Value Investing

Week 2: Value Investing, Competitive Advantages

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What is Value Investing?

- Value Investing: Investing in cash flow generating securities in hopes of convergence with its intrinsic value
  - Intrinsic value will prevail over the long term, unlike short term fluctuations
  - Hopes in stock price movement without regard to intrinsic value is speculation
  - Good business at a great price or buying great business at good price?

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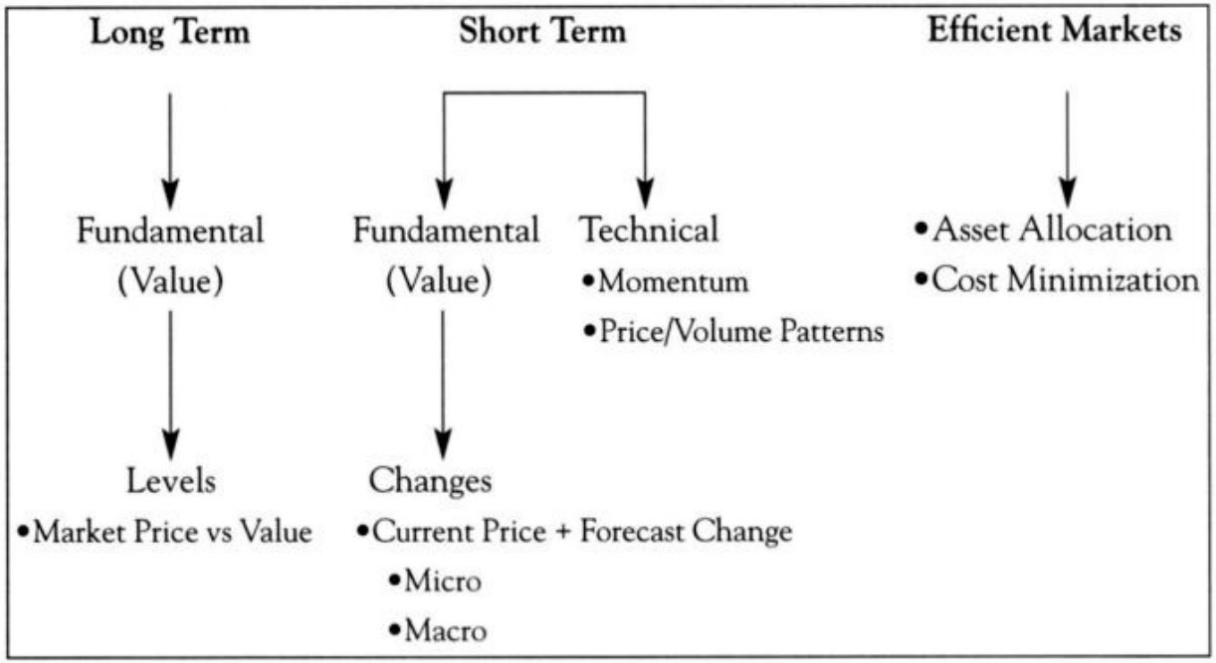

Arguments For and Against Value Approach

Pros:

- Higher upside, Freedom
- Returns are scalable
- Slightly underperform during upturns, greatly overperform during downturns

Cons:

- Must be contrarian
- You don't know when you'll outperform
- No flashy returns
- You will most likely be wrong in the short term

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What makes a Business Great?

- Great businesses have:
  - Resilience towards market swings
    - Recurring Revenue
    - Strong Moat
    - Pricing Power
  - ROIC > WACC
  - Strong management
  - Runway for growth

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Where Do We Find Great Businesses?

- Ugly industries
- Boring industries
- Small firms
- Troubled firms
- Industries that require specialized knowledge (Circle of Competence)

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When Does Growth Matter?

- ROIC vs. WACC
- Growth provides tangible value only when value created > investment needed for growth (CapEx, changes in NWC, R&D, etc.)
- Expanding into new markets only makes sense of CA carries over
- Most sustainable growth is pulled by demand (q), not company (p)
- Growth doesn't save a dying firm
  - First-mover advantages (?)

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Competitive Advantages

Competitive advantages allows a firm to beat its competition in pricing and prevents them from gaining market share.

Demand Advantages

- Customer captivity
  - Habit / Brand loyalty
  - Switching costs
  - Searching costs
- Network effect
- Temporary, demand (your customers) will change over time

Supply Advantages

- Lower input costs
- Proprietary technology (patents)
- Knowledge / expertise
- Also temporary
- Best in slow moving industries

Economies of Scale

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How are EoS Different From Competitive Advantages?

- Far longer lived and therefore far more valuable
  - Think Coca Cola

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When do EoS Matter?

- T-shirt manufacturer vs. Software company
  - Where EoS / scale does **not** matter: market in which all firms have equal access to customers and common cost structures

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Requirements for EoS

- Cost structure
  - In order to have economies of scale, cost structure must be mainly fixed, with low variable costs
  - T-shirt manufacturers cannot have economies of scale. Software company is 100% economies of scale
- Access to customers
  - If an entrant has equal access to customers as the incumbents have, it will be able to reach the incumbents' scale. For economies of scale to serve as a competitive advantage, then, they need to be coupled with some degree of incumbent customer captivity
- Examples of poorly defended: Japanese cars entering US market
- Examples of well defended: MSFT
- Works especially well in smaller markets
  - 1. No one dares enter market 2. If they do enter, incumbent and entrant would not have enough business

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Defending EoS

- As competitors' market share becomes larger, it realizes more economies of scale and simultaneously erodes those of the incumbent
- The best course is to establish dominance in a local market and then expand outward from it
- But not all niches are equally attractive. An attractive niche must be characterized by customer captivity, small size relative to the level of fixed costs, and the absence of vigilant, dominant competitors
- Defense mechanisms: 1. Passive 2. Anything that will shift costs away from variable to fixed. Examples of the second approach include:
  - CapEx for operational efficiency
  - Spending more on advertising campaigns
  - Investing more into R&D and product development
- Careful: mindlessly growing in markets where they were newcomers battling powerful incumbents hurts the company. Must stay within your areas of expertise and competitive advantage and localized EoS

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Size, Growth, and EoS

- Pure size is not the same thing as economies of scale, which comes from being able to spread fixed costs to a greater number of units than its rivals
  - The relevant market is the area in which fixed costs stay fixed. Distribution infrastructure, advertising expenditures, and store supervision expenses are largely fixed for each metropolitan area or regional cluster.
  - Network effect: customers gain by being part of densely populated networks, but the benefits and economies of scale extend only so far as the reach of the networks
- E.g. Aetna HMO has much larger subscriber base, but Oxford Health Plans dominate in NY. Think about TransAlta, ConEd, etc.

