

# 共同基金概论

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## • PE/EPS

- Price/Earning (P/E) Ratio
  - A valuation ratio of a company's current share price compared to its per-share earnings.
  - For example, if a company is currently trading at \$43 a share and earnings over the last 12 months were \$1.95 per share, the P/E ratio for the stock would be 22.05 (\$43/\$1.95).
- EPS
  - EPS(每股盈余)=盈余/总股本，传统的每股收益指标计算公式为：每股收益=期末净利润÷期末总股本。

## • 参与者的功能（托管行功能）

- 托管行是指负责保管、持有基金管理公司等投资机构从客户处募集到的资金，并对基金管理人使用这笔资金进行监管和对外披露信息的机构，通常由商业银行来担当。
- who are players?
  - Individual
  - Mutual Fund Company
  - InvestmentManager 投资管理人、投资顾问
  - Broker
  - Custodian Bank 托管人
  - Shareholder Service
  - 基金董事
    - 董事要确保基金的服务提供机构特别是管理公司为基金持有人的最大利益尽职尽责。
  - 基金管理公司
    - 管理公司一般都要提供或者监督全部核心的服务
  - 第三方服务提供商
    - 因法规（如托管、审计），或者规模经济的考虑，管理公司将一些服务转包给外部服务商。

## • 资本市场/外汇市场/货币市场特征

- 资本市场
  - 又称长期资金市场，是以期限在1年以上的金融工具为媒介进行长期性资金交易活动的市场。
  - 狭义的资本市场则专指发行和流通股票、债券、基金等证券的市场，统称证券市场。
  - 特点
    - 交易期限较长。少则一年，长则数十年。
    - 交易目的主要为解决长期资本需求。
    - 资金借贷量大。
    - 市场交易工具特殊。具有一定的风险性和投机性
- 货币市场
  - 是指以期限在1年以内的金融工具为媒介进行短期资金融通的市场。
  - 从交易对象的角度看，货币市场主要由同业拆借、票据、国库券以及回购协议等子市场组成。
  - 特点
    - 交易期限短，一般在3~6个月
    - 交易的主要目的是解决短期资金周转的需要。
    - 流动性强。

- 风险相对较低。

- 外汇市场

- 指的是以外国货币表示的，为各国普遍接受的，可用于国际间债权债务结算的各种支付手段。
- 特点
  - 可支付性(必须以外国货币表示的资产)
  - 可获得性(必须是在国外能够得到补偿的债权)
  - 可换性(必须是可以自由兑换为其他支付手段的外币资产)

- 衍生品/原生产品

- Derivatives 衍生品

- Financial contract which derives its value from the performance of another entity such as an asset, called the "underlying". ( 其价值取决于一种或多种基础资产或指数 )

- 种类

- Forward Contracts ( 远期 )

- 远期合约和期货合约都是交易双方约定在未来某一特定时间、以某一特定价格、买卖某一特定数量和质量资产的交易形式。

- Future Contracts ( 期货 )

- Future contract is a STANDARDIZED agreement with an organized exchange to buy or sell a currency pair at a fixed price at a certain date in the future.
- The contract is exchangeable and thus more liquid.

- Option Contracts ( 期权 )

- A contract for future delivery of a specific currency in exchange for another, in which the holder of the option has the right to buy (or sell) the currency at an agreed price, the strike price, or exercise price, but is not required to do so.
- 期权交易是买卖权利的交易。期权合约规定了在某一特定时间、以某一特定价格买卖某一特定种类、数量、质量原生资产的权利。买卖不是必需的。
- The right to buy is call, the right to sell is a put

- SWAP ( 互换 )

- Is a financial contract between two parties exchanging or swapping a stream of interest payments for notional principal amount on multiple occasions during a specified period.
- 掉期合约是当事人之间签订的在未来某一期间内相互交换他们认为具有相等经济价值的现金流 ( Cash Flow ) 的合约。

- Features :

- Zero-Sum Game
- High leverage ( 高杠杆 )

- Participants of Derivatives

- Hedgers 对冲者

- - is an investment position intended to offset potential losses/gains that may be incurred by a companion investment
- 对冲者采用衍生产品合约来减少自身面临的由于市场变化而产生的风险。

- Speculators 投机者

- to capture market movements with an intention to make profits
- 投机者利用这些产品对今后市场变量的走向下赌注。

- Arbitragers 套利者

- is the practice of taking advantage of a price difference between two or more markets
- 套利者采用两个或更多相互抵消的交易来锁定盈利。
- underlying原生产品
  - The most common underlying assets include Securities, Commodity, index, interest rate, or Currency
- broker/dealer
  - Broker, 中文翻译为经纪人或经纪商, 它是通过为客户提供经纪服务来赚取交易佣金的方式获利的。它本身是不参与到交易中的, 仅仅起到一个中介的作用(代客交易), 它是不具有所买卖财产的所有权的。
  - 而Dealer, 我们把它叫做坐市商或做市商, 它的获利方式是用自有资金来买入证券, 然后再以更高的价格卖给投资者, 来赚取买卖价差。它会参与到整个交易过程中, 是完全拥有所买卖的财产的所有权的。
- order和价格
  - limit risks
    - >Basket (篮子)
    - >Stop (触发指令)
      - A Stop order becomes a market order to buy or sell securities (证券) or commodities (大宗商品) once the specified stop price is attained or penetrated (穿透) .
      - A Sell Stop order is always placed below the current market price. It is typically used to limit a loss or protect a profit on a long stock position.
      - A Buy Stop order is always placed above the current market price. It is typically used to limit a loss or protect a profit on a short sale.
    - >Stop Limit(触发限价指令)
      - A Stop Limit order becomes a limit order once the specified stop price is attained or penetrated.
      - 你设定2个价格stop price和limit price, 当达到stop price的时候, 这时候这个stop limit order 就成为了一个limit order, 接下来的行为和limit order一样了.
      - 比如你15买入一只股票, 股票在下跌途中, 你想在10刀止损, 但是不想股票跌到10刀就马上止损, 因为股票下跌过程中也是波动的, 如果跌到10刀马上反弹了呢, 止损止在最低点怎么办? 你可以设定stop price, 比如9.5刀, 只有跌穿9.5刀后, 然后才执行limit order.
      - A STOP-LIMIT order eliminates the risk of a stop order where the investor is not guaranteed an execution price, but exposes the investor to the risk that the order may never be filled even though the stop price has been reached. The investor could "miss the market" in the security or commodity altogether.
  - Speed of Execution
    - >Market(市价指令)
      - A market order is an order to buy or sell an asset at the bid or offer price currently available in the marketplace.
    - >Market If Touched (触价指令)
      - An MIT (market-if-touched) is an order to buy (or sell) an asset below (or above) the market. This order is held in the system until the trigger price is touched, and is then submitted as a market order.
      - An MIT order is similar to a stop order, except that an MIT sell order is placed above

the current market price, and a stop sell order is placed below.

