MoneyTalks Value Investing Course - Enhanced Edition

A Comprehensive Framework for Systematic Investment Analysis

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Core Investment Philosophy {#core-philosophy}

The Ben Graham Foundation

What is a Stock?
A stock represents fractional ownership in a business. It is not:

- A lottery ticket
- A trading vehicle
- A momentum play

It is a claim on the future cash flows and assets of an operating business.

The Three Fundamental Principles

1. Intrinsic Value

Definition: Every company has an objective economic value independent of its market price.

Key Concepts:

- Intrinsic value is calculated based on future cash flows
- Market price fluctuates around intrinsic value
- Short-term: prices deviate significantly
- Long-term: prices converge to intrinsic value

Visual Representation:
Price ————————————————
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Value ———————————————— (Stable)

2. Margin of Safety

Rule: Only purchase when market price provides at least 30% discount to calculated intrinsic value.

Rationale:

- Our valuation models contain errors
- Future predictions are uncertain
- Margin protects against:
    - Calculation mistakes
    - Unforeseen business deterioration
    - Market timing errors

Formula:
Margin of Safety = (Intrinsic Value - Market Price) / Intrinsic Value
Required Minimum: 30%

Example:

- Calculated Intrinsic Value: $100
- Required Purchase Price: $\leq$ $70
- This 30% buffer absorbs estimation errors

3. Mr. Market

The Parable:
Imagine a business partner who offers daily to buy your share or sell you his share at varying prices.

Mr. Market's Characteristics:

- Manic-depressive personality
- Offers wildly different prices based on emotion
- Sometimes euphoric (high prices)
- Sometimes depressed (low prices)
- His mood swings create opportunities

How to Use Mr. Market:

- Ignore his moods
- Exploit his irrationality
- Buy when he's pessimistic
- Sell (or hold) when he's euphoric
- Never let him influence your judgment

The Three-Pillar Framework {#three-pillar-framework}

Four Investment Categories

1. Cigar Butts (Deep Value)

Definition: Companies trading below liquidation value.

Characteristics:

- Market Cap < Net Current Assets
- Dying or declining businesses
- "One free puff left"

Example Analysis:
Company: Struggling Bookstore

- Annual Revenue: $1M
- Operating Profit: $0
- DCF Value: $0

But:

- Inventory (books): $1M (returnable to publishers)
- Equipment: $200K liquidation value
- Total Liquidation Value: $1.2M
- Market Cap: $800K
- Margin of Safety: 33%

Risks:

- Value trap (assets worthless)
- Management destroys remaining value
- Time value of money (years to realize)

Buffett's Evolution: Moved away from cigar butts toward quality businesses.

2. Temporary Crisis

Definition: Quality company facing short-term negative sentiment.

Characteristics:

- Strong underlying business
- Temporary issue creating fear
- Market overreaction

Historical Examples:

Meta (2022):

- Metaverse investment fears
- Apple privacy changes
- "Kids leaving Facebook" narrative
- Stock dropped from P/E 25 to P/E 7

- Core business remained strong
- Perfect storm of FUD

American Express (1960s - Salad Oil Scandal):

- Warehouse receipts fraud
- Stock crashed 50%
- Core business unaffected
- Buffett bought heavily

Requirements:

- Distinguish temporary from permanent
- Understand the actual impact
- Calculate worst-case scenarios

3. Quality Companies (Buffett's Focus)

Definition: Businesses with durable competitive advantages trading at reasonable prices.

Characteristics:

- Strong economic moat
- Consistent ROIC > 15%
- Predictable cash flows
- Excellent management
- Opportunity to reinvest at high returns

Examples:

- Coca-Cola [finance:The Coca-Cola Company]
- See's Candies (private)
- Apple [finance:Apple Inc.] (iPhone ecosystem)

Buffett Quote: "It's far better to buy a wonderful company at a fair price than a fair company at a wonderful price."

4. Special Situations

Definition: Events-driven opportunities with catalyst-defined returns.

Types:

- Spin-offs
- Merger arbitrage
- Restructurings
- Liquidations
- Regulatory changes

Example:
Company A spinning off Division B

- Parent company shareholders don't want B
- Forced selling creates opportunity
- B trades below intrinsic value

- Catalyst: Selling pressure exhaustion

Financial Statement Analysis {#financial-statement-analysis}

The Three Core Statements

1. Balance Sheet (Point in Time)

Purpose: Snapshot of assets, liabilities, and equity at specific date.

Structure:
ASSETS = LIABILITIES + SHAREHOLDERS' EQUITY

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Assets:
├── Current Assets (< 1 year)
│   ├── Cash & Cash Equivalents
│   ├── Accounts Receivable
│   ├── Inventory
│   └── Prepaid Expenses
└── Non-Current Assets
├── Property, Plant & Equipment (PP&E)
├── Intangible Assets
├── Goodwill
└── Long-term Investments

Liabilities:
├── Current Liabilities (< 1 year)
│   ├── Accounts Payable
│   ├── Short-term Debt
│   └── Accrued Expenses
└── Long-term Liabilities
└── Long-term Debt

