to purchase specified goods in the future and the seller promises to sell them to the buyer

Derivatives include:

- futures,
- forwards,
- options,
- swaps.

Forward contracts

Forward contracts:

- consist in the delivery of certain goods in the future from one party to another,
- are not traded on exchanges,
- are not standardized.

HERE KNOWLEDGE RETENTION HAPPENS | WRITE: notes, examples, formulas, definitions, relations, etc.

Futures contracts

Futures contracts:

- consist in the purchase or sale of assets in the future,
- are traded on exchanges,
- are standardized.

Deposits:

- the initial margin,
- the maintenance margin,
- the variation margin.

Swap contracts

swap contract = the exchange of periodic payments between two parties

Swap periodic payments depend on different factors:

- interest rates,
- currencies exchange rates,
- prices of commodities,
- returns on stock indices.

Option contracts

option writer = the seller of an option

option holder = the purchaser of an option

option = the right of the option holder

option premium = the price of the right

call option = the option that gives its holder a **right to buy** an underlying asset in the future

put option = the option that gives its holder a **right to sell** an underlying asset in the future

option exercise = the act of buying or selling the underlying asset

HERE KNOWLEDGE RETENTION HAPPENS | WRITE: notes, examples, formulas, definitions, relations, etc.

The holder of a call option will decide to exercise the option if the exercise price is lower than the market price of the underlying asset at the time of the exercise.

The holder of a put option will decide to exercise the option if the exercise price is greater than the market price of the underlying asset at the time of the exercise.

Types of options:

- a European-style option (can be exercised only at expiration date),
- an American-style option (can be exercised anytime before the expiration date or at expiration date).

Commodities

Commodities include:

- precious metals (e.g. gold, silver),
- agricultural produce (e.g. wheat, maize),
- energy products,
- industrial metals (e.g. copper).

Public securities

Public securities are:

- traded in the public market,
- listed on exchanges,
- liquid.

Markets categories

Markets categories:

- primary market and secondary market,
- money markets and capital markets,
- spot markets and futures markets,
- traditional investment markets and alternative investment markets.

Primary market vs Secondary market

In the **primary market**, financial instruments are sold by their issuers.

In the **secondary market**, transactions are made between entities that are not usually the issuers of the traded instruments.

HERE KNOWLEDGE RETENTION HAPPENS | WRITE: notes, examples, formulas, definitions, relations, etc.

Money markets vs Capital markets

In **money markets**, financial instruments with maturities of one year or less are traded.

In **capital markets**, financial instruments with maturities over one year are traded.

Spot markets vs Futures markets

Spot markets – where instruments for immediate delivery are traded

Futures markets – where instruments for future delivery are traded

Traditional investment markets vs Alternative investment markets

Examples of traditional investments include:

- publicly traded debts,
- publicly traded equities,
- shares in pooled investment vehicles.

Alternative investments include:

- hedge funds,
- private equities,
- commodities,
- real estate.

HERE KNOWLEDGE RETENTION HAPPENS | WRITE: notes, examples, formulas, definitions, relations, etc.

FINANCIAL INTERMEDIARIES

Definition

financial intermediary = an institution which acts as a link between an entity that has a surplus of capital and an entity that lacks it

Types of financial intermediaries

Types of financial intermediaries:

- brokers,
- dealers,
- stock exchanges,
- investment banks,
- commercial banks,
- insurance companies,
- arbitrageurs,
- settlement and custodial services.

Brokers

Brokers:

- are intermediaries that purchase and sell financial instruments on their clients' account,
- don't enter into any transactions with their clients.

Block brokers – support large traders carrying out very large transactions

Dealers

Dealers:

- fill orders by trading with their clients,
- act on their own account,
- provide liquidity in the market.

Exchanges

exchange = a place where investors make trades

HERE KNOWLEDGE RETENTION HAPPENS | WRITE: notes, examples, formulas, definitions, relations, etc.

Investment banks

Investment banks:

- provide consultancy services,
- help their clients with issuing shares and bonds,
- advise on mergers and acquisitions.

Depository institutions

Examples of depository institutions:

- commercial banks,
- savings and loan banks.

Insurance companies

insurance companies = conclude insurance contracts with their clients

In exchange for a regular premium, insurance companies provide risk transfer through an obligation to pay the sum insured in case of an event specified in the contract (e.g. fire, theft, natural disaster).

Arbitrageurs

arbitrageur = an investor that makes a profit by buying a financial instrument in one market at a price which is lower than the sale price of the same instrument in another market

Clearinghouse

A clearinghouse:

- settles transactions,
- helps eliminate counterparty risk.

Depositories and custodians

Because depositories and custodians hold their clients' securities, the risk of loss of securities is minimized.

HERE KNOWLEDGE RETENTION HAPPENS | WRITE: notes, examples, formulas, definitions, relations, etc.