- 触价指令是指市场价格只要触及客户所规定的价格水平时就生效的指令。也就是说，一旦市场价格到达了客户所事先设定的价格，这份指令就成为市价指令，这时经纪人就可以争取以最佳的价格为客户达成交易。
- >Market On Open
  - A market order executed at the market's open at the market price.
- >Market On Close
  - A market order executed at the market's close at the market price.
- >Pegged to Market (挂钩市场)
  - An order that is pegged to buy on the best offer and sell on the best bid.
- >VWAP (交易量加权均价)
  - The VWAP for a stock is calculated by adding the dollars traded for every transaction in that stock ("price" x "number of shares traded") and dividing the total shares traded. A VWAP is computed from the open of the market to the market close, and is calculated by volume weighting all transactions during this time period.
- Price Improvement
  - >Limit (限价指令)
    - A limit order is an order to buy or sell a contract at a specified price or better.
  - >Limit If Touched (触发限价指令)
    - An LIT (limit-if-touched) is an order to buy (or sell) an asset below (or above) the market, at the defined limit price or better. This order is held in the system until the trigger price is touched, and is then submitted as a limit order. An LIT order is similar to a stop limit order, except that an LIT sell order is placed above the current market price, and a stop limit sell order is placed below.
- Discretion自由裁量权
  - >Discretionary(全权委托)
    - Discretionary Order is a limit order for which you define a discretionary amount (which is added to or subtracted from the limit price) that increases the price range over which the order is eligible to execute. The original limit price is displayed to the market.
    - 全权委托定单是一种限价定单，您对其定义一个任意的金额（将被添加到限价中或从限价中扣减），该金额会增大定单能够执行的价格范围。最初的限价被显示给市场。
  - >Hidden (隐藏指令)
    - Hidden order (generally a large volume order) shows no evidence of its existence in either the market data or the deep book
  - >Iceberg(冰山指令)
    - Iceberg order allows you to submit an order (generally a large volume order) while publicly disclosing only a portion of the submitted order.
- Market Timing
  - >All or None (全或无指令)
    - An AON (all or none) order will remain at the exchange (or in the IB system) until the entire quantity is available to be executed.
    - 使用全或无（AON）属性的定单，只有当整个数量在特定的价格或更好价格可用时才将被执行。定单将保持活动直到：整个数量在特定的价格（或更好）可用。或者定单被取消。

- > Fill or Kill ( 全数执行或立刻取消指令 )
- A FOK(Fill or Kill) order must execute as a complete order as soon as it become savailable on the market, otherwise the order is canceled.
- 将有效时间设置为全数执行或立刻取消 ( FOK ) , 规定整个定单必须立刻执行或者被取消。
- > GTD ( 到期/到时前有效指令 )
  - A GTD(Good-till-Date)order valid until the date specified.
  - GTD ( 到期/到时前有效 ) 有效时间让指定一个到期日期和时间 , 直到这之前定单都将继续工作。设定该属性需要选定到期前有效 ( GTD ) 作为有效时间 , 在到期日期区域中输入一个日期 , 并在到期时间区域中输入一个时间 ( 如果需要该水平的细节 ) 。注意 , 如果只输入了到期前有效的日期 , 未执行的定单将在指定日的市场收盘时取消。
- > GTC ( 取消前有效指令 )
  - A GTC(Good-till-Canceled) order is an order to buy or sell a security at a specific or limit price that lasts until the order is completed or cancelled. A GTC order will not be filled until the limit has been reached, no matter how manydays or weeks it takes.
  - 一种使用取消前有效 ( GTC ) 作为有效时间的定单 , 将继续工作直到定单执行或被取消。
- > IOC ( 立刻执行或取消指令 )
  - An IOC (Immediate or Canceled) order requires that all or part of the order be executed as soon as it is brought to the market, whereby the portion not executed is automatically canceled.
  - 应用于定单的立刻执行或取消 ( IOC ) 有效时间命令定单任何未立刻执行的部分将被取消。

## • 债券Bonds价格/利率关系

- A bond is an interest bearing promise to pay a specified sum of money on a specific date. It is also described as a contractual obligation ( 义务 ) of the borrower to make payments of interest and repayment of principal on borrowed funds.
- Features of Bonds
  - Interestrate (coupon rate)
    - -The interest rate on a bond security The issuer promises to pay the owner until maturity. It is expressed as Fixed, Variable/Floating, or ZeroCoupon.
  - Dateddate (or issue date)
    - - Thedate a bond is issued. The first interest payment is calculated from the dateddate to first income date.
  - Maturity
    - - Thematurity date is the date upon which the principal of a security becomes dueand payable to the security holder.
  - ParAmount
    - -Facevalue of the bond (security) as given on the certificate or instrumentmultiplied by the number of bonds held, in dollars.
  - Coupon
    - - abonds coupon or coupon rate is the interest you receive each year.
  - ParValue
    - - knownas face value is the amount the bond issuer agrees to pay at maturity. bonds often trade above or below par. Buyingbelow par is a discount, above par is premium
  - Yield
    - -effective rate of interest paid on a bond, calculated by the coupon ratedivided by the

bond's market price. Furthermore, for any investment, yield is the annual rate of return expressed as a percentage

- Yield to Maturity

- -The rate of return anticipated on a bond if it is held until the maturity date. YTM is considered a long term bond yield expressed as an annual rate.