Shareholders' Equity:
├── Common Stock
├── Retained Earnings
└── Treasury Stock
```

Key Ratios:

Current Ratio:
Current Ratio = Current Assets / Current Liabilities
Healthy: > 1.5
Warning: < 1.0

Debt-to-Equity:
D/E = Total Debt / Shareholders' Equity
Conservative: < 0.5
Risky: > 2.0

Working Capital:
Working Capital = Current Assets - Current Liabilities

Positive: Generally good
Negative: Can be good (Spotify model) or bad (liquidity crisis)

2. Income Statement (Period Performance)

Purpose: Revenue, expenses, and profitability over time period.

Structure:
Revenue (Top Line)

- Cost of Goods Sold (COGS)
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  = Gross Profit
  Gross Margin % = Gross Profit / Revenue
- Operating Expenses (OPEX)
  ├── Research & Development (R&D)
  ├── Sales & Marketing (S&M)
  ├── General & Administrative (G&A)
  └── Advertising
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  = Operating Income (EBIT)
  Operating Margin % = EBIT / Revenue

- Depreciation & Amortization
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  = EBITDA
  EBITDA Margin % = EBITDA / Revenue

- Interest Expense
- Taxes
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  = Net Income (Bottom Line)
  Net Margin % = Net Income / Revenue

Key Analysis Points:

Margin Expansion/Contraction:

- Improving margins = operational efficiency
- Declining margins = competitive pressure or poor execution

R&D Inflation Warning:
If R&D % of Revenue increases significantly faster than revenue growth:
→ Possible "developer inflation"
→ Inefficient scaling
→ Management losing control

Operating Leverage:
Revenue grows 20%
Operating Income grows 40%

→ Positive operating leverage
→ Fixed costs being absorbed

3. Cash Flow Statement (Cash Reality)

Purpose: Bridge between accounting (income statement) and cash reality.

Three Sections:

A. Operating Cash Flow (OCF):
Net Income

- Depreciation & Amortization (non-cash)
- Stock-Based Compensation (non-cash)

- Changes in Working Capital
  ├── Increase in Receivables (cash outflow)
  ├── Increase in Inventory (cash outflow)
  └── Increase in Payables (cash inflow)
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  = Operating Cash Flow

OCF Margin % = OCF / Revenue

B. Investing Cash Flow:

- Capital Expenditures (CapEx)
- Acquisitions

- Asset Sales
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  = Investing Cash Flow

Free Cash Flow (FCF) = OCF - CapEx

C. Financing Cash Flow:

- Debt Issued

- Debt Repaid

- Equity Issued

- Share Buybacks
- Dividends Paid
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  = Financing Cash Flow

Critical Concept: Depreciation vs. CapEx

The Machine Example:

- Purchase machine: $1M (Year 0)
- Useful life: 10 years
- Accounting depreciation: $100K/year

In Financial Statements:

- Income Statement: Shows $100K expense annually
- Cash Flow: Year 0 shows -$1M, then +$100K added back annually

For Valuation:

- Growth companies: Use actual CapEx (cash reality)
- Mature companies: CapEx ≈ Depreciation
- Maintenance CapEx < Growth CapEx

Stock-Based Compensation (SBC) Warning:

Many companies add back SBC to cash flow, claiming it's "non-cash."

Reality:
SBC = Real Economic Expense

- Dilutes existing shareholders
- Transfers value from shareholders to employees
- Should be subtracted from cash flow for valuation

Adjusted OCF = OCF - SBC

Working Capital Analysis

Standard Formula:
Working Capital = Current Assets - Current Liabilities

Two Interpretations:

Positive Working Capital (Traditional):
Assets: $150M
Liabilities: $100M
Working Capital: $50M
→ Cash tied up in operations

Negative Working Capital (Power Model - Spotify/Netflix):
Assets: $100M
Liabilities: $150M
Working Capital: -$50M

How is this possible?

- Customers pay upfront (subscriptions)
- Suppliers paid later (content creators)
- Company holds cash before paying suppliers
    → Growth generates cash

Red Flag Negative Working Capital:
Accounts Payable rising faster than revenue
→ Company can't pay suppliers
→ Liquidity crisis imminent

Valuation Methodologies {#valuation-methodologies}

Enterprise Value (EV)

Definition: Value of operating business, independent of capital structure.

Formula:
Enterprise Value = Market Cap + Net Debt

Where:
Market Cap = Share Price × Shares Outstanding
Net Debt = Total Debt - Cash

Why EV?

- Management can change capital structure anytime
- Cash can be distributed or invested
- Debt can be repaid or issued
- EV isolates operating performance

Example:
Company A:

- Market Cap: $1B
- Debt: $300M
- Cash: $100M
- EV: $1B + $300M - $100M = $1.2B

Company B:

- Market Cap: $1.2B
- No Debt
- No Cash
- EV: $1.2B

Both companies valued identically for operations

Discounted Cash Flow (DCF)

Philosophy: A business is worth the present value of all future cash flows.

Core Formula:
$DCF = \Sigma [FCF_n / (1 + r)^n] + \text{Terminal Value}$

Where:
FCF = Free Cash Flow
r = Discount Rate
n = Year

Step-by-Step Process:

1. Project Free Cash Flows (5-10 years)

Year 1 FCF Projection:
Revenue × Operating Margin × (1 - Tax Rate) - CapEx - Δ Working Capital

2. Calculate Discount Rate

Discount Rate (r) = Risk-Free Rate + Risk Premium

Risk-Free Rate = 10-year government bond yield
Risk Premium = Additional return required for risk

Conservative: r = 9-10%
High-risk business: r = 12-15%

3. Calculate Terminal Value

Method A: Perpetuity Growth
Terminal Value = FCF(final year) × (1 + g) / (r - g)

Where g = perpetual growth rate (2-3% typical)

Method B: Exit Multiple
Terminal Value = Final Year EBIT × Terminal Multiple

Conservative: 10x EBIT
Growth: 15x EBIT

4. Discount Everything to Present

$PV = \Sigma [FCF_1/(1.1)^1 + FCF_2/(1.1)^2 + \ldots + TV/(1.1)^n]$

5. Convert EV to Equity Value

Equity Value = EV + Cash - Debt
Per Share Value = Equity Value / Shares Outstanding

DCF Example: Simple Company

Assumptions:

- Current FCF: $100M
- Growth: 10% for 5 years, then 3% perpetual
- Discount Rate: 10%
- Current Shares: 100M

Year 1: $110M / 1.1^1 = $100M
Year 2: $121M / 1.1^2 = $100M
Year 3: $133M / 1.1^3 = $100M
Year 4: $146M / 1.1^4 = $100M
Year 5: $161M / 1.1^5 = $100M

Terminal Value: $161M × 1.03 / (0.10 - 0.03) = $2,368M
PV of Terminal: $2,368M / 1.1^5 = $1,471M

Total EV: $500M + $1,471M = $1,971M

Add: Cash $200M
Less: Debt $300M
Equity Value: $1,871M

Per Share: $1,871M / 100M = $18.71

If trading at $13.00 → Margin of Safety = 30%

Multiples-Based Valuation

Philosophy: Similar businesses should trade at similar multiples.

Common Multiples:

1. EV/EBIT
EV/EBIT = Enterprise Value / Operating Income

Interpretation:

- How many years of operating profit to buy the business
- Lower = cheaper
- Typical range: 8-15x

2. EV/Revenue
EV/Revenue = Enterprise Value / Annual Revenue

Use for:

- Early-stage companies (no profit)
- Comparing similar margin businesses

Example:
SaaS companies: 5-10x Revenue