INVESTORS' POSITIONS AND ORDERS

Long position vs Short position

An investor can take:

- a long position,
- a short position.

long position = financial instrument is purchased

If the price of the financial instrument increases → profit for the long position

short position = financial instrument is sold

If the price of the financial instrument decreases → profit for the short position

Short side vs Long side

In the case of futures, forward and option contracts, we distinguish between a short side and a long side.

In the case of futures and forward contracts:

- the future delivery of the underlying asset will be **made to the long side** of the contract,
- **the short side delivers** the underlying asset at settlement.

In the case of option contracts:

- the long side (the holder) is the one **entitled to exercise** the option,
- the short side (the writer) is **obliged to meet** the obligation under the contract.

Short selling

The algorithm of short selling:

1. An investor borrows a security from another entity,
2. The investor sells it in the market,
3. After some time, the investor repurchases the security in the market and returns it to the lender of the security.

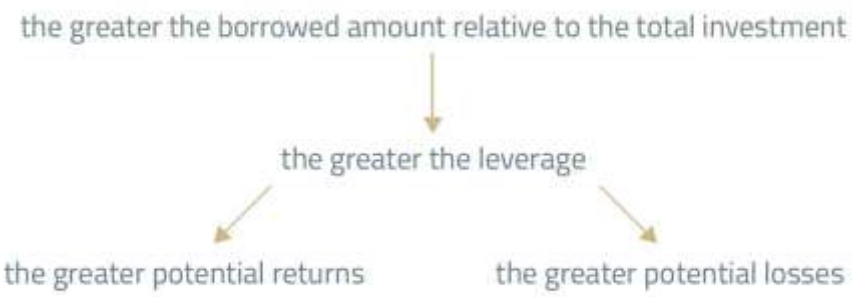
owners of securities = **long holders** = investors that lend the securities they hold to short sellers

HERE KNOWLEDGE RETENTION HAPPENS | WRITE: notes, examples, formulas, definitions, relations, etc.

Potential gain vs Potential loss

Since financial instruments can't have a negative value, the maximum potential profit on short positions is 100%.

Because the price of financial instruments can go up indefinitely, potential losses are unbounded.



Leveraged positions

margin loan = money borrowed from a broker to finance a purchase of financial instruments

call money rate = interest rate on a margin loan

initial margin requirement = the minimum portion of the investment that the buyer must contribute

equity investment = the amount of money provided by the investor alone

Leverage ratio

$$\text{leverage ratio (LR)} = \frac{\text{investor's total position}}{\text{equity investment}}$$

Stock leveraged return (no interest & no transaction costs)

$$R = \left(\frac{P_1 + D_1}{P_0} - 1 \right) \times LR$$

Where:

- R – leveraged return,
- P_1 – price at the end of the holding period,
- D_1 – dividend at the end of the holding period,
- P_0 – price at the beginning of the holding period,
- LR – leverage ratio.

HERE KNOWLEDGE RETENTION HAPPENS | WRITE: notes, examples, formulas, definitions, relations, etc.

Stock leveraged return (with interest & transaction costs)

$$R = \frac{n \times (P_1 + D_1) - n \times (1 - M) \times P_0 \times (1 + i) - C_1}{n \times M \times P_0 + C_0} - 1$$

Where:

- R – leveraged return,
- P_1 – price at the end of the holding period,
- D_1 – dividend at the end of the holding period,
- P_0 – price at the beginning of the holding period,
- n – number of stocks bought,
- M – margin (in percentage points),
- $n \times (1 - M) \times P_0$ – borrowed money, aka. margin loan,
- i – interest on the amount borrowed (in percentage points), aka. call money rate,
- $n \times M \times P_0$ – equity invested,
- C_0 – commission on the purchase of stocks,
- C_1 – commission on the sale of stocks,

Orders

Types of orders:

- bid order (buy order),
- ask order (offer order, sell order).

the best bid = the one with the highest price

the best ask = the one with the lowest price

bid-ask spread = bid-offer spread = the best bid - the best offer

HERE KNOWLEDGE RETENTION HAPPENS | WRITE: notes, examples, formulas, definitions, relations, etc.

Categories of instructions included in orders:

- execution instructions,
- validity instructions,
- clearing instructions.

Execution instructions

Execution instructions include information on how an order should be filled.

Types of execution instructions:

- market orders,
- limit orders.

market order = an order that is filled immediately at the best price offered on the other side of the book (doesn't include a price)

limit order = an order that includes a price (limit)

A bid order includes the maximum price.

An ask order includes the minimum price.

Additional conditions

- **All-or-nothing orders** are filled in full or rejected immediately.
- **Hidden orders** are only disclosed to brokers and exchanges, but not to investors.
- **Iceberg orders** show only a part of the order while the other part remains hidden.