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Size, Growth, and EoS

- Growth of a market is generally the enemy of competitive advantages based on economies of scale
- As a market grows, fixed costs stay fixed but variable costs increase, making the cost structure more biased towards variable costs and thus eroding economies of scale
- E.g. automobile market has grown so large that many competitors have reached a size at which they are no longer burdened by EoS disadvantage

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Scale Economies Shared

- Business model that shares the benefits of EoS with customers, typically offering lower prices to gain long-term market share
  - Companies grow through giving more back
  - Amazon / Costco
  - Counter-intuitive actions whereby profit or growth is seemingly unnecessarily sacrificed in pursuit of the mission
    - Rockefeller example
- Steadfast, cultural pursuit of a sacred mission

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Scale Economies Shared

- "Customer is leased, not owned"
- Organizations should orient around a sustainable competitive advantage and find people that value it

Customers will want the lowest cost

Customers will want speed

Customers will want transparency

Customers will want the best all-round user experience

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Scale Economies Shared

"Our judgment is that relentlessly returning efficiency improvements and scale economies to customers in the form of lower prices creates a virtuous cycle that leads over the long term to a much larger dollar amount of free cash flow, and thereby to a much more valuable Amazon.com."

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Bottom Line

Pricing Power + Recurring Revenue + Strong BS

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Value Investing

Week 3: Management & Corporate Finance

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Recap of Last Class

- Value investing
- Growth
- Competitive Advantages
- Economies of Scale
- Scale Economies Shared

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Roadmap of This Week's Class

1. Roles of Management
2. Capital Structure Issues
3. Capital Allocation
4. Operations Management
5. Strategy

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1. Roles of Management

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3 Jobs of a CEO

1. Capital Structure & Corporate Finance
2. Operations Management
3. Investor Relations

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2. Capital Structure & Corporate Finance

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Effect of Corporate Taxes

- Debt financing provides a tax advantage for corporations
- Interest on debt is tax deductible, while dividends and retained earnings are not
- Thus, corporation can save on taxes by exchanging equity for debt.

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Example

EBIT	$1000
Interest Expense	0
Pretax Income	1000
Taxes	340
Net Income (After Tax)	$ 660

EBIT	$1000
Interest Expense	400
Pretax Income	600
Taxes	204
Net Income (After Tax)	$ 396

- Equity holders now get 396 each year and debt holders get a total of 400
- Total of 796, compared to 660 when the firm was not levered.
- 136$ of value has been created, due to a reduction in taxes of $136.
- Tax savings have been created from 400$ of interest expense tax deduction. (0.34*400 = 136)

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Converting Increase in Cash Flows to Increase in Value

- *PV (DTS) = T_c*D*r_D / r_D = T_c*D*
- *Tc = corporate tax rate*
- *D = debt*
- *R_D = cost of debt*
- **assuming firm expects to borrow permanently*

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Overall Tax Advantage of Debt

- We are assuming that the debt issued by the firm was low enough that the firm would be paying taxes and enjoy the full amount of tax shields in the future.
- But as the firm issues more debt, it becomes less likely that the firm will be able to receive the full tax shields because the interest expense eats into the firm's operating profits.

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Incentive Problems

- Given the tax advantage of debt, companies *should* have more leverage than what we observe today.
- The explanation can be found in incentive problems and signaling.

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Agency Costs of Debt – Risk Shifting

- Managers have control over the investments undertaken by the firm. When debt represents a substantial part of the firm's capital structure, managers can use their power to choose riskier projects and thus expropriate from debt holders.

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Example

- Assume project that generates $100 next period with 100% probability. Financed with:
  - Debt = $90
  - Equity = $10
- Another project becomes available: $150 with 50% probability and 0 with 50% probability.
  - This project is inferior; PV = 75 (150*50%) as opposed to 100 (100*100%)

	Current Investment	Risky Investment
Debt	90	45
Equity	10	30
Total	100	75

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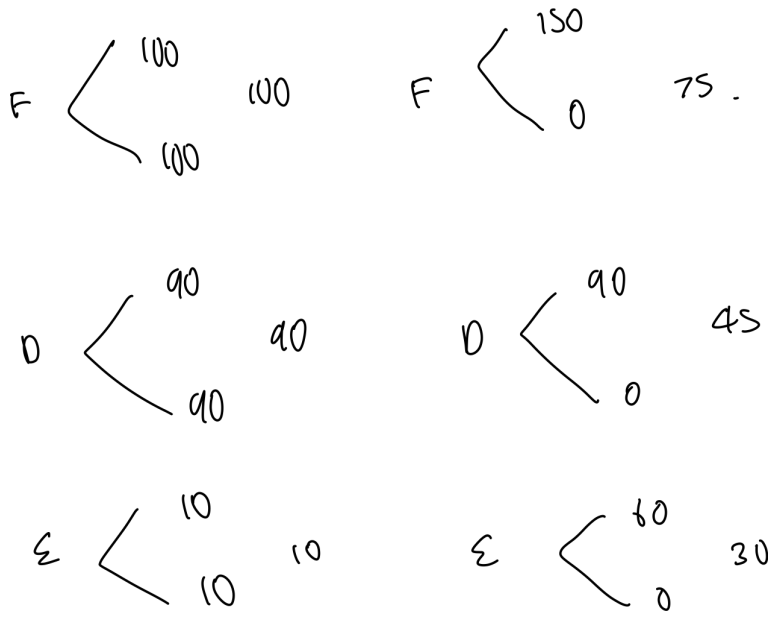

Value of Equity (Management) has increased!
Management benefits – 20, at the expense of debt holders – 45
Deadweight loss of 25.
In conclusion: Debt results in inefficient behavior that reduces value of firm.

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Agency Costs of Debt – Debt Overhang

- Opposite of previous issue: good investments arise that are low in risk may help debt holders more than equity holders. Consequently, highly levered firms may not undertake good, low risk investment opportunities if financing for them must come from investors junior to existing debtholders.