Retailers: 0.5-1x Revenue

3. P/E Ratio (Price/Earnings)
P/E = Market Cap / Net Income

Historical Context:

- Market average: 15-17x
- Growth: 20-30x
- Value: 8-12x

Comparable Company Analysis (Comps)

Process:

1. Find similar companies
2. Calculate their multiples
3. Apply median multiple to target
4. Sanity check with DCF

Example: Contract Manufacturer Analysis

Finding VTech's CMS Division Value:

Comparable Companies:
Company A: EV/Sales = 0.5x, OCF Margin = 8%
Company B: EV/Sales = 0.3x, OCF Margin = 10%
Company C: EV/Sales = 0.9x, OCF Margin = 11%

Median EV/Sales: 0.7x

VTech CMS Revenue: $972M
Implied EV: $972M × 0.7 = $680M

Dangers of Multiples:

- Garbage in, garbage out
- "Comparables" rarely truly comparable
- Entire sector can be overvalued
- Ignores growth differences

Sum-of-the-Parts Valuation

When to Use:

- Conglomerates
- Multi-segment businesses
- Hidden value in divisions

Process:

1. Separate each business unit
2. Value each independently
3. Apply appropriate multiple/DCF
4. Sum all parts

VTech Example (Real Case Study):

VTech Total OCF: $186M

Segment 1: CMS (Contract Manufacturing)

- Revenue: $972M
- OCF Assumption: 5%
- OCF: $49M
- Comparable EV/Sales: 0.7x
- Value: $680M

Segment 2: ELP (Toys)

- Revenue: $891M
- OCF Assumption: 13%
- OCF: $116M
- Tax Rate: 10.5%
- NOPAT: $104M
- EV/NOPAT: 10x
- Value: $1,040M

Segment 3: TEL (Phones)

- Revenue: $300M
- Value: $299M

Total EV: $2,019M
Add: Net Cash $200M
Equity Value: $2,219M
Shares: 252M
Per Share: HKD 68

Market Price: HKD 45
Margin of Safety: 34%

Reverse DCF Analysis

Purpose: Understand what the market is assuming.

Method:

1. Start with current stock price
2. Work backwards to implied cash flows
3. Ask: "Are these assumptions reasonable?"

Example:
Stock trading at $100
Market Cap: $10B
EV: $10B

Reverse DCF shows market assumes:

- 20% annual growth for 10 years
- 25% operating margins
- Maintains dominance forever

Question: Is this realistic given:

- Market maturing?
- Competition increasing?
- Margins compressing?

If assumptions unrealistic → Overvalued

Qualitative Analysis Framework {#qualitative-analysis}

The Economic Moat

Definition: Durable competitive advantage that protects profits from competition.

Warren Buffett: "I look for a castle with a wide moat."

Five Types of Moats

1. Network Effects

Mechanism: Value increases as more users join.

Examples:

- Facebook/Meta [finance:Meta Platforms, Inc.]: More users → More friends → More value
- Visa [finance:Visa Inc.]: More merchants → More cardholders → More merchants
- eBay [finance:eBay Inc.]: More buyers → More sellers → More buyers

Test: Would the product be useless with few users? If yes, network effect exists.

2. Switching Costs

Mechanism: High cost/friction to change providers.

Examples:

- Enterprise Software (SAP, Oracle [finance:Oracle Corporation])
  - Integration into workflows
  - Employee training
  - Data migration costs
- Bank accounts
  - Autopay setups
  - Linked accounts
  - Psychological friction

Test: Would switching take months and cost significant money/time?

3. Cost Advantages

Mechanism: Structural ability to produce at lower cost than competitors.

Examples:

- Costco [finance:Costco Wholesale Corporation]: Scale buying power
- Geico (Berkshire subsidiary): Low-cost distribution (direct vs agents)
- Amazon [finance:Amazon.com, Inc.] AWS: Scale infrastructure

Sources:

- Proprietary technology
- Preferential access to resources
- Geographic location
- Scale economies

4. Intangible Assets

Brands:

- Coca-Cola: Brand creates pricing power
- Nike [finance:NIKE, Inc.]: "Just Do It" emotional connection
- Disney [finance:The Walt Disney Company]: Character licensing

Patents:

- Pharmaceutical companies (while patents last)
- Tech companies (defensive portfolios)

Regulatory Licenses:

- Utilities
- Banks
- Casinos

5. Efficient Scale

Mechanism: Market only supports limited competitors profitably.

Examples:

- Local newspapers (historically)
- Railroads in specific corridors
- Waste management in local areas

Characteristics:

- High fixed costs
- Geographic constraints
- No incentive for new entrants

Moat Analysis Checklist

☐ What is the moat type?
☐ How wide is the moat? (Years of protection)
☐ Is the moat strengthening or weakening?
☐ Can competitors replicate it?
☐ What would it cost a competitor to breach the moat?
☐ Has the moat protected profits historically?

Disruption Risk Analysis

Central Question: Could this be the next Blackberry or Nokia?

Historical Disruptions:

1. Blackberry

- Moat: Enterprise email, QWERTY keyboard
- Disruption: iPhone touchscreen, consumer-led adoption
- Mistake: Ignored consumer market shift

2. Nokia

- Moat: Manufacturing scale, carrier relationships
- Disruption: Software ecosystem (iOS, Android)
- Mistake: Underestimated software importance

3. Blockbuster

- Moat: Store locations, inventory
- Disruption: Streaming (Netflix)
- Mistake: Dismissed internet delivery

Disruption Checklist:

☐ Is the business model tied to legacy technology?
☐ Are younger demographics abandoning the product?
☐ Are margins under pressure from new entrants?
☐ Is customer switching accelerating?
☐ Does management dismiss new competitors?
☐ Is the "moat" actually just inertia?

Example: Meta 2022 Analysis

Bear Case (Market Narrative):

- Kids leaving Facebook for TikTok
- Apple privacy changes crushing ads
- Metaverse spending wasteful

Bull Case (Reality Check):

- Instagram still growing with youth
- Family of Apps = 3B+ users (network effect intact)
- Ad revenue recovered quickly
- Metaverse spending <20% of revenue
- Core business free cash flow machine

Result: Disruption fears overblown. Stock went P/E 7 to P/E 25 in 18 months.

Management Quality Analysis

Charlie Munger: "We look for three things: intelligence, energy, and integrity. If they don't have the latter, the first two will kill you."

Capital Allocation (Primary CEO Skill)

The CEO's Job: Allocate capital efficiently.

Five Capital Allocation Options:

1. Reinvest in Business

- Best if ROIC > Cost of Capital
- Check: Is revenue/profit growing from reinvestment?

2. Acquisitions

- Risky: Most fail to create value
- Check: Historical M&A track record

3. Dividends

- Return cash to shareholders

- Signals: No better use for capital

4. Share Buybacks

- Best when stock undervalued
- Check: Buying low or high?

5. Debt Paydown

- Conservative
- Appropriate when over-leveraged

ROIC: The Truth Serum

Formula:
ROIC = NOPAT / Invested Capital

Where:
NOPAT = Net Operating Profit After Tax
Invested Capital = Equity + Debt - Cash

Interpretation:
ROIC > 20%: Excellent capital allocation
ROIC 10-20%: Acceptable
ROIC < 10%: Destroying value (if Cost of Capital = 10%)

Warning Sign:
If ROIC < Discount Rate:

- Every dollar reinvested destroys value
- Better to return cash to shareholders
- Management pursuing growth for ego ("empire building")