Bid orders buy at the lowest ask prices first.

Ask orders sell at the highest bid prices first.

Validity instructions

Validity instructions specify when an order may be filled.

- A **day order** is valid until the end of the trading day on which it was submitted.
- A **good-till-cancelled order** is valid indefinitely (however brokers usually set a time limit for these orders in case an investor forgets about them).
- An **immediate-or-cancel (fill or kill) order** is canceled if it can't be filled immediately.
- A **good-on-close order** can only be filled at the end of the day's trading.

HERE KNOWLEDGE RETENTION HAPPENS | WRITE: notes, examples, formulas, definitions, relations, etc.

Stop-loss orders

A stop-loss order becomes valid only when the price reaches a specified level.

Clearing instructions

Clearing instructions indicate who should carry out the final settlement of orders.

Types of markets

Types of markets

- quote-driven markets,
- order-driven markets,
- brokered markets.

Quote-driven market

A quote-driven market:

- is used for instruments such as currencies or bonds,
- one party to a transaction is a dealer that quotes purchase and sale prices,
- the dealer usually operates on behalf of a financial institution.

Order-driven market

In order-driven markets, trades are executed based on orders submitted by customers or dealers, with the orders specifying the price at which they're willing to buy or sell securities.

Rules in order-driven markets

Categories of rules for arranging and executing transactions in order-driven markets:

- order matching rules,
- trade pricing rules.

Order matching rules:

- Buy orders with the highest limit are matched with sell orders with the lowest limit.
- If the limit price of a buy order is higher than the limit price of a sell order, a transaction is made and the volume of the transaction is the same as the volume of the smaller of the two orders.

HERE KNOWLEDGE RETENTION HAPPENS | WRITE: notes, examples, formulas, definitions, relations, etc.

Order precedence hierarchy:

- **price priority rule** = the first orders to be filled are the highest-priced buy orders and the lowest-priced sell orders
- **secondary precedence rule** = if two buy orders or two sell orders with the same limit price are placed, the one placed earlier will be filled first

Trade pricing rules:

- Prices are set at a level that ensures the maximum possible volume of all trades.
- In continuous trading markets, trade prices are set based on the **discriminatory pricing rule**.

discriminatory pricing rule = trade price is the price of the order that was placed first

Brokered markets

Brokers are responsible for finding buyers and sellers to take the opposite sides of a trade in a brokered market.

Market regulations

For a financial market to function properly, regulators must be in place to ensure that regulations are observed by all participants. There are two types of such regulators:

- government agencies, and
- practitioner organizations.

Regulators are supposed not only to make sure that law is obeyed but also to engage in the educational activity. This is important because when market participants are uneducated, they commit more offenses.

Investors often make investment decisions based on advice from agents such as financial advisers and investment managers. However, it's difficult for an inexperienced investor to properly judge the quality of their services, which often leads to abuse. To reduce the risk of abuse, regulators introduce standards of competence for agents. Those standards are the minimum requirements that should be met for an agent to operate in the market.

Regulators also ensure that market participants observe the rules that govern the minimum level of capital to be kept by financial institutions through investments. The capital is necessary for firms to be able to meet their obligations towards market participants at any time.

HERE KNOWLEDGE RETENTION HAPPENS | WRITE: notes, examples, formulas, definitions, relations, etc.

Summarizing key concepts:

☐ Functions of the financial system

My summary:

☐ Assets and markets classifications

My summary:

☐ Financial intermediaries

My summary:

☐ Investors' positions and orders

My summary:

☐ Market regulation

My summary:

Reviewing formulas Leverage ratio

$$\text{leverage ratio (LR)} = \frac{\text{investor's total position}}{\text{equity investment}}$$

Write down the formula:

Stock leveraged return (no interest & no transaction costs)

$$R = \left(\frac{P_1 + D_1}{P_0} - 1\right) \times LR$$

Write down the formula:

Stock leveraged return (with interest & transaction costs)

$$R = \frac{n \times (P_1 + D_1) - n \times (1 - M) \times P_0 \times (1 + i) - C_1}{n \times M \times P_0 + C_0} - 1$$

Write down the formula:

Keeping myself accountable:

TABLE 1 | STUDY

When you sit down to study, you may want to **try the Pomodoro Technique** to handle your study sessions: study for 25 minutes, then take a 5-minute break. Repeat this 25+5 study-break sequence all throughout your daily study session.

✓ Tick off as you proceed.

POMODORO TIMETABLE: study-break sequences (25' + 5')													
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TABLE 2 | REVIEW

Never ever neglect revision! Though it's not the most popular thing among CFA candidates, regular revision is what makes the difference. If you want to pass your exam, **schedule & do your review sessions.**

REVIEW TIMETABLE: When did I review this Reading?													
date		date		date		date		date		date		date	
date		date		date		date		date		date		date	