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Example

- Currently: Project that generates 200 with 50% probability and 100 with 50% probability.
  - Face value of debt: 150
  - Market value of debt: 125 = (.5*150+.5*100)
  - Market value of equity: 25 = (0.5*50+0)
  - Total value of firm: 150
- New investment that requires financing of 50 today that generates 60 tomorrow.
  - Now let's examine what happens when the 50 is financed through debt or equity:

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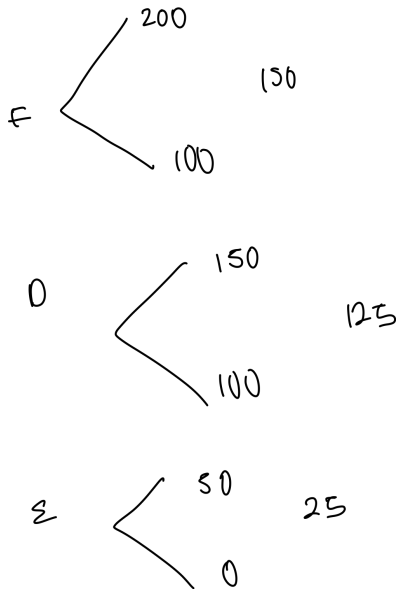
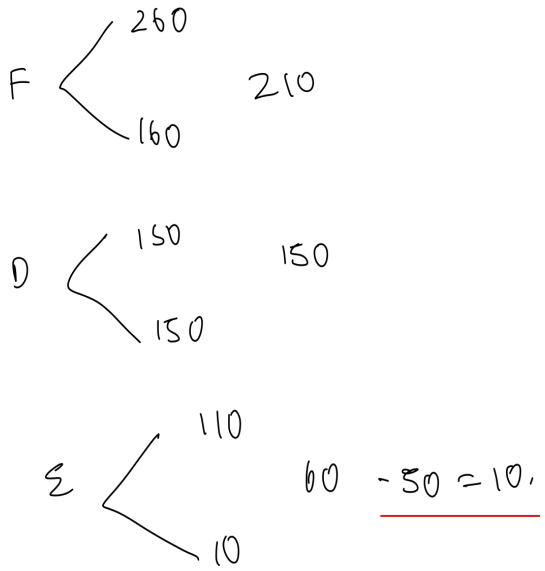
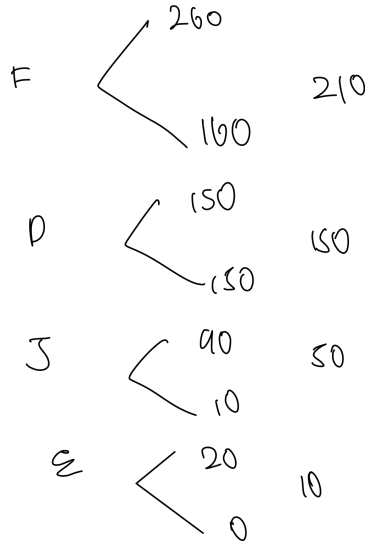
Current:



Equity:



Debt:



As long as the funding must come from investors junior to the existing debt holders, the value of the existing equity position will be reduced from 25 to 10. Consequently, this attractive project will not be undertaken – despite the fact it should. Hence, debt may incentivize managers to underinvest in good projects.

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Agency Costs of Equity

1. Diminished managerial ownership
    1. Effectively, reducing their wealth's sensitivity to the wealth of the firm.
2. Free Cash Flow to the firm is increased
    1. Debt forces cash flow generated by the firm to be disgorged to investors
    2. More cash under discretion of selfish managers

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Mitigating Agency Costs

- Agency Costs of Equity
  - Concentrated shareholders
  - Board of directors
  - Executive compensation packages
  - Threat of takeover – firms with high cash flow more attractive candidate for LBOs
  - Reputation
- Agency Costs of Debt
  - Restrict issuance of additional debt
    - Leverage ratio, interest coverage, tangible assets to long-term debt
  - Restrict dividends
  - Restrict disposition of assets (reducing collateral)
    - Secured debt, mandates for maintaining assets, restrictions on asset sales

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3. Capital Allocation

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Capital Allocation

- Centralize
- Concentrate in areas with highest returns and core competencies
- Expansion / M&A / Dividends / Repurchases / Pay down debt
- Current financial results are often the result of prior investments

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Dividend Policy

- Not paying out dividends → investors are compensated via capital gains
- Dividends are taxed at income tax rate (higher), therefore tax disadvantaged
  - But dividends reduce the need for selling shares, reducing transaction fees (not enough to overcome first problem)
- So why dividends?
  - Positive signaling
  - Except for high growth firms which may need additional capital to fund growth, dividends / increasing dividends send positive signal because maintaining dividends is costly (dividends are **sticky**).
    - Dividends increase stock price, but reducing dividends will likely lead to greater loss than gain from paying out dividends in the first place.

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Special Dividends

- Open market repurchases:
  - Taxed less, but takes a longer time
  - For most cases most efficient unless shares are overpriced
  - Remaining shareholders post-repurchase now own higher share of the firm's equity
- Dutch auction
  - Takes less time than an open market repurchase
  - Less expensive than fixed price tender
  - More expensive than an open market repurchase
- Fixed price tender
  - For when management wants to buy shares quickly but is looking to send the most positive signal possible
    - Most expensive (works by paying % premium on current stock pric)

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4. Operations Management

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Operations Management

- Cost focused
  - Lavish and expensive headquarters
  - Get the *feel* for management
- Decentralized operations
  - Eliminate bureaucracy
    - Decisions made by those closest to the problem
  - Yet make sure that goals are being maintained
  - Learn from customers – shared economies of scale
  - Mustn't be afraid to shrink operations – size often brings sluggishness
  - Leverage is to be used, but carefully
  - "If it ain't broke, continuously improve it"

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5. Strategy

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Strategy

- "A leader's most important responsibility is identifying the biggest challenges to forward progress & devising a coherent/cohesive approach to overcoming them"
  - Diagnose Issue
  - Guiding Policy
    - Exploit Competitive Advantages
  - Set of Coherent Actions
- Deliberate strategy
  - Good strategy / bad strategy
- Emergent strategy
  - Result of day-to-day operations
  - Value / culture

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Great management in complex industry < mid management in simple industry.

- Peter Lynch

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Value Investing

Week 5: Valuation I

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What is Valuation?

- Valuation: Finding out the true value of an asset

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Why Do We Value Companies?

- The use of valuation models in investment decisions are based upon:
  - A perception that markets are inefficient
  - An assumption about how and when these inefficiencies will get corrected

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Intrinsic vs. Relative Valuation

- Intrinsic:
  - Cash flows, growth, and risk
  - DCF
- Relative
  - More so "pricing" rather than actual "valuation"
  - Pricing: what others are willing to play
  - Multiples, Precedents, Liquidation, etc.