- 利率上升，证券价格下降

- 股票概念

- 股票是一种有价证券，是股份公司在筹集资本时向出资人发行的股份凭证，

- Common Stock

- Security representing (partial) ownership of a company' s assets, generally with the right to participate in dividends and in most cases to vote on major matters affecting stockholder interests.

- Variants of Common Stock

- Class 'A' Ordinary Shares

- Class 'B' Shares

- -A classification of common stock that may be accompanied by more or fewer voting rights than Class A shares. Although Class A shares are often thought to carry more voting rights than Class B shares

- Preferred Stock

- Described as equity ownership of a corporation' s shares where the owners are entitled to regular fixed dividend before a dividend can be paid to common stock holders.

- “优先”是相对于普通股而言。优先首先体现在公司资产破产清算的受偿顺序方面（索偿权），排在债权之后，比普通股优先；其次在股利分配顺序方面较普通股优先，通常按事先约好的股息率发放。优先股通常在股东大会上无表决权。

- Variants of Preferred Stock

- Cumulative Preferred Stock

- Redeemable Preferred Stock

- Participating Preferred Stock

- Convertible Preferred Stock

- Prior/Ranked Preferred Stock

- How Stocks trade

- Primary Market

- -The primary market is where securities ( 证券 ) are created (by means of an IPO)

- Secondary Market

- -Investors trade previously-issued securities without the involvement of the issuing-companies. The secondary market is what people are referring to when they talk about "the stock market."

- 投资者在没有发行公司参与的情况下交易先前发行的证券

- Exchanges

- -NYSE, AMEX (纽约证券交易所，美国证券交易所)

- Over the Counter

- -NASDAQ (National Association of Securities Dealers Automated Quotation )

## • 权证/期权 ( ? )

- 期权与权证都是一种选择权。在支付一定的权利金后，给予持有者按照合约内容，在规定的期间内或特定的到期日，按约定价格买入或卖出标的资产的权利。是持有者一种权利（但没有义务）的证明。
- 差别
  - 发行主体不同。
    - 期权没有发行人，每一位市场参与人在有足够保证金的前提下都可以是期权的卖方。期权交易是不同投资者之间的交易。当投资者买入某公司的认购期权时，卖出期权的是普通投资者。
    - 而权证通常是由标的证券上市公司、投资银行（证券公司）或大股东等第三方发行的。交易双方为股票权证的发行人与持有人。
  - 交易方式不同，
    - 期权交易比权证更灵活。投资者可以买入或卖出认购期权，也可以买入或者卖出认沽期权。
    - 但对于权证，普通投资者只能买入权证，只有发行人才可以卖出权证收取权利金。当然投资者也可以在二级市场交易手中已有的权证。
  - 合约特点不同，
    - 期权合约中的行权价格、标的物 and 到期时间等都是由市场统一规定好的，
    - 而权证合约中的行权价格、标的物、到期时间等都是由发行者决定的。
  - 合约供给量不同。
    - 期权在理论上供给无限，不断交易就不断产生。
    - 而权证的供给有限，由发行人确定。
  - 行权后效果不同。
    - 认购期权或认沽期权的行权，仅是标的证券在不同投资者之间的相互转移，不影响上市公司的实际流通总股本数；
    - 对于上市公司发行的股本权证，当投资者对持有的认购权证行权时，发行人必须按照约定的股份数增发新的股票，从而导致公司的实际流通总股本数增加。

## • 基金行业结构，作用和功能

- 为什么要买基金？
  - 专业化管理 (Professional Management)
    - 银行信托部门和私人投资咨询公司为单个投资者提供专业化的管理服务为时已久，但是享有这些服务的最低资产门槛很高，而这正是单个投资者负担不起的。
    - 共同基金公司聘有专业基金经理人及研究团队从事市场研究，只要花少许的基金管理费就可享受到专家的服务，可以说是小额投资人的最佳福音。
  - 成本低 (Cost effective)
    - 规模经济
  - 分散投资风险 (Diversification)
    - “不要把所有鸡蛋放在一个篮子里”
    - 共同基金的资产较一般投资人来得庞大，故足以将资金分散於不同的股票、甚至不同的投资工具中，以达到真正的风险分散，而不致因一支错误的选股而产生重大的亏损
  - 流动性 (Liquidity)
    - 共同基金能确保每一位持有人在任何时候，变现其所持有的基金份额。
  - 便捷性 (Easy)
    - 共同基金易于买卖，这种买卖既可直接通过基金家族进行，也可通过经纪人等中介机构办理。
    - 共同基金为不同投资偏好的投资者提供了广泛的选择。
  - 安全性 (Safety)

- -监管规范
- -共同基金采取资金的保管与经营分开的原则
- 分类
  - 按规模是否固定分为
    - 开放式
      - 投资者可以随时向基金管理人或其代理销售机构申购或赎回,因而规模可变的投资基金。
    - 封闭式
      - 指基金规模在发行完毕后和规定的期限内,基金规模固定不变的投资基金。
  - 差异：
    - -存续期限不同
      - 封闭式基金有明确的存续期限
      - 开放式基金无明确存续期限
    - -规模可变性不同
      - 封闭式基金虽然特殊情况下可进行扩募,但扩募应具备严格的法定条件。因此,在正常情况下,基金规模是固定不变的。
      - 而开放式基金所发行的基金份额是可赎回的,而且投资者在基金的存续期间内也可随意申购基金份额,导致基金的资金总额每日均不断地变化。换言之,它始终处于"开放"的状态。这是封闭式基金与开放式基金的根本差别。
    - -交易方式不同
      - 封闭式基金发起设立时,投资者可以向基金管理人或销售机构认购;当封闭式基金上市交易时,投资者又可在证券交易所按市价买卖。
      - 而投资者投资于开放式基金时,则可以随时向基金管理人或代理销售机构申购或赎回。
    - -可赎回性不同
      - 封闭式基金在存续期限内不可赎回
      - 开放式基金所发行的基金份额是可赎回的
    - -交易价格计算标准不同
      - 封闭式基金因在交易所上市,其买卖价格受市场供求关系影响较大:当市场供小于求,基金份额买卖价格可能高于每份基金份额资产净值,这时投资者拥有的基金资产就会增加;当市场供大于求时,基金价格则可能低于每份基金份额资产净值。
      - 而开放式基金的买卖价格是以单位基金资产净值为基础计算的,可直接反映基金份额资产净值的高低。在基金的买卖费用方面,投资者在买卖封闭式基金时与买卖上市股票一样,也要在价格之外付出一定比例的证券交易税和手续费;而开放式基金的投资者需缴纳的相关费用(如首次认购费、赎回费)则包含于基金价格之中。
  - 按照组织形式分为
    - -公司型基金
      - Organized under corporate charter ( 根据公司章程组织 )
      - Supervised by board of director ( 由董事会监督 )
      - Publicly advertized
      - Entrance barrier low
    - -契约型基金
      - Organized under trust agreement ( 信托协议 )
      - Supervised by trust committee ( 信托委员会监督 )
      - Not publicly advertized