Historical Example: Berkshire Hathaway Textiles

1960s: Buffett buys textile mill
ROIC: 4%
Cost of Capital: 10%

Every dollar invested loses 6% annually
Solution: Stop investing in textiles
Pivot: Use cash flow to buy See's Candies (ROIC 25%+)

Management Analysis Sources

1. Proxy Statements (DEF 14A)

Key Sections:

- Executive compensation structure
- Insider ownership (skin in the game)
- Board composition
- Related party transactions

Compensation Red Flags:
☐ Compensation tied to revenue growth only (ignores profitability)
☐ Excessive perks
☐ Board stacked with friends/family
☐ Low insider ownership

Good Signs:
✓ Compensation tied to ROIC/ROE
✓ Stock ownership requirements
✓ Long-term performance stock units
✓ CEO with significant personal wealth in stock

2. Shareholder Letters

What to Look For:

Honesty:

- Do they admit mistakes?
- Do they blame externalities constantly?

Substance:

- Do they explain the business clearly?
- Do they discuss capital allocation philosophy?

Consistency:

- Are past predictions accurate?
- Do they stick to stated strategies?

Examples:

- Berkshire Hathaway letters (gold standard)
- Amazon Jeff Bezos letters (long-term thinking)

3. Earnings Call Transcripts

Red Flags:
☐ Dodging questions
☐ Changing metrics to hide problems
☐ Blaming "one-time" events every quarter
☐ Aggressive with analysts
☐ Promoting stock price vs business

Good Signs:
✓ Direct answers
✓ Acknowledges problems
✓ Discusses competitive landscape honestly
✓ Focuses on long-term value creation

4. Insider Trading Activity

Source: SEC Form 4 filings, InsiderScreener.com

Interpretation:
Multiple insiders buying: Positive signal
CEO selling small %: Neutral (diversification)
CEO selling large %: Negative signal
Multiple insiders selling: Very negative

Example Context:
CEO owns $100M in stock
Sells $2M: Diversification
Sells $50M: Red flag

ROIC and Capital Allocation {#roic-capital-allocation}

Why ROIC Matters

Core Insight: High ROIC companies create compounding value machines.

Formula Deep Dive:
ROIC = NOPAT / Invested Capital

NOPAT = EBIT × (1 - Tax Rate)
Invested Capital = Total Assets - Non-interest Bearing Current Liabilities
Or: Equity + Net Debt

Example Calculation:
Company Financials:

- EBIT: $100M
- Tax Rate: 21%
- Equity: $400M
- Debt: $100M
- Cash: $50M

NOPAT: $100M × (1 - 0.21) = $79M
Invested Capital: $400M + $100M - $50M = $450M
ROIC: $79M / $450M = 17.6%

ROIC-Based Investment Framework

Three Scenarios:

1. ROIC > Cost of Capital → Reinvest Everything

Company A:

- ROIC: 25%
- Cost of Capital: 10%
- Every $1 reinvested creates $0.25 annual return
- Strategy: No dividends, reinvest all cash

Example: Amazon (historical)

- Reinvested all cash into growth

- Shareholders benefited from compounding

2. ROIC ≈ Cost of Capital → Return Some Cash

Company B:

- ROIC: 12%
- Cost of Capital: 10%
- Marginal projects barely accretive
- Strategy: Dividends + selective reinvestment

3. ROIC < Cost of Capital → Return All Cash

Company C:

- ROIC: 7%
- Cost of Capital: 10%
- Destroying value with reinvestment
- Strategy: Dividends + buybacks, shrink business

Example: Textiles industry

- Low returns, no growth
- Best use: Liquidate

DCF Adjusted for ROIC

Traditional DCF:
Assumes all cash flows distributed

ROIC-Adjusted DCF:
Assumes reinvestment at ROIC rate

Valuation Impact:

Example: Two Identical Companies

Company X (Low ROIC):

- Current FCF: $100M
- ROIC: 8%
- Reinvests 50% of cash
- Discount Rate: 10%
- Terminal Multiple: 8x

Company Y (High ROIC):

- Current FCF: $100M
- ROIC: 20%
- Reinvests 50% of cash
- Discount Rate: 10%
- Terminal Multiple: 15x

Valuation:
Company X: ~$800M (8x FCF)

Company Y: ~$1,500M (15x FCF)

Why? Company Y's reinvestment creates compounding value

Excel Formula Template:
Year N FCF = Year (N-1) FCF × [1 + (Reinvestment Rate × ROIC)]

Portfolio Construction and Risk Management {#portfolio-management}

Risk Framework

Two Categories of Risk

1. Known Unknowns

Risks we can identify and monitor:

Apple Example:

- App Store regulation risk
- China concentration risk
- Product cycle risk

Strategy:

- Size position accordingly
- Monitor continuously
- Have exit plan
- Scenario analysis

2. Unknown Unknowns (Most Dangerous)

Risks we don't know exist:

Cause: Operating outside circle of competence

Historical Examples:

- Enron (accounting fraud)
- COVID-19 impact (2020)
- Russian invasion impact on Fix Price (2022)

Defense: Stay within competence circle

Risk Types by Category

Company-Specific Risk:
☐ Competitive position eroding
☐ Management change
☐ Product failure
☐ Fraud

Industry Risk:
☐ Technological disruption
☐ Regulatory changes
☐ Consumer preference shifts
☐ Cyclical downturns

Macro Risk:
☐ Recession
☐ Interest rate changes
☐ Currency fluctuations
☐ Geopolitical events

Portfolio Construction Rules

1. Position Sizing

Base Case:
High Conviction (circle of competence): 10-15%
Medium Conviction: 5-10%
Low Conviction: <5%

Adjustments:

- Higher uncertainty → Smaller position
- More leverage → Smaller position
- Lower liquidity → Smaller position

Example:
Portfolio: $1M

Position A (Large Cap, High Conviction): $150K (15%)
Position B (Small Cap, Medium Conviction): $75K (7.5%)
Position C (Speculative): $30K (3%)

2. Diversification

Minimum Effective Diversification:
10-15 stocks: Eliminates 90% of company-specific risk
20-30 stocks: Eliminates 95% of company-specific risk

> 30 stocks: Diminishing returns, becoming index

Buffett Approach:

- 5-10 positions
- Very high conviction
- Deep understanding

Graham Approach:

- 20-30 positions
- Quantitative screen
- Statistical edge

3. Correlation Management

Naive Diversification (Bad):
20 tech stocks
Result: All move together, no real diversification
2022: All down 40-70%

True Diversification (Good):
5 tech stocks
5 consumer staples
5 financials
5 healthcare

Correlation reduced, sector risk managed

Low-Correlation Strategies:

- Special situations
- Deep value / cigar butts
- Cash-rich companies
- Counter-cyclical businesses

Risk Monitoring System

Quarterly Checklist:

☐ Re-run DCF with updated numbers
☐ Check if thesis still intact
☐ Review management commentary
☐ Monitor competitive landscape
☐ Assess macro changes
☐ Review insider transactions
☐ Check position size vs conviction

Sell Discipline:

When to Sell:

1. Thesis broken (fundamentals deteriorated)
2. Better opportunity (reallocation)
3. Full valuation reached
4. Mistake realized (circle of competence violation)

When NOT to Sell:

- Price volatility
- Short-term earnings miss
- Macro fear
- Mr. Market's mood

Automated Stock Analyzer Rules {#automated-analyzer}

Rule-Based System Design

Philosophy: Combine quantitative "hard rules" with qualitative LLM analysis.

Hard Rules (Python Implementation)

1. Financial Health Screen

Screening Rules

def financial_health_check(financials):
score = 0
flags = []