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Valuation Methodologies

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DCF

- Finding the present value of future cash flows
- DCF may appear complicated, but it is comprised of two big parts:
  - Cash Flows
  - Discount Rate
- Garbage in, Garbage out

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Multiples

- Very simplistic DCF, our assumptions are "baked in"
- A form of pricing
- What is needed
  - Similar companies (geography, size, industry)
  - Standardized measure of price (EV/EBITDA)
- Will fail if market is not efficient
- As we will see later: good way to sanity check intrinsic valuation

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Precedent Transactions

- Using multiples from past transactions of previous companies
- Used in PE
- No bueno: Inflated valuations
- Acquisitions are few and far between

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Liquidation

- Assets being sold right now
- Used for bankruptcy
- Net-net approach (Benjamin Graham)
  - Valued current, liquid assets as value of company
  - Not a good long term investing strategy

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Certainty (Buffet)

- Discounts CFs using 30 year risk free rate
  - Matches the certainty of cash flows
- Discount using a growing perpetuity: CF / (r-g)

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Asset / Earnings Power Value

- Find replacement cost of each asset
  - Requires industry expertise
- If industry is viable: replacement cost, non-viable: liquidation
- Not all assets are listed on balance sheet (intangibles, for instance)
- Earnings Power Value
  - Essentially just a perpetuity – isolate consistent and sustainable CFs
  - Try not to extrapolate trends
  - Eliminate growth costs (Growth CapEx, R&D, Marketing, etc.)
- If CA exists, EPV > AV, and vice versa

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Dividend Discount / FCFE

- Exactly what it sounds like
- Theoretically the most sound: investor's only CFs are from dividends
  - Assumes that selling out and liquidation will never occur
  - Ignores repurchases
- FCFE
  - Net income, cost of equity
  - Used for FIs

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Price Implied Expectations / Reverse DCF

- A firm's stock is the most reliable signal of the market's expectations
- Price doesn't technically reflect CFs, rather the expected CFs
- Objective: find the assumptions implicit in the current stock price.
  - Start with current stock price'
  - Sensitize around a range of assumptions
  - Find discount rate that sets our DCF model equal to the current market value

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Sum of the Parts

- More so an approach rather than a valuation method
- Break business down into its segments
  - Need to obtain financial statement for each unit you're valuing
  - Very difficult to do with publicly disclosed statements
    - Common in PE & IB where all financials are provided

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DCF

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Unlevered vs. Levered Free Cash Flow

- FCF: CFO – CapEx
  - Tells you how much cash flow the company's core business is generating on a recurring, predictable basis
- UFCF (FCFF)
  - Cash flow available to ALL investors
  - Net Operating Profit After Taxes (EBIT * (1-tax rate)) + D&A - increase in Working Capital – CapEx
  - You don't start with CFO or net income because you must exclude net interest expense
- LFCF
  - Cash flow available to EQUITY investors
  - Net income + D&A – increase in working capital – CapEx
  - We start with net income because we include net interest expense

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Discount Rate

- Your discount rate **must** match your cash flows
  - WACC <> UFCF
  - Cost of Equity <> LFCF
- WACC = % Debt * Cost of Debt * (1-Tax Rate) + % Equity * Cost of Equity
  - Cost of Equity = Risk free rate + Beta * Equity Risk Premium
  - Cost of Debt
    - Risk free rate + spread on company's bond rating
    - Or YTM on company's bond
  - Risk free rate: 10-year treasury yield (4.25%)
  - Effective tax rate (ideally grow this to marginal tax rate in end of forecast period)

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EV, QV

- Enterprise value: value of the company's *operating* assets to all investors
- Equity value: value of the company's assets to equity investors
- Why?
  - Equity can be raised internally (net income) and externally (issuances)
  - Debt can only be raised externally
  - Company uses external capital for operating assets
  - Equity can be raised internally and externally, so the company could use it for both operating and non-operating assets

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EV to QV

- We discussed earlier that using UFCF yields the Enterprise Value of a company. How do we arrive at QV and obtain the implied share price?
  - Broadly, EV = QV + other investor groups – non-operating assets
  - EV = QV + Debt – Cash
  - Expanded:
    - EV = QV + Debt + Preferred Stock + Finance Leases + Underfunded Pensions – (Cash + Short Term Investments + Equity investments, assets held for sale, assets associated with discontinued operations)
    - Do not subtract Goodwill because it is still part of an acquisition
- Does capital structure (e.g. issuance of debt) change Enterprise Value?
  - Debt is non-operating

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Example Model: Rev Build

Hilton Worldwide Holdings

Properties Build
USD in millions

Active Scenario:	Base									
Fiscal year end date	12/31/19	12/31/20	12/31/21	12/31/22	12/31/23	12/31/24	12/31/25	12/31/26	12/31/27	12/31/28
Fiscal year	**2019A**	**2020A**	**2021A**	**2022A**	**2023A**	**2024F**	**2025F**	**2026F**	**2027F**	**2028F**
Owned and Leased	20,557	19,400	18,151	17,612	17,491	17,371	17,251	17,133	17,015	16,898
% Growth		*(5.6%)*	*(6.4%)*	*(3.0%)*	*(0.7%)*	*(0.7%)*	*(0.7%)*	*(0.7%)*	*(0.7%)*	*(0.7%)*
% Total	*2.1 %*	*1.9 %*	*1.7 %*	*1.6 %*	*1.5 %*	*1.4 %*	*1.3 %*	*1.2 %*	*1.1 %*	*1.1 %*
Managed	221,615	225,905	234,640	244,037	250,472	259,239	269,608	280,392	290,206	300,363
% Growth		*1.9 %*	*3.9 %*	*4.0 %*	*2.6 %*	*3.5 %*	*4.0 %*	*4.0 %*	*3.5 %*	*3.5 %*
% Total	*22.8 %*	*22.2 %*	*21.8 %*	*21.6 %*	*21.2 %*	*20.5 %*	*20.1 %*	*19.6 %*	*19.3 %*	*19.0 %*
Franchised	729,608	773,982	822,000	865,781	914,974	988,172	1,057,344	1,131,358	1,196,977	1,266,401
% Growth		*6.1 %*	*6.2 %*	*5.3 %*	*5.7 %*	*8.0 %*	*7.0 %*	*7.0 %*	*5.8 %*	*5.8 %*
% Total	*75.1 %*	*75.9 %*	*76.5 %*	*76.8 %*	*77.3 %*	*78.1 %*	*78.7 %*	*79.2 %*	*79.6 %*	*80.0 %*
Total Rooms	**971,780**	**1,019,287**	**1,074,791**	**1,127,430**	**1,182,937**	**1,264,781**	**1,344,204**	**1,428,883**	**1,504,198**	**1,583,663**
% Growth (Net Unit Growth)		*4.9%*	*5.4%*	*4.9%*	*4.9%*	*6.9%*	*6.3%*	*6.3%*	*5.3%*	*5.3%*
Change		47,507	55,504	52,639	55,507	81,844	79,422	84,680	75,315	79,465