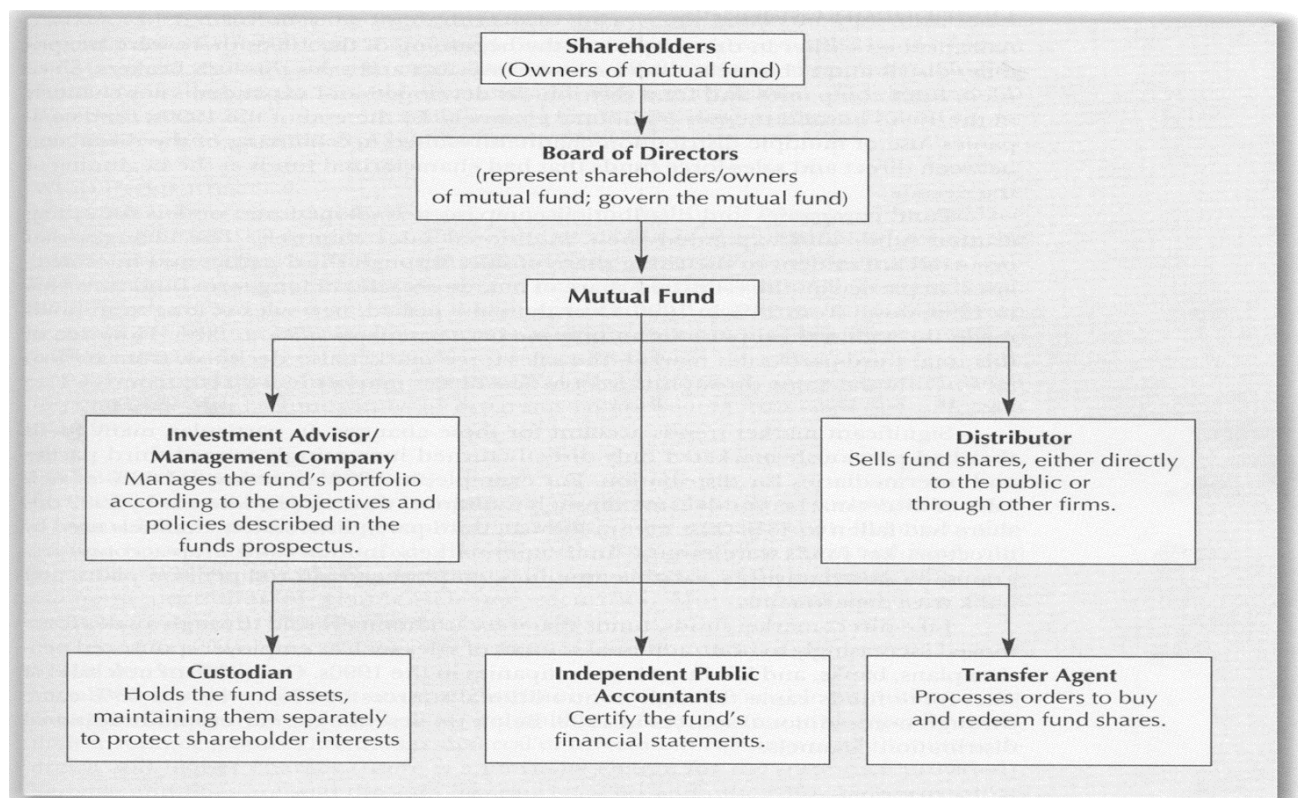


- Entrance barrier high
- AM can be outsource ( 外包 )
- 按照募集与流通方式分为
  - -公募基金
  - -私募基金
    - 在出资人间建立了完备的契约合同的民间私下合伙投资
- 伞形基金 (Umbrella Fund)
  - 一是开放式基金的一种组织结构。基金发起人根据一份总的基金招募书发起设立多只相互之间可以根据规定的程序进行转换的基金，这些基金称为子基金或成分基金(Sub-funds)。而由这些子基金共同构成的这一基金体系就合称为伞型基金。
  - -伞型基金不是一只具体的基金，而是同一基金发起人对由其发起、管理的多只基金的一种经营管理方式。
- 基金中的基金 ( Fund ofFund )
  - -FoF并不直接投资股票或债券，其投资范围仅限于其他基金，通过持有其他证券投资基金而间接持有股票、债券等证券资产，它是结合基金产品创新和销售渠道创新的基金新品种。
- 共同基金
  - A Mutual Fund is an investment vehicle with a pre-stated objective that allows investors to pool their money and benefits from professional management and diversification of investment
  - Mutual Fund Characteristics

<b>Choice</b>	<b>Many funds to choose from in one family</b>
<b>Diversification</b>	<b>Mutual funds hold many companies, lowering the risk over holding individuals stocks</b>
<b>Pooled Investments</b>	<b>Those investing small amounts of money get the same investments of those investing large amounts</b>
<b>Prices Daily</b>	<b>Constantly aware of the value of your investments. See price in paper.</b>
<b>Professionally Managed</b>	<b>Teams working full time tracking the investments</b>
<b>Prospectus</b>	<b>All the risks and costs all stated in this document</b>
<b>Stated Investment Objective</b>	<b>Investor knows exactly what they are investing in</b>
<b>Very Liquid</b>	<b>Can redeem quickly</b>