```
    # Rule 1: Positive Operating Cash Flow
    if financials['ocf'] > 0:
        score += 1
    else:
        flags.append("Negative operating cash flow")


    # Rule 2: Debt-to-Equity Ratio
    de_ratio = financials['total_debt'] / financials['equity']
    if de_ratio < 0.5:
        score += 2
        flags.append("Conservative balance sheet")
    elif de_ratio < 1.0:
        score += 1
    else:
        flags.append("HIGH DEBT WARNING")


    # Rule 3: Current Ratio
    current_ratio = financials['current_assets'] / financials['current_liabilities']
    if current_ratio > 1.5:
        score += 1
    elif current_ratio < 1.0:
        flags.append("Liquidity concern")


    # Rule 4: Interest Coverage
    if financials['ebit'] / financials['interest_expense'] > 5:
```

```
        score += 1
    else:
        flags.append("Tight interest coverage")

    return score, flags
```

2. ROIC Quality Check

```python
def roic_analysis(financials, years=5):
    """
    Calculate ROIC trends and quality score
    """
    roic_values = []

    for year in financials['annual_data']:
        nopat = year['ebit'] * (1 - year['tax_rate'])
        invested_capital = year['equity'] + year['net_debt']
        roic = nopat / invested_capital
        roic_values.append(roic)

    avg_roic = sum(roic_values) / len(roic_values)