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Example Model: Rev Build

Fiscal year end date	12/31/19	12/31/20	12/31/21	12/31/22	12/31/23	12/31/24	12/31/25	12/31/26	12/31/27	12/31/28
Fiscal year	**2019A**	**2020A**	**2021A**	**2022A**	**2023A**	**2024F**	**2025F**	**2026F**	**2027F**	**2028F**
Systemwide										
Systemwide Rooms	971,780	1,019,287	1,074,791	1,127,430	1,182,937	1,264,781	1,344,204	1,428,883	1,504,198	1,583,663
Occupancy Rate	0.76	0.40	0.57	0.68	0.72	0.73	0.75	0.75	0.75	0.75
% Growth		*(46.8%)*	*41.9%*	*18.0%*	*6.4%*	*2.0%*	*2.0%*	*1.0%*	*0.0%*	*0.0%*
ADR	144.79	114.03	128.82	151.01	158.62	161.79	165.03	168.33	170.01	171.71
% Growth		*(21.2%)*	*13.0%*	*17.2%*	*5.0%*	*2.0%*	*2.0%*	*2.0%*	*1.0%*	*1.0%*
Systemwide RevPAR	110	46	74	102	114	118	123	127	128	130
Systemwide Room Revenue	38,877	17,097	28,907	41,946	49,174	54,700	60,484	66,236	70,425	74,886
Franchised										
Franchised Rooms	729,608	773,982	822,000	865,781	914,974	988,172	1,057,344	1,131,358	1,196,977	1,266,401
Franchised Room Revenue	29,189	12,982	22,108	32,211	38,035	42,737	47,576	52,444	56,041	59,884
Franchise and Licensing Fees	1,681	945	1,493	2,068	2,370	2,671	3,092	3,671	3,923	4,192
% Of Total Franchise Room Revenue	*5.8%*	*7.3%*	*6.8%*	*6.4%*	*6.2%*	*6.3%*	*6.5%*	*7.0%*	*7.0%*	*7.0%*
% Growth		*(43.8%)*	*58.0%*	*38.5%*	*14.6%*	*12.7%*	*15.8%*	*18.7%*	*6.9%*	*6.9%*
Management - Base and Incentive										
Managed Rooms	221,615	225,905	234,640	244,037	250,472	259,239	269,608	280,392	290,206	300,363
Managed Room Revenue	8,866	3,789	6,311	9,079	10,412	11,212	12,131	12,998	13,587	14,203
Base Management Fees	332	123	176	294	342	368	398	427	446	467
% Of Total Managed Room Revenue	*3.7%*	*3.2%*	*2.8%*	*3.2%*	*3.3%*	*3.3%*	*3.3%*	*3.3%*	*3.3%*	*3.3%*
Incentive Fees	230	38	98	196	274	295	319	342	358	374
% of Base Management Fees	*69.3%*	*30.9%*	*55.7%*	*66.7%*	*80.1%*	*80.1%*	*80.1%*	*80.1%*	*80.1%*	*80.1%*
Owned and Leased										
Owned and Leased Rooms	20,557	19,400	18,151	17,612	17,491	17,371	17,251	17,133	17,015	16,898
Owned and Leased RevPAR	150	43	68	113	132	137	149	160	168	170
Systemwide RevPAR Multiple	*1.37x*	*0.95x*	*0.93x*	*1.11x*	*1.16x*	*1.16x*	*1.21x*	*1.26x*	*1.31x*	*1.31x*
Room Revenue	1,125	308	452	726	841	869	939	1,001	1,044	1,047
% of Total O&L Revenue	*79.1%*	*73.1%*	*75.5%*	*67.5%*	*67.6%*	*67.6%*	*67.6%*	*67.6%*	*67.6%*	*67.6%*
Other O&L Revenue	297	113	146	350	403	416	450	479	500	502
Owned and Leased Revenue	1,422	421	598	1,076	1,244	1,285	1,389	1,480	1,544	1,548
COGS	(1,254)	(620)	(679)	(999)	(1,141)	(1,133)	(1,125)	(1,118)	(1,110)	(1,102)
COGS Per Owned and Leased Room	0.06	0.03	0.04	0.06	0.07	0.07	0.07	0.07	0.07	0.07
Gross Profit - Owned and Leased	$ 168	$ (199)	$ (81)	$ 77	$ 103	$ 152	$ 264	$ 362	$ 434	$ 446
% Margin	*11.8%*	*47.3%*	*13.5%*	*7.2%*	*8.3%*	*11.8%*	*19.0%*	*24.5%*	*28.1%*	*28.8%*
Other Revenue										
Other (Vendor Rebate Arrangements)	101	73	79	102	178	178	178	178	178	178
% Growth		*(27.7%)*	*8.2%*	*29.1%*	*74.5%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Owned and Leased	$ 1,422	$ 421	$ 598	$ 1,076	$ 1,244	$ 1,285	$ 1,389	$ 1,480	$ 1,544	$ 1,548
% Of Total Revenue	*37.8%*	*26.3%*	*24.5%*	*28.8%*	*28.2%*	*26.8%*	*25.8%*	*24.3%*	*23.9%*	*22.9%*
Managed and Franchised	$ 2,243	$ 1,106	$ 1,767	$ 2,558	$ 2,986	$ 3,334	$ 3,810	$ 4,440	$ 4,727	$ 5,032
% Of Total Revenue	*59.6%*	*69.1%*	*72.3%*	*68.5%*	*67.7%*	*69.5%*	*70.9%*	*72.8%*	*73.3%*	*74.5%*
Revenue	**$ 3,766**	**$ 1,600**	**$ 2,444**	**$ 3,736**	**$ 4,408**	**$ 4,798**	**$ 5,377**	**$ 6,098**	**$ 6,448**	**$ 6,758**
COGS	(1,254)	(620)	(679)	(999)	(1,141)	(1,133)	(1,125)	(1,118)	(1,110)	(1,102)
Gross Profit	**$ 2,512**	**$ 980**	**$ 1,765**	**$ 2,737**	**$ 3,267**	**$ 3,665**	**$ 4,252**	**$ 4,981**	**$ 5,338**	**$ 5,656**
% Margin	*66.7%*	*61.3%*	*72.2%*	*73.3%*	*74.1%*	*76.4%*	*79.1%*	*81.7%*	*82.8%*	*83.7%*