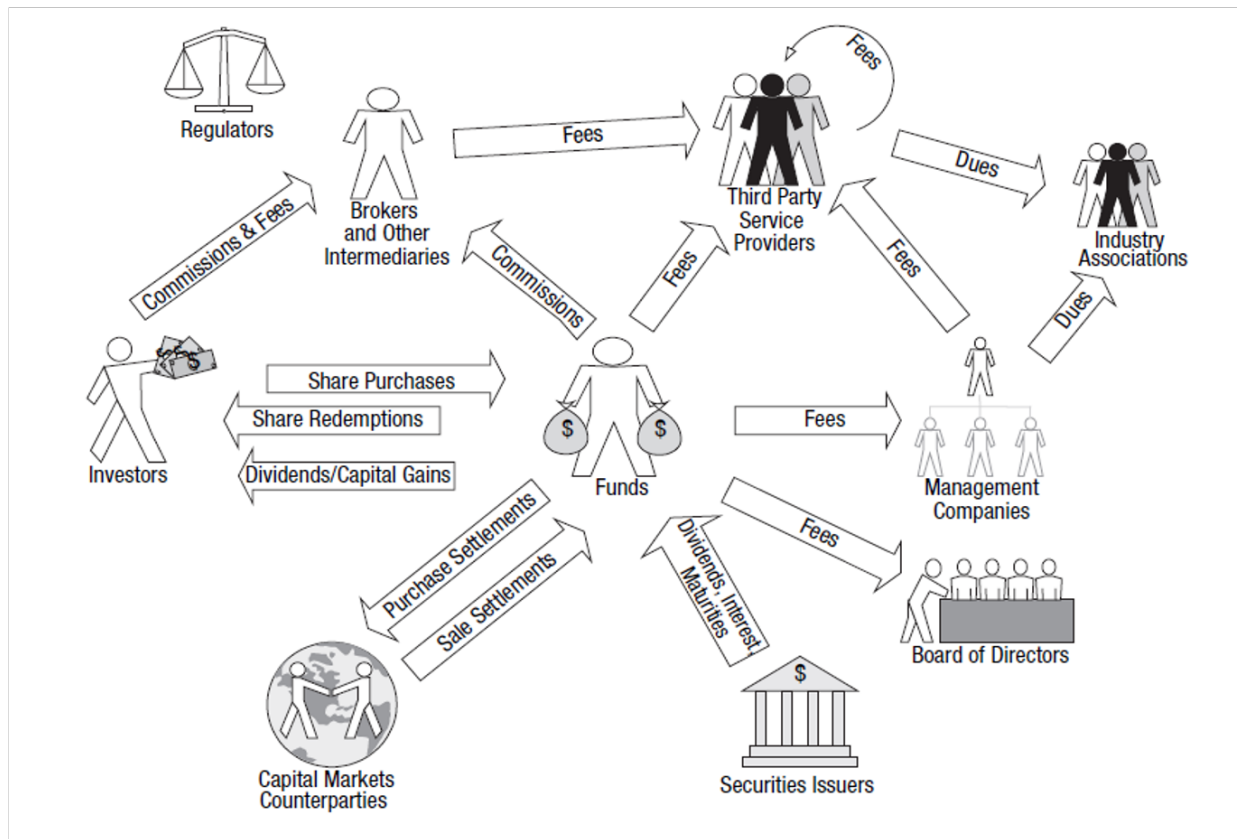
- Mutual Fund Fee Structure
  - Front End Load
    - Fee that is charged up-front. For example,an investor may have \$1000 to invest in a Mutual Fund. If the Mutual Fund charges a Front-End fee(load) of 4% then the investor only invest \$960 into the mutual fund.
  - Back End Load
    - the Mutual Fund Company charges a fee when the investor redeems out of a mutualfund.
  - No Load Funds

- the offering price of the mutual fund is equal to the Net Asset Value of the fund.
- Shareholder Access
  - OpenEnded Funds 发行后随时买随时卖
    - Funds that will distribute an unlimited amount of mutual fund shares to new shareholders. As the shares of the mutual fund grow, so does the size of the fund.
  - ClosedEnded Funds 份额固定，不能买卖，场内交易
    - Funds that are closed to new investors. A fixed number of shares outstanding have been established. The number of shares was determined when the fund was organized and only that number of shares can ever be sold. These shares can be traded on exchanges between investors as can any publicly traded company.
- 交易型开放式指数基金 ( Exchange Traded Fund , ETF )
  - -又称“交易所交易基金”。ETF是一种跟踪“标的指数”变化、且在证券交易所上市交易的基金。ETF，属于开放式基金的一种特殊类型，它综合了封闭式基金和开放式基金的优点，投资者既可以在二级市场买卖ETF份额，又可以向基金管理公司申购或赎回ETF份额。
- Structure of FMC