    # Scoring
    if avg_roic > 0.20:
        rating = "EXCELLENT"
        score = 3
    elif avg_roic > 0.15:
        rating = "GOOD"
        score = 2
    elif avg_roic > 0.10:
        rating = "ACCEPTABLE"
        score = 1
    else:
        rating = "POOR - Value Destruction"
        score = 0

    # Check for consistency
    is_consistent = max(roic_values) / min(roic_values) < 1.5
```

```
    return {
        'avg_roic': avg_roic,
        'rating': rating,
        'score': score,
        'consistent': is_consistent,
        'trend': roic_values
    }
```

3. Red Flag Detection

```python
def detect_red_flags(financials, segments=None):
    """
    Automated red flag detection system
    """
    red_flags = []

    # Inventory Growing Faster Than Sales
    if 'inventory' in financials and 'revenue' in financials:
        inventory_growth = financials['inventory'][-1] / financials['inventory'][-2] - 1
        revenue_growth = financials['revenue'][-1] / financials['revenue'][-2] - 1

        if inventory_growth > revenue_growth + 0.05:
            red_flags.append({
                'type': 'INVENTORY_BLOAT',
                'severity': 'HIGH',
                'message': f'Inventory growing {inventory_growth:.1%} vs Revenue {rev
            })

    # R&D Inflation (% of revenue growing)
    rd_pct_current = financials['rd_expense'][-1] / financials['revenue'][-1]
    rd_pct_historical = financials['rd_expense'][-3] / financials['revenue'][-3]

    if rd_pct_current > rd_pct_historical * 1.3:
        red_flags.append({
            'type': 'RD_INFLATION',
            'severity': 'MEDIUM',
            'message': 'R&D as % of revenue increased 30%+ (developer inflation?)'
        })
```

```python
    # Declining Margins Under Revenue Growth
    if financials['revenue_growth'] > 0.10:
        if financials['operating_margin'][-1] < financials['operating_margin'][-2]:
            red_flags.append({
                'type': 'MARGIN_COMPRESSION',
                'severity': 'HIGH',
                'message': 'Revenue growing but margins compressing (competitive pres
            })

    # Stock-Based Compensation Acceleration
    sbc_growth = financials['sbc'][-1] / financials['sbc'][-2] - 1
    if sbc_growth > 0.30:
        red_flags.append({
            'type': 'SBC_DILUTION',
            'severity': 'MEDIUM',
            'message': f'SBC growing {sbc_growth:.1%} (shareholder dilution accelerati
        })

    return red_flags
```

4. DCF Automation

```python
def calculate_dcf(financials, assumptions):
    """
    Automated DCF calculation
    """
    # Extract inputs
    current_fcf = financials['free_cash_flow'][-1]
    growth_rate = assumptions['growth_rate']
    years = assumptions['projection_years']
    discount_rate = assumptions['discount_rate']
    terminal_growth = assumptions['terminal_growth']

    # Project cash flows
    projected_fcf = []
    for year in range(1, years + 1):
        fcf = current_fcf * (1 + growth_rate) ** year
        pv = fcf / (1 + discount_rate) ** year
        projected_fcf.append({'year': year, 'fcf': fcf, 'pv': pv})

    # Terminal value
```

```python
        final_fcf = projected_fcf[-1]['fcf']
        terminal_value = final_fcf * (1 + terminal_growth) / (discount_rate - terminal_gr
        pv_terminal = terminal_value / (1 + discount_rate) ** years

        # Sum up
        pv_sum = sum([year['pv'] for year in projected_fcf])
        enterprise_value = pv_sum + pv_terminal

        # Convert to equity value
        equity_value = enterprise_value + financials['cash'] - financials['debt']
        per_share = equity_value / financials['shares_outstanding']

        # Margin of safety
        current_price = financials['current_price']
        margin_of_safety = (per_share - current_price) / per_share

        return {
            'enterprise_value': enterprise_value,
            'equity_value': equity_value,
            'value_per_share': per_share,
            'current_price': current_price,
            'margin_of_safety': margin_of_safety,
            'buy_price': per_share * 0.70,  # 30% MOS
            'projected_fcf': projected_fcf,
            'terminal_value': terminal_value
        }
```

LLM-Enhanced Analysis (RAG System)

Vector Database Rules:

Knowledge base entries for FAISS

```python
investing_rules = [
{
'rule_id': 'MOAT_001',
'category': 'Moat Analysis',
'content': 'Network effects create moats when value increases with each user. Examples:
Facebook social graph, Visa merchant network, eBay marketplace liquidity.'
},
{
```

```
'rule_id': 'MOAT_002',
'category': 'Moat Analysis',
'content': 'Switching costs create moats through integration depth, training requirements,
and data lock-in. Example: Enterprise software like SAP requires months to switch.'
},
{
'rule_id': 'MGMT_001',
'category': 'Management Quality',
'content': 'Analyze CEO letters for honesty. Good signs: admits mistakes, explains setbacks,
consistent messaging. Bad signs: blames externalities, changes metrics to hide problems,
promotes stock price.'
},
{
'rule_id': 'MGMT_002',
'category': 'Capital Allocation',
'content': 'ROIC is the truth serum of capital allocation. If ROIC < cost of capital,
management destroys value with each reinvestment. Check historical ROIC trends, not just
current year.'
},
{
'rule_id': 'RISK_001',
'category': 'Disruption Risk',
'content': 'Disruption warning signs: younger demographics abandoning product, margins
under pressure from new entrants, management dismissing new competitors. See
Blackberry (dismissed iPhone), Blockbuster (dismissed streaming).'
},
{
'rule_id': 'VAL_001',
'category': 'Valuation',
'content': 'Margin of Safety requires 30% discount minimum. This protects against:
estimation errors in DCF, unforeseen business deterioration, and market timing mistakes.'
},
{
'rule_id': 'VAL_002',
'category': 'DCF Execution',
'content': 'For DCF discount rate: use 9-10% for stable businesses, 12-15% for high-risk.
Terminal growth rate: 2-3% (GDP-like). Terminal multiple: 10x EBIT for stable, 15x for
growth.'
}
]
```

Query System:

```
def analyze_qualitative_feature(feature_name, company_text, vector_db):
    """
    Use RAG to analyze qualitative aspects
    """
    # Retrieve relevant investing principles
    query = f"How to analyze {feature_name} in a company"
    relevant_rules = vector_db.similarity_search(query, k=3)
```

```
# Build context for LLM
context = "\n".join([rule['content'] for rule in relevant_rules])

# LLM Prompt
prompt = f"""
```

You are a Value Investing Expert following the MoneyTalks philosophy.

RULES FROM COURSE:
{context}

TASK:
Analyze the following company information regarding '{feature_name}'.
Rate: STRONG / ADEQUATE / WEAK / CRITICAL
Provide specific evidence from the text.

COMPANY INFORMATION:
{company_text}

ANALYSIS:
"""

```
# Call LLM (conceptual)
# analysis = llm_api.complete(prompt)

return analysis
```

Excel Integration Schema

Workbook Structure:

Tabs:

1. Financials (Historical Data Entry)
2. By Operating Segment
3. Quarterly Statements
4. Course Principles (Rule Database)
5. Stock Analyzer (Automated Calculations)
6. Valuation Dashboard
7. Report Selector (Checkboxes)

Stock Analyzer Tab Design:

```
┌─────────────────────────────────────┐
│ STOCK ANALYZER │
│ │
│ Ticker: [] Date: [] │
```

```
| |
| ☑ Run Financial Health Check |
| ☑ Run ROIC Analysis |
| ☑ Run Red Flag Detection |
| ☑ Run DCF Valuation |
| ☑ Run Comparable Companies |
| |
| [ANALYZE] |
| |
| RESULTS: |
|  ┌──────────────────────────────────┐  |
| | Financial Health: 7/10 | |
| | ROIC 5Y Avg: 18.5% (GOOD) | |
| | Red Flags: 2 MEDIUM | |
| | DCF Value: $145 | |
| | Current Price: $98 | |
| | Margin of Safety: 32.4% | |
| | | |
| | VERDICT: BUY | |
|  └──────────────────────────────────┘  |
 └──────────────────────────────────────┘
```

Calculation Formulas (Excel/VBA):

' Example VBA for automated ROIC calculation
Function CalculateROIC(EBIT As Double, TaxRate As Double, _
Equity As Double, NetDebt As Double) As Double
Dim NOPAT As Double
Dim InvestedCapital As Double

```
    NOPAT = EBIT * (1 - TaxRate)
    InvestedCapital = Equity + NetDebt

    If InvestedCapital > 0 Then
        CalculateROIC = NOPAT / InvestedCapital
    Else
        CalculateROIC = 0
    End If
```

End Function

' Color coding based on ROIC
Sub ColorCodeROIC()
Dim ROIC As Double
Dim cell As Range

```
For Each cell In Range("ROIC_Results")
    ROIC = cell.Value

    If ROIC > 0.2 Then
        cell.Interior.Color = RGB(0, 255, 0) ' Green
    ElseIf ROIC > 0.15 Then
        cell.Interior.Color = RGB(255, 255, 0) ' Yellow
    ElseIf ROIC > 0.1 Then
        cell.Interior.Color = RGB(255, 200, 0) ' Orange
    Else
        cell.Interior.Color = RGB(255, 0, 0) ' Red
    End If
Next cell
```

End Sub

Advanced Topics {#advanced-topics}

Deep Value / Cigar Butts

Ben Graham's Original Strategy

Criteria:
Market Cap < (Current Assets - All Liabilities)

Or:
Market Cap < (2/3) × Current Assets

Modern Application:

Process:

1. Screen for P/B < 0.7
2. Verify assets are real (not goodwill)
3. Check for liquidation catalyst
4. Assess management incentives
5. Calculate downside protection

Risks:

- Value trap (business deteriorating)
- Management enrichment
- Assets worthless in reality
- Time opportunity cost

Historical Example:
Company: Struggling Retailer

- Market Cap: $50M
- Current Assets: $100M (inventory + receivables)
- Liabilities: $30M
- Net Current Asset Value: $70M

Margin of Safety: 28.6%

Catalyst: Potential liquidation or turnaround
Downside: Limited if assets are real
Upside: 40-100% if properly liquidated

Special Situations

Types:

1. Spin-offs
Characteristics:

- Parent company shareholders receive shares in spun entity
- Often forced selling (index funds, wrong fit)
- Illiquid initially
- Management incentives aligned

Example:
Parent Corp spins off Division X
→ Many parent shareholders don't want X
→ Indiscriminate selling
→ Creates opportunity

Research: What % of parent company shareholders will sell automatically?

2. Merger Arbitrage
Setup:
Company A to acquire Company B
B trades at $48
Offer price: $50 cash
Spread: $2 (4.2%)
Time to close: 3 months

Annualized Return: 16.8%

Risks:

- Deal breaks (regulatory, financing, material adverse change)
- Time delay
- Reduced spread

Due Diligence:
☐ Regulatory approval likelihood
☐ Financing secured

☐ Shareholder support
☐ Break-up fee

Working Capital Dynamics

Positive vs Negative Working Capital

Traditional (Capital Intensive):
Retailer:

- Buys inventory: Cash out
- Sells inventory: Cash in (later)
- Gap = Working capital need

Growth requires cash investment

Negative Working Capital (Float Model):
Spotify/Netflix:

- Customer pays: Cash in (immediate)
- Pay content owner: Cash out (later)
- Gap = Company holds cash

Growth generates cash!

Analysis Framework:
def analyze_working_capital(financials):
wc = financials['current_assets'] - financials['current_liabilities']
wc_pct_revenue = wc / financials['revenue']