PARAGON GLOBAL INVESTMENTS

Example Model: NWC

Net Working Capital										
Fiscal year	2019A	2020A	2021A	2022A	2023A	2024F	2025F	2026F	2027F	2028F
Fiscal year end date	12/31/19	12/31/20	12/31/21	12/31/22	12/31/23	12/31/24	12/31/25	12/31/26	12/31/27	12/31/28
Current Operating Asset Detail										
Accounts Receivable	1,261	771	1,068	1,327	1,487	1,676	1,940	2,303	2,461	2,630
Prepaids and other	294	213	376	334	327	369	427	507	541	578
Current Operating Assets	1,555	984	1,444	1,661	1,814	2,044	2,367	2,810	3,003	3,208
Current Operating Liability Detail										
Accounts payable	303	224	274	368	457	492	532	570	596	623
Accrued expenses	554	404	514	555	592	717	869	1,053	1,277	1,547
Deferred revenue	332	370	350	433	502	566	655	778	831	888
Other current liabilities	1,512	1,207	1,687	1,865	2,016	2,272	2,631	3,123	3,337	3,566
Current Operating Liabilities	2,701	2,205	2,825	3,221	3,567	4,047	4,687	5,524	6,041	6,624
Net Working Capital	**(1,146)**	**(1,221)**	**(1,381)**	**(1,560)**	**(1,753)**	**(2,003)**	**(2,320)**	**(2,714)**	**(3,038)**	**(3,416)**
% of Revenue	68.2%	129.2%	92.5%	75.4%	74.0%	75.0%	75.0%	73.9%	77.5%	81.5%
Turnover Days Inputs										
Balance Sheet Turnover Days										
Accounts Receivable	274 days	298 days	261 days	234 days	229 days	229 days	229 days	229 days	229 days	229 days
Accounts Payable	333 days	665 days	568 days	457 days	488 days	488 days	488 days	488 days	488 days	488 days
Other Inputs										
% of Revenue										
Prepaids and Others	17.5%	22.5%	25.2%	16.2%	13.8%	13.8%	13.8%	13.8%	13.8%	13.8%
Other Non-current assets	22.6%	54.7%	44.5%	37.7%	27.5%	27.5%	27.5%	27.5%	27.5%	27.5%
Accrued Expenses	33.0%	42.8%	34.4%	26.8%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
Deferred Revenue	19.8%	39.2%	23.4%	20.9%	21.2%	21.2%	21.2%	21.2%	21.2%	21.2%
Other Current Liabilities	89.9%	127.7%	113.0%	90.2%	85.1%	85.1%	85.1%	85.1%	85.1%	85.1%
Income Statement Metrics										
Revenue	1,681	945	1,493	2,068	2,370	2,671	3,092	3,671	3,923	4,192
COGS	332	123	176	294	342	368	398	427	446	467
Common Stock & APIC										
Beginning of Period						10,971	11,073	11,192	11,333	11,483
Stock Based Compensation					169	102	119	141	150	161
% of Revenue					*7.1%*	*3.8%*	*3.8%*	*3.8%*	*3.8%*	*3.8%*
End of Period					**10,971**	**11,073**	**11,192**	**11,333**	**11,483**	**11,644**
Treasury Stock										
Beginning of Period					(6,040)	(8,393)	(10,746)	(13,099)	(15,452)	(17,805)
New Repurchases					(2,353)	(2,353)	(2,353)	(2,353)	(2,353)	(2,353)
End of Period					**(8,393)**	**(10,746)**	**(13,099)**	**(15,452)**	**(17,805)**	**(20,158)**
Retained Earnings										
Beginning of Period						(4,207)	(2,652)	(689)	1,715	4,327
Net income					1,151	1,651	2,073	2,536	2,752	2,927
Dividends					(158)	(96)	(111)	(132)	(141)	(150)
% of Revenue					*6.7%*	*3.6%*	*3.6%*	*3.6%*	*3.6%*	*3.6%*
End of Period					**(4,207)**	**(2,652)**	**(689)**	**1,715**	**4,327**	**7,104**

PARAGON GLOBAL INVESTMENTS

Example Model: OpEx

Profit and Loss										
Fiscal year	2019A	2020A	2021A	2022A	2023A	2024F	2025F	2026F	2027F	2028F
Fiscal year end date	12/31/19	12/31/20	12/31/21	12/31/22	12/31/23	12/31/24	12/31/25	12/31/26	12/31/27	12/31/28
Revenue	3,766	1,600	2,444	3,736	4,408	4,798	5,377	6,098	6,448	6,758
Cost of Goods Sold (Owned and Leased)	(1,254)	(620)	(679)	(999)	(1,141)	(1,133)	(1,125)	(1,118)	(1,110)	(1,102)
Gross Profit	**2,512**	**980**	**1,765**	**2,737**	**3,267**	**3,665**	**4,252**	**4,981**	**5,338**	**5,656**
Selling, general, and administrative	(441)	(311)	(405)	(382)	(408)	(446)	(487)	(532)	(581)	(635)
Impairment losses	-	(258)	-	-	(38)	-	-	-	-	-
Net other expenses	9	(101)	(52)	(60)	(112)	(112)	(71)	(71)	(71)	(71)
Net other expenses from managed and franchi	(77)	(397)	(110)	(39)	(337)	(110)	(110)	(110)	(110)	(110)
Depreciation and amortization	(346)	(331)	(188)	(162)	(147)	(168)	(134)	(137)	(129)	(135)
Operating Profit	**1,657**	**(418)**	**1,010**	**2,094**	**2,225**	**2,829**	**3,450**	**4,130**	**4,447**	**4,705**
Interest expense	(414)	(429)	(397)	(415)	(464)	(402)	(402)	(402)	(402)	(402)
Other non-operating (expense) / income	1	(77)	(53)	55	(69)	-	-	-	-	-
Pretax profit	**1,244**	**(924)**	**560**	**1,734**	**1,692**	**2,427**	**3,048**	**3,728**	**4,045**	**4,303**
Taxes	(358)	204	(153)	(477)	(541)	(776)	(975)	(1,192)	(1,293)	(1,376)
Tax Rate	29%	22%	27%	28%	32%	32%	32%	32%	32%	32%
Net Income	**886**	**(720)**	**407**	**1,257**	**1,151**	**1,651**	**2,073**	**2,536**	**2,752**	**2,927**
Opex Breakout										
Fixed expenses										
Impairment losses	-	258	-	-	38	-	-	-	-	-
Other expenses	72	60	38	60	112	112	71	71	71	71
Total Fixed Expenses	**72**	**318**	**38**	**60**	**150**	**112**	**71**	**71**	**71**	**71**
Fixed Expenses as % Growth										
Impairment losses		*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Other expenses		*(16.7%)*	*(36.7%)*	*57.9%*	*86.7%*	*0.0%*	*(36.7%)*	*0.0%*	*0.0%*	*0.0%*
Variable Expenses										
General and administrative	441	311	405	382	408	446	487	532	581	635
Net other expenses from managed and franch	77	397	110	39	337	110	110	110	110	110
Total Variable Expenses	**518**	**708**	**515**	**421**	**745**	**556**	**597**	**642**	**691**	**745**
Variable Expenses % of Revenue										
General and administrative	*11.7%*	*19.4%*	*16.6%*	*10.2%*	*9.3%*	*9.3%*	*9.3%*	*9.3%*	*9.3%*	*9.3%*
Net other expenses from managed and franch	*2.0%*	*24.8%*	*4.5%*	*1.0%*	*7.6%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Total Opex excl. D&A	**590**	**1,026**	**553**	**481**	**895**	**668**	**668**	**713**	**762**	**816**