- Workflow of FMCs

# Workflow of FMCs



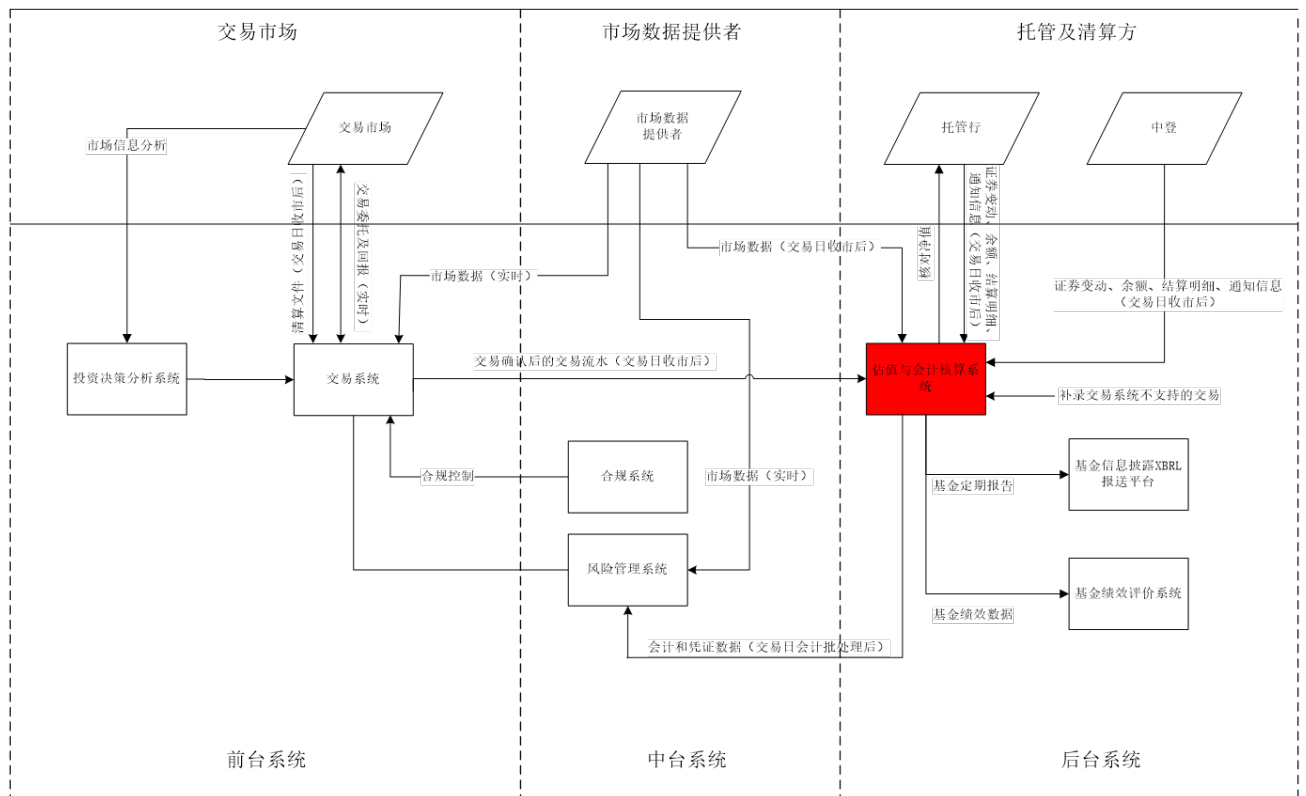
- Front, middle and back office of FMCs
  - front
    - Sale/Client oriented Revenue generation
  - middle
    - Bridge between front and back office
  - back
    - Trade/Sales support Do not generate revenue Incur great losses if fails

## • 保证金交易 ( ? )

- 是指证券交易的当事人在买卖证券时，只向证券公司交付一定的保证金，或者只向证券公司交付一定的证券，而由证券公司提供融资或者融券进行交易。

## • 托管服务 ( ? )

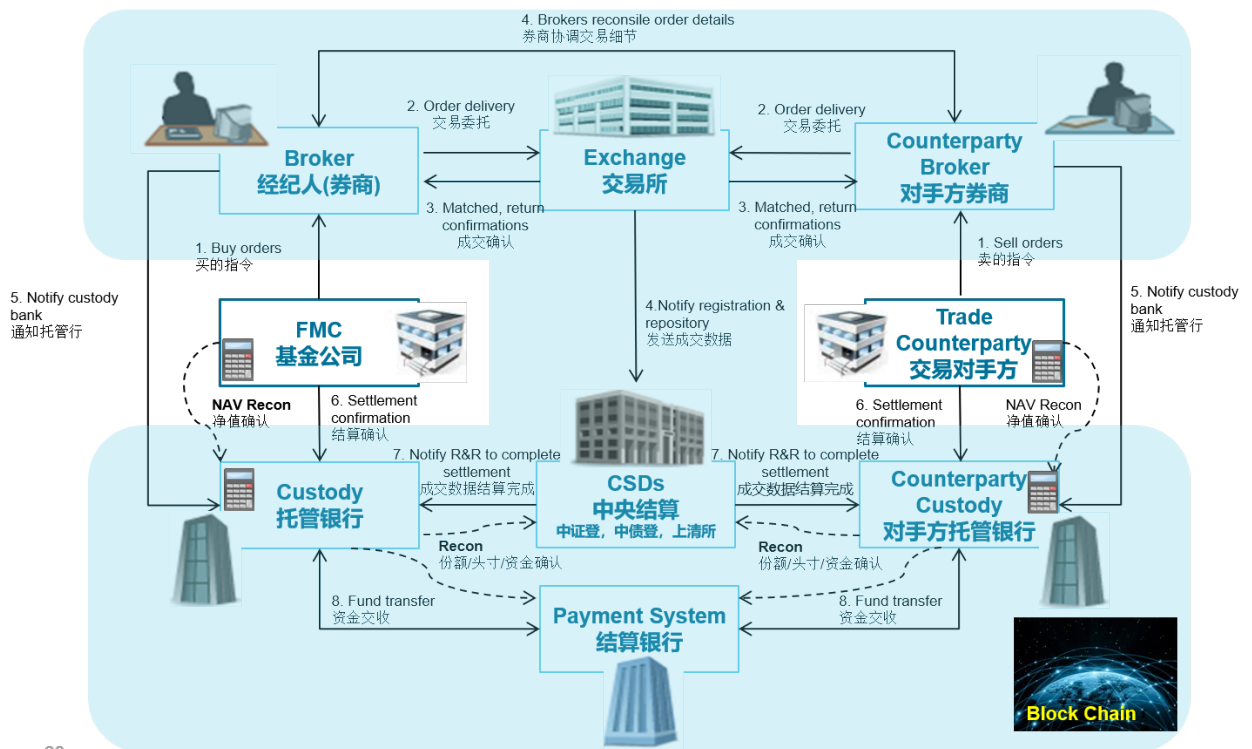
- 基金托管是指商业银行接受基金管理人的委托，代表基金持有人的利益，保管基金资产，监督基金管理人日常投资运作，基金托管人独立开设基金资产账户，依据管理人的指令进行清算和交割，保管基金资产，在有关制度和基金契约规定的范围内对基金业务运作进行监督，并收取一定的托管费。
- 中国托管流程



- 中国目前的传统托管流程

## 中国目前的传统托管流程

China Current Custodian Model - Generic exchange securities trading workflow



30

## • 财务报表 financial statement

- A financial statement that summarizes a company 's assets ( 公司资产 ), liabilities ( 负债 ) and shareholders' equity ( 股东资产 ) at a specific point in time. These three balance sheet segments give investors an idea as to what the company owns and owes, as well as the

amount invested by the shareholders.

