EFS06: Lecture Summary

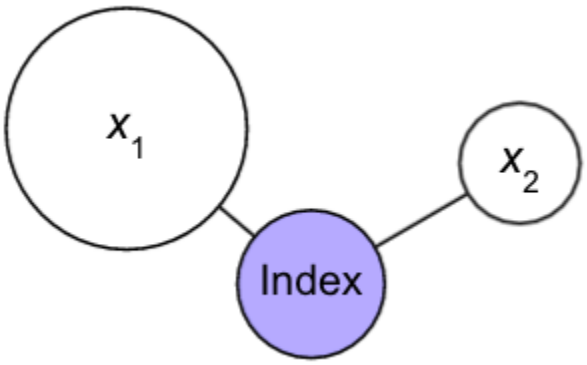
Capitalization Weighted Indices

Overview:

- A capitalization-weighted index is a type of capital market index where the constituents of the index are included with respect to their total market capitalization.
- Popular Indices that are cap-weighted: SENSEX, NIFTY, S&P 500, NASDAQ-100, FTSE-100, Hang Seng Index.
- Components are weighted according to the total market value of their outstanding shares.
- An illustration of an index is shown below:

Stock	Price	Shares	Value
x_1	$100	50,000	$5M
x_2	$25	100,000	$2.5M

- Total Market Value = $7.5M
- *Divisor* = 7500
- Index @ start = 1000



Influencing factors to capitalization-weighted index:

- Scenario-1: Corporate Action: Stock Split

Initial Status:

Stock	Price	Shares	Value

x_1	$100	50,000	$5M
x_2	$25	100,000	$2.5M

- Total Market Value = $7.5M
- *Divisor* = 7500
- Index = 1000

Corporate Action: 2-for-1 split for x_1 ⇒ for every 1 share of x_1, there are 2 shares of x_1

Stock	Price	Shares	Value
x_1	$50	100, 000	$5M
x_2	$25	100,000	$2.5M

- Total Market Value = $7.5M
- *Divisor* = 7500
- Index = 1000

- Scenario-2: Corporate Action: Dividend

Initial Status:

Stock	Price	Shares	Value
x_1	$100	50,000	$5M
x_2	$25	100,000	$2.5M

- Total Market Value = $7.5M
- *Divisor* = 7500, Index = 1000

Corporate Action: Dividend - $2 per 1 share of x_1

Stock	Price	Shares	Value
x_1	$98	50, 000	$4.9M
x_2	$25	100,000	$2.5M

- Total Market Value = $7.4M
- Index = 1000
- *Divisor* = 7400

- Scenario-3: Index Change

Initial Status:

Stock	Price	Shares	Value
x_1	$100	50,000	$5M
x_2	$25	100,000	$2.5M

- Total Market Value = $7.5M
- *Divisor* = 7500
- Index = 1000

Corporate Action: x_2 goes out of the index and x_3 enters the index. The new entrant x_3 has a share price of $50 and 200,000 outstanding shares.

Stock	Price	Shares	Value
x_1	$100	50,000	$5M
x_3	$50	200, 000	$10M

- Total Market Value = $15M
- Index = 1000
- *New Divisor* = 15000

- Major Corporate Actions
  - Merger / Demerger/ Amalgamation
  - Change in shares outstanding
  - Stock split
  - Spin-off
  - Change in IWF
  - Ordinary Dividends, Special Dividends
  - Bonus
  - Rights

Collective Investment Vehicles

Collective investment vehicles can be classified as open and closed funds.

- Open-end funds / Mutual funds: Some of the attributes and functioning of it is as follows:
  - Perpetual IPO - Issue and redeem ownership shares throughout the life of the fund
  - The number of units outstanding is open-ended

- No secondary market trading
- Assets grow or reduce based on subscriptions and redemptions
- Assets are valued once a day, at closing prices and NAV is determined

- Closed-end funds: Some of the attributes and functioning of it is as follows:
  - Initial public offer and then subscriptions stop
  - The number of units outstanding is fixed
  - Trading in the secondary market - It is the only way to buy additional units
  - No formal relationship between the price of shares and NAV of the fund

Issues with the Mutual Fund:

- The investor doesn't know the price of the mutual fund at the time of investment.
- There were scandals in the past where few customers were allowed to do transactions after the transaction window.
- The transaction request from one investor may incur the cost which will get divided amongst all existing investors.
- The portfolio manager is forced to make transactions to make the portfolio tax efficient. It directly impacts the long term investors.

Exchange-Traded-Fund(ETF)

An exchange-traded fund (ETF) is a type of security that trails an index, sector, commodity, or another asset, but which can be traded on a stock exchange the same as a regular stock. An ETF can be structured to follow anything from the price of an individual stock to a large and diverse set of securities.

The primary market- ETFs

- ETFs are created through the interactions of participants in the primary market. Primary market participants include:
  - ETF sponsors (fund managers)
  - Authorized Participants(institutional investors, Market Makers) authorised to create and redeem ETFs
- By design, retail investors are not involved in the primary market.
- ETF values its funds on a real-time basis and provides the indicative NAV (iNAV) to all its investors.
- Role of AP's (Authorized Participants)
  - Hold ETF shares
  - Sell ETF shares to their client
  - Sell ETF shares to other investors on an exchange

    - AP's typically act as market makers and supply liquidity in the secondary market where ETF shares are traded
- Creation and Redemption of ETFs
    - For Creation, buy price is used and for redemption sell price is used:
    - Buy_Price_one_lot_etf = Sum (No_of_units * Price_per_unit) + Transaction_Cost + Cash_Component
    - Sell_Price_one_lot_etf = Sum (No_of_units * Price_per_unit) - Transaction_Cost + Cash_Component
    - Price_of_one_lot_etf = Price_of_one_unit_etf * lot_size_of_etf

ETFs solve the major issues of the Mutual Fund model:

- The transaction cost will be borne by the investor for his own ETF units only
- No need to make the portfolio tax-efficient:
- ETF manager is indifferent to whether the portfolio goes up or down, as long as the fund tracks the index
- No active churn in the portfolio
- Portfolio changes only when the index component changes or because of corporate actions
- Index change attributed churn is minimal. For example, changes in the NIFTY constituents are on average of 4 per year

In Summary, ETFs have the following advantages over MFs:

- Minimal and relevant costs
- Diversification within a market segment
- Trading flexibility
- Relative predictability of tracking a market
- Liquidity
- Transparency in the process

ETFs in Secondary Market:

- The prices of the constituents typically reflect the approximate value of the ETF at any given point in the day
- The major influencing factors of the ETF price are:
    - The share-price movement of the underlying securities
    - Currency exchange-rate movements (for international investments)
    - Demand for the ETF

Trading models used for ETFs:

- Asset allocation model: It refers to the diversification of the portfolio and minimizing the risk using asset allocation.
- Order book Model for Market Makers: The order book Model is a trade execution model that matches orders from buyers and sellers based on a set of rules.