PARAGON GLOBAL INVESTMENTS

Example Model: D&A, CapEx

Hilton Worldwide Holdings

Fixed Assets
USD in millions

Fiscal year end date	12/31/19	12/31/20	12/31/21	12/31/22	12/31/23	12/31/24	12/31/25	12/31/26	12/31/27	12/31/28
USD millions	**2019A**	**2020A**	**2021A**	**2022A**	**2023A**	**2024F**	**2025F**	**2026F**	**2027F**	**2028F**
Revenue	3,766	1,600	2,444	3,736	4,408	4,798	5,377	6,098	6,448	6,758
PP&E - Beginning of period		1,247	1,118	999	942	1,000	1,000	1,000	1,000	1,000
Capital Expenitures	81	46	35	39	151	96	81	76	64	68
% Revenue	*2.2%*	*2.9%*	*1.4%*	*1.0%*	*3.4%*	*2.0%*	*1.5%*	*1.3%*	*1.0%*	*1.0%*
Depreciation	(60)	(57)	(53)	(46)	(43)	(96)	(81)	(76)	(64)	(68)
PP&E - End of Period	**1,247**	**1,118**	**999**	**942**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**
Depreciation as % of CapEx	*(74.1%)*	*(123.9%)*	*(151.4%)*	*(117.9%)*	*(28.5%)*	*(100.0%)*	*(100.0%)*	*(100.0%)*	*(100.0%)*	*(100.0%)*
Intangible Assets - Beginning of Period			5,823	5,835	5,888	6,083	6,125	6,198	6,281	6,369
Purchases of Intangible Assets	124	46	44	63	96	114	127	144	153	160
% Revenue	*3.3%*	*2.9%*	*1.8%*	*1.7%*	*2.2%*	*2.4%*	*2.4%*	*2.4%*	*2.4%*	*2.4%*
Amortization			(135)	(116)	(104)	(72)	(54)	(61)	(64)	(68)
Intangible Assets - End of Period		**5,823**	**5,835**	**5,888**	**6,083**	**6,125**	**6,198**	**6,281**	**6,369**	**6,462**
D&A unrelated to PP&E										
% of Revenue	*0.0%*	*0.0%*	*5.5%*	*3.1%*	*2.4%*	*1.5%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*
Total D&A	**346**	**331**	**188**	**162**	**147**	**168**	**134**	**137**	**129**	**135**

PARAGON GLOBAL INVESTMENTS

Example Model: DCF

Hilton Worldwide Holdings

Discounted Cash Flow Analysis
USD in millions

Latest closing share price	206.32
Latest closing share price date	8/10/24
Latest fiscal year end date	12/31/23
Latest quarter end date	3/31/24
Shares outstanding (millions)	252.2
Currency	USD
Active Scenario:	Base

DCF Assumptions	
WACC	9.47%
Perpetuity Growth Rate	3.00%
Valuation Date	8/10/24
Tax Rate	23.00%

	12/31/19	12/31/20	12/31/21	12/31/22	12/31/23	12/31/24	12/31/25	12/31/26	12/31/27	12/31/28
Forecasts	FY19A	FY20A	FY21A	FY22A	FY23A	FY24F	FY25F	FY26F	FY27F	FY28F
Total Revenue	3,766	1,600	2,444	3,736	4,408	4,798	5,377	6,098	6,448	6,758
% Growth	*n/a*	*(58%)*	*53%*	*53%*	*18%*	*9%*	*12%*	*13%*	*6%*	*5%*
COGS (Owned and Leased)	(1,254)	(620)	(679)	(999)	(1,141)	(1,133)	(1,125)	(1,118)	(1,110)	(1,102)
% of Revenue	*33%*	*39%*	*28%*	*27%*	*26%*	*24%*	*21%*	*18%*	*17%*	*16%*
Total OpEx (Excluding D&A)	(590)	(1,026)	(553)	(481)	(895)	(668)	(668)	(713)	(762)	(816)
% of Revenue	*16%*	*64%*	*23%*	*13%*	*20%*	*14%*	*12%*	*12%*	*12%*	*12%*
EBITDA	1,922	(46)	1,212	2,256	2,372	2,997	3,584	4,268	4,576	4,840
% margin	*51%*	*-3%*	*50%*	*60%*	*54%*	*62%*	*67%*	*70%*	*71%*	*72%*
EBIT	1,576	(377)	1,024	2,094	2,225	2,829	3,450	4,130	4,447	4,705
% margin	*42%*	*-24%*	*42%*	*56%*	*50%*	*59%*	*64%*	*68%*	*69%*	*70%*
Tax on EBIT	(454)	83	(280)	(576)	(711)	(651)	(793)	(950)	(1,023)	(1,082)
Tax Rate	29%	22%	27%	28%	32%	23%	23%	23%	23%	23%
NOPAT	**1,122.46**	**(293.77)**	**744.23**	**1,517.97**	**1,513.58**	**2,178.27**	**2,656.25**	**3,180.33**	**3,424.23**	**3,622.75**
Depreciation and Amortization	346	331	188	162	147	168	134	137	129	135
Changes in Net Working Capital		75	160	179	193	250	317	394	324	377
Capital Expenditures		(81)	(46)	(35)	(39)	(151)	(96)	(81)	(76)	(64)
% of revenue		*5%*	*2%*	*1%*	*1%*	*3%*	*2%*	*1%*	*1%*	*1%*
Unlevered Free Cash Flows (UFCF)		**31.23**	**1,046.23**	**1,823.97**	**1,814.58**	**2,445.13**	**3,012.22**	**3,630.91**	**3,800.77**	**4,070.80**
% Growth			*n/a*	*74%*	*(1%)*	*35%*	*23%*	*21%*	*5%*	*7%*
Net Working Capital	(1,146.00)	(1,221.00)	(1,381.00)	(1,560.00)	(1,753.00)	(2,002.94)	(2,320.42)	(2,714.46)	(3,038.26)	(3,415.63)
as a % of revenue	*30%*	*76%*	*57%*	*42%*	*40%*	*42%*	*43%*	*45%*	*47%*	*51%*