- The balance sheet must follow the following formula:
  - $\text{Assets} = \text{Liabilities} + \text{Shareholders' Equity}$
- Three sheet:
  - Balance sheet;
    - It's called a balance sheet because the two sides balance out. This makes sense: a company has to pay for all the things it has (assets) by either borrowing money (liabilities) or getting it from shareholders (shareholders' equity).
    - The balance sheet is one of the most important pieces of financial information issued by a company. It is a snapshot of what a company owns and owes at that point in time. The income statement, on the other hand, shows how much revenue and profit a company has generated over a certain period. Neither statement is better than the other - rather, the financial statements are built to be used together to present a complete picture of a company's finances.
  - Income statement;
    - financial report summarizing revenues and expenses and showing the net profit or loss in a specified accounting period. It's the financial performance due to operations as well as other activities rendering gains or losses of a business entity. Also known as the "profit and loss statement" or "statement of revenue and expense".
    - It displays how well the company can assure success for both itself and its shareholders through the earnings from operations.
  - Cash flow Statement
    - One of the quarterly financial reports any publicly traded company is required to disclose to the SEC ( 美国证券交易委员会 ) and the public. The document provides aggregate data regarding all cash inflows a company receives from both its ongoing operations and external investment sources, as well as all cash outflows that pay for business activities and investments during a given quarter
- others
  - Earnings
    - The net income of a company during a specific period. Net income generally refers to after-tax income.
    - Earnings are perhaps the single most studied number in a company's financial statements. They show a company's profitability.
  - Retained Earnings
    - The percentage of net earnings not paid out as dividends ( 股息 ) , but retained by the company to be reinvested in its core business or to pay debt. It is recorded under shareholders' equity on the balance sheet. Calculated by adding net income to (or subtracting any net losses from) beginning retained earnings and subtracting any dividends paid to shareholders:
  - Return on Investment(ROI)
    - A performance measure used to evaluate the efficiency of an investment or to compare the efficiency of a number of different investments.
    - To calculate ROI, the benefit (return) of an investment is divided by the cost of the investment; the result is expressed as a percentage or a ratio.
    - $\text{return} / \text{investment}$

- Price/Earning (P/E) Ratio

## • 基金净值计算 ( ? )

- T日基金净值=(T日基金总资产-T日基金总负债)/T日发行在外的基金份额总数
- 基金累计净值 = 基金净值 + 基金成立后份额的累计分红金额

## • 主动/被动投资

- 比较

动态(Active Investing) 和静态(Passive Investing)投资		
	动态投资(Active Investing)	静态投资(Passive Investing)
投资目标	战胜市场(beat the market)	满足于市场平均回报(Obtain the market)
平均回报 (30年)	美国Dalbar统计结果：每年3.69% ( 1985-2014 )	S&P 500: 每年11.06% ( 1985-2014 )
策略	选股，选时，选基金经理，选行业	指数化投资，定期再平衡(rebalance)，长期持有 ( Buy and Hold )
交易量	非常高，一年平均62%左右	比较低，一年平均10%左右
支持者	几乎所有的券商，基金管理公司，投资专家，对冲基金和金融媒体	John Bogle, Charles Ellis, DFA, Eugene Fama, David Swensen, Warren Buffett, etc
分析工具	投资是艺术：对未来的预测，直觉，大师手笔	投资是科学：证据主义，基于长期的历史回报和规律

- From the long run, it is hardly for mutual fund or any investment vehicle to beat the market.
- Conclusion: It' s nearly impossible to beat the market constantly
- Choose passively managed fund (Index fund)

## • 基金募集说明书

- A mutual fund prospectus explains how a fund operates, what its performance has been over several years and how much you will pay to purchase and hold your shares.
- Mutual fund classes: Class A, Class B, Class C, Class I ,Class R;
  - Class A: front-end sales charge
  - Class B: back-end asset-based salescharges
  - Class C: Lower back load, higher service fee
  - Class I : for institutional investors
  - Class R: for pension plan, 401 (k)

### • 模拟prospectus

- Name: Scotia Money Market Fund
- Fund type: Canadian money market fund
- Date established: August30, 1990
- Type of securities: ClassA and Class I units of a mutual fund trust
- Eligible for registered plans? Yes
- Portfolio advisor: ScotiaCassels Investment Counsel Limited
- Investment objectives
- Investment strategies
- What are the risks of investing in the fund?
- Who should invest in this fund?
- Investment strategies

## • 72定律

- double your Money!!

- Approx. Years to Double =  $72 / i\%$
- How long does it take to double \$5,000 at a compound rate of 12% per year
  - $72 / 12\% = 6 \text{ Years}$

## • Risk/VaR ( ? )

- 按字面解释就是“在险价值”，其含义指：在市场正常波动下，某一金融资产或证券组合的最大可能损失。更为确切的是指，在一定概率水平（置信度）下，某一金融资产或证券组合价值在未来特定时期内的最大可能损失。
- VaR的表示公式
  - $P(\Delta P \Delta t \leq VaR) = a$
  - P——资产价值损失小于可能损失上限的概率，即英文的Probability。
  - $\Delta P$ ——某一金融资产在一定持有期 $\Delta t$ 的价值损失额。
  - VaR——给定置信水平a下的在险价值，即可能的损失上限。
  - a——给定的置信水平
- VaR从统计的意义上讲，本身是个数字，是指面临“正常”的市场波动时“处于风险状态的价值”。即在给定的置信水平和一定的持有期限内，预期的最大损失量(可以是绝对值，也可以是相对值)。例如，某一投资公司持有的证券组合在未来24小时内，置信度为95%，在证券市场正常波动的情况下，VaR值为520万元，其含义是指，该公司的证券组合在一天内(24小时)，由于市场价格变化而带来的最大损失超过520万元的概率为5%，平均20个交易日才可能出现一次这种情况。或者说有95%的把握判断该投资公司在下一个交易日内的损失在520万元以内。5%的几率反映了金融资产管理者的风险厌恶程度，可根据不同的投资者对风险的偏好程度和承受能力来确定。

## • 货币时间价值/收益率

- What dose time value of money mean?
  - This is one of the most basic financial principle
  - The idea that money available at the present time is worth more than the same amount in the future due to its potential earning capacity. This core principle of finance holds that, provided money can earn interest, any amount of money is worth more the sooner it is received任何一笔钱越早得到越值钱。
- 终值：Future Value (FV):
  - The value of an asset or cash at a specified date in the future.
  - $FV = PV(1 + i)^n$
- 现值：Present Value (PV) :
  - The current worth of a future sum of money or stream of cash flows given a specified rate of return
  - $PV = FV / (1 + i)^n$
  - $PV = PMT ( \text{永续年金} ) / i$
- 现金流：Cash Flow: A series of cash inflow and outflow associated with timeline.
  - A cash flow that occurs in the present (today) is put at time 0.
  - Cash outflows (payments) are given a negative sign.
  - Cash inflows (receipts) are given a positive sign.
  - Discounting: calculate the PV to the beginning of the investment period.
  - Compounding: calculate the FV to the end of period.
- Effective annual rate (EAR)
  - annual rate of return actually being earned after adjustments have been made for different compounding periods.