```
# Calculate cash conversion cycle
dso = (financials['receivables'] / financials['revenue']) * 365
dio = (financials['inventory'] / financials['cogs']) * 365
dpo = (financials['payables'] / financials['cogs']) * 365


cash_cycle = dso + dio - dpo


if wc < 0 and cash_cycle < 0:
    return "FLOAT MODEL - Negative WC is strength"
elif wc < 0 and cash_cycle > 0:
    return "LIQUIDITY CONCERN - Negative WC is weakness"
else:
    return f"Standard Model - WC = {wc_pct_revenue:.1%} of revenue"
```

Sector-Specific Analysis

Technology/SaaS:
Key Metrics:

- Annual Recurring Revenue (ARR)
- Customer Acquisition Cost (CAC)
- Lifetime Value (LTV)
- LTV/CAC Ratio (should be >3x)
- Net Revenue Retention (>100% = expansion)
- Rule of 40: Growth% + Margin% >40

Consumer/Retail:
Key Metrics:

- Same-store sales growth
- Store-level economics
- Inventory turnover
- Lease commitments
- Brand strength (pricing power)

Financials (Banks):
Key Metrics:

- Net Interest Margin (NIM)
- Loan Loss Provisions
- Tier 1 Capital Ratio
- Return on Assets (ROA)
- Efficiency Ratio

Summary: The Complete Investment Process

Step-by-Step Workflow

Phase 1: Initial Screening (30 minutes)

1. Macrotrends quick review
   - Revenue trend (growing?)
   - Operating margin trend (stable/improving?)
   - Share count (buybacks or dilution?)
2. Circle of competence check
   - Do I understand this business?
   - Can I predict it in 5 years?
3. Quick valuation smell test
   - P/E, EV/EBIT compared to historicals
   - Obviously cheap or expensive?

Phase 2: Financial Analysis (3-4 hours)

1. Download 10-K, 10-Q, investor presentation
2. Read company description (10-K Item 1)
3. Build Excel model:

- 5 years historical financials
- By-segment if applicable
- Calculate margins, ROIC, FCF

4. Run automated checks:
- Financial health
- Red flags
- ROIC trends

Phase 3: Valuation (2-3 hours)

1. Build DCF:
- Project 5-10 years
- Calculate terminal value
- Run sensitivity analysis
2. Comparable companies:
- Find 3-5 similar businesses
- Calculate median multiples
- Cross-check with DCF
3. Reverse DCF:
- What does current price imply?
- Reasonable assumptions?

Phase 4: Qualitative Analysis (4-6 hours)

1. Moat analysis:
- Type of moat?
- Width/durability?
- Strengthening or weakening?
2. Management quality:
- Read CEO letters (3+ years)
- Review proxy statement
- Check insider transactions
- Analyze capital allocation history
3. Disruption risk:
- Could this be Blackberry?
- Competitive threats emerging?
- Technology shifts?
4. Industry research:
- Read competitor 10-Ks
- Industry reports
- Customer reviews (Glassdoor, Reddit)

Phase 5: Decision (1 hour)

1. Synthesis:
- Margin of Safety >30%?
- Thesis crystal clear?
- Risks understood and acceptable?
2. Position Sizing:
- Conviction level?
- Risk/reward ratio?
- Correlation to existing positions?

3. Decision:
   BUY / PASS / WATCH LIST

Phase 6: Monitoring (Quarterly)

1. Re-run DCF with new numbers
2. Check thesis still valid
3. Monitor competitive landscape
4. Review management commentary
5. Reassess margin of safety

References and Further Reading

Core Texts

1. **The Intelligent Investor** - Benjamin Graham (Chapters 8, 20)
2. **Security Analysis** - Graham & Dodd
3. **Berkshire Hathaway Letters** - Warren Buffett (1977-present)
4. **The Essays of Warren Buffett** - Lawrence Cunningham

Online Resources

1. **Base Hit Investing** - John Huber (Substack)
2. **Musings on Markets** - Aswath Damodaran
3. **Value Investors Club** (valueinvestorsclub.com)
4. **Seeking Alpha** - Mingran Wang

Tools

1. **Macrotrends.net** - Visual financial data
2. **SEC EDGAR** - Primary source documents
3. **TIKR Terminal** - Financial modeling
4. **InsiderScreener.com** - Insider trading tracking

Appendix: MoneyTalks Investing Checklist

Pre-Investment Checklist

Understanding:

- [ ] I understand how this business makes money
- [ ] I can explain the business to a 10-year-old
- [ ] I can predict this business in 5 years
- [ ] This is within my circle of competence

Quantitative:

- [ ] Positive operating cash flow for 3+ years
- [ ] ROIC > 15% (or improving trend)
- [ ] Debt/Equity < 1.0 (or appropriate for industry)
- [ ] Current Ratio > 1.2
- [ ] DCF shows >30% margin of safety

Qualitative:

- [ ] Economic moat identified and durable
- [ ] Management has skin in the game (ownership >5%)
- [ ] Management honest in communications
- [ ] Historical capital allocation competent
- [ ] No major disruption risk in next 5 years

Valuation:

- [ ] Multiple valuation methods converge
- [ ] Reverse DCF assumptions reasonable
- [ ] Trading below historical average multiples
- [ ] Margin of safety calculated conservatively

Risk:

- [ ] Downside scenario modeled
- [ ] Position size appropriate to conviction
- [ ] Exit criteria defined
- [ ] Portfolio correlation considered

Final:

- [ ] Written investment thesis (one page)
- [ ] Clear catalyst or patience justified
- [ ] Willing to hold 5+ years
- [ ] Can explain why Mr. Market is wrong