- $EAR = (1 + \text{periodic rate})^m - 1$
- Periodic rate (期间利率) = nominal rate / m
- M = the number of compounding periods per year
- computing
  - If the nominal rate is 12%, compounded quarterly, compute EAR
  - Answer:
    - Here  $m = 4$ , so the periodic rate is  $12/4 = 3\%$
    - Thus,  $EAR = (1 + 0.03)^4 - 1 = 1.1255 - 1 = 0.1255 = 12.55\%$
  - Computing EARs for a range of compounding frequencies
  - Using a stated rate of 6%, compute EARs for semiannual, quarterly, monthly, and daily compounding.
  - Answer:
    - Semiannual compounding =  $(1 + 0.03)^2 - 1 = 6.09\%$
    - Quarterly compounding =  $(1 + 0.015)^4 - 1 = 6.136\%$
    - Monthly compounding =  $(1 + 0.005)^{12} - 1 = 6.168\%$
    - Daily compounding =  $(1 + 0.00016438)^{365} - 1 = 6.183\%$

- money-weighted return & time-weighted return

- The money-weighted return is defined as the internal rate of return on a portfolio, taking into account all cash inflows and outflows. 在考虑所有现金流入和流出的情况下，投资组合的内部回报率。
- The time-weighted return measures compound growth 衡量复合增长
- example:

	T=0	T=1	T=2
Purchase	1 stock @ \$100	1 stock @ \$120	
Sale			2 stocks @ \$130 = \$260
Dividend		2 \$	$2 \times 2 = 4$ \$

- Money-weighted return

- Money-weighted return (资本加权收益率)
  - Step 1: Determine the timing of each flow and inflow(+) and outflow(-)
    - $t = 0$ : purchase of first share =  $-\$100.00$
    - $t = 1$ : dividend from first share =  $+\$2.00$
    - purchase of second share =  $-\$120.00$
    - Subtotal,  $t = 1$  =  $-\$118.00$
    - $t = 2$ : dividend from two shares =  $+\$4.00$
    - proceeds from selling shares =  $+\$260.00$
    - Subtotal,  $t = 2$  =  $+\$264.00$
  - Step 2:  $PV_{\text{outflows}} = PV_{\text{inflows}}$ 
    - $\$100 + \$118/(1+r) = \$264/(1+r)^2$
  - Step 3: Solve for  $r$  is 13.86%

- Time-weighted return



- Time-weighted return (时间加权收益率)
  - **Step 1: Break the evaluation period into two subperiods:**
    - Holding period 1: Beginning price = \$100.00
    - Dividends paid = \$2.00
    - Ending price = \$120.00
    - Holding period 2: Beginning price = \$240 (2 shares)
    - Dividends paid = \$4.00 (\$2 per share)
    - Ending price = \$260.00 (2 shares)
  - **Step 2: Calculate the HPR (holding period rate) for each holding period**
    - $HPR1 = [(\$120 + 2) / \$100] - 1 = 22\%$
    - $HPR2 = [(\$260 + 4) / \$240] - 1 = 10\%$
  - **Step 3: Find the compound annual rate over the 2-year period.**
    - $(1 + \text{time-weighted return})^2 = 1.22 \times 1.10$
    - Time-weighted return = 15.84%

- In the investment management industry, the time-weighted rate of return is the preferred method of performance measurement, because it is not affected by the timing of cash inflows and outflows.
  - This measure is often used to compare the returns of investment managers because it eliminates the distorting effects on growth rates created by inflows and outflows of money.
  - 消除了资金流入和流出对增长率造成的扭曲效应。
- But, however, if the fund manager has discretion over the timing of cash flow (对现金流的时间有自由裁量权), performance should be evaluated based on Money weighted rate of return.

## • DTCC美国存管信托和结算公司 ( ? ) 的功能

- Is an American post-trade financial services company providing clearing and settlement services to the financial markets. It performs the exchange of securities on behalf of buyers and sellers and functions as a central securities depository by providing central custody of securities.
- 是一家为金融市场提供清算和结算服务的美国后贸易金融服务公司。它以买卖双方的名义进行证券交易，并通过提供中央证券托管，发挥中央证券存管机构的职能。
  - 集中保管，就是把所有的实体证券全部集中在同一个地方进行保管，所有的交易、交割或股权转移变更，都是划拨转帐的方式进行 ( Book-entry System )
  - 集中交割，则是在市场上成立一家公司，由它来担任所有证券交易的对手方，然后将所有交易者的买卖部位进行多边冲销，最后再以冲销后的净额进行结算交割。
- 功能
  - 清算和结算
  - 资产服务
    - 存管信托公司通过“固化证券”和簿记方式，为客户提供清算和结算便利，并大大减少成本支出。DTC为NSCC净额结算、机构交易 (包括托管银行和经纪人/交易商之间的货币与证券转移) 以及货币市场工具结算提供证券转移。
  - 全球公司行为
    - DTCC的业务解决有限责任公司 ( Solutions LLC ) 负责运行全球公司行为校验服务，为全球的股票和固定收益工具集中提供公司行为的有效信息来源，成为接收、比较、验证、储存和发布全球公司行为的信息枢纽。

- 场外交易（OTC）衍生工具
- DTCC的衍生服务有限责任公司为场外衍生品交易提供自动比对和确认服务，还提供相关的支付资金流比对和双边轧差。
- 财富管理
- 保险服务