Net Debt	
Gross debt and equivalents	
Debt (incl. cap leases)	10,910
Noncontrolling interests	16
Non operating assets	
Cash and equivalents	(1,346)
Equity investments	-
Net Debt	**9,580**

Shares Outstanding	
Basic shares	252
Restricted stock	1
Options	3
Covertible debt	-
Convertible preferred stock	-
Net diluted shares outstanding	**256**

Enterprise Value (EV)	FY24F	FY25F	FY26F	FY27F	FY28F
Year fraction (since entry)	0.39	1.39	2.39	3.39	4.39
Discount Factor	0.97	0.88	0.81	0.74	0.67
Present Value	**2,360**	**2,656**	**2,925**	**2,796**	**2,736**

EV - Perpetuity Growth Method

Terminal Value	64,766
PV of Terminal Value	43,511
Sum of PV	13,473
Enterprise Value	**56,984**
Equity Value	
Cash and Cash Equivalents	1,346
Noncontrolling interests	(16)
Equity Investments	-
Debt	(10,006)
Preferred Stock	-
Underfunded Pensions	(260)
Capital Leases	(904)
Assets Held for Sale	-
Equity Value	**47,144**
Shares Outstanding	256
Implied Share Price	184
Current Share Price	206
% Upside	-11%

EV Sensitivity Analysis: Perpetuity Growth Method

		Equity value per share					
		PGR					
	$ 184.02	2.00%	2.50%	3.00%	3.50%	4.00%
	10.47%	136.48	129.03	129.03	136.48	154.37
	9.97%	126.75	120.19	120.19	126.75	142.35
WACC	9.47%	126.75	120.19	120.19	126.75	142.35
	9.97%	118.05	112.24	112.24	118.05	131.74
	10.47%	103.15	98.51	98.51	103.15	113.89

EV Sensitivity Analysis: Exit Multiples Method

		Equity value per share					
		Exit Multiple					
	$ 238.65	16.39x	16.89x	17.39x	17.89x	18.39x
	10.47%	216.30	210.11	210.11	216.30	228.69
	9.97%	211.74	205.67	205.67	211.74	223.89
WACC	9.47%	211.74	205.67	205.67	211.74	223.89
	9.97%	207.29	201.33	201.33	207.29	219.19
	10.47%	198.68	192.96	192.96	198.68	210.13

PARAGON GLOBAL INVESTMENTS

Example Model: Comps

Data sourced from S&P CapIQ | Unit = USD Millions

Name	Ticker	venue	L3Y Revenue Growth	L5Y Revenue Growth	3Y CAGR	5Y CAGR	LTM GP	LTM EBITDA	LTM EBIT	LTM GP Margins	LTM EBITDA Margins	LTM EBIT Margins	LTM EBITDA / Interest	Net Debt / LTM EBITDA	EV / LTM Revenue	EV / LTM EBITDA
Hilton Worldwide Holdings Inc.	NYSE:HLT		39.68%	4.29%	13.23%	0.86%	3,484	2,488	2,345	75.4%	53.8%	50.7%	5.1x	4.1x	13.2x	24.6x
United States and Canada																
Marriott International, Inc.	NasdaqGS:MAR		40.75%	4.15%	13.58%	0.83%	5,290	4,273	3,925	81.8%	66.1%	60.7%	7.2x	3.2x	11.6x	17.5x
Hyatt Hotels Corporation	NYSE:H		105.21%	20.97%	35.07%	4.19%	4,470	694	318	68.1%	10.6%	4.8%	5.3x	3.2x	2.4x	22.7x
Wyndham Hotels & Resorts, Inc	NYSE:WH		10.49%	-0.33%	3.50%	-0.07%	945	602	526	68.1%	43.4%	37.9%	5.0x	3.9x	5.9x	13.7x
Other																
InterContinental Hotels Group Pl	LSE:IHG		27.92%	2.77%	9.31%	0.55%	1,906	1,013	986	49.8%	26.5%	25.8%	7.7x	2.7x	4.6x	17.4x
H World Group Limited	NasdaqGS:HTHT		29.23%	16.97%	9.74%	3.39%	1,108	892	700	35.3%	28.4%	22.3%	31.2x	4.4x	4.1x	14.5x
Average															5.7x	17.2x
Median															4.6x	17.4x
25th Percentile															3.3x	14.1x
75th Percentile															8.8x	20.1x

EV - Exit Multiples Method	
Terminal Year EBITDA	4,840
Exit EBITDA Multiple	17.39x
Exit Terminal Value	84,168
PV of Exit Terminal Value	56,545
Sum of PV	13,473
Enterprise Value	**70,019**
Equity Value	
Cash and Cash Equivalents	1,346
Noncontrolling interests	(16)
Equity Investments	-
Debt	(10,006)
Preferred Stock	-
Underfunded Pensions	(260)
Capital Leases	(904)
Assets Held for Sale	-
Equity Value	**60,179**
Shares Outstanding	252
Implied Share Price	239
Current Share Price	206
% Upside	*16%*

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Example Model: Sensitivity Analysis

EV Sensitivity Analysis: Perpetuity Growth Method

		Equity value per share				
		PGR				
$	184.02	2.00%	2.50%	3.00%	3.50%	4.00%
WACC	10.47%	136.48	129.03	129.03	136.48	154.37
	9.97%	126.75	120.19	120.19	126.75	142.35
	9.47%	126.75	120.19	120.19	126.75	142.35
	9.97%	118.05	112.24	112.24	118.05	131.74
	10.47%	103.15	98.51	98.51	103.15	113.89

EV Sensitivity Analysis: Exit Multiples Method

		Equity value per share				
		Exit Multiple				
$	238.65	16.39x	16.89x	17.39x	17.89x	18.39x
WACC	10.47%	216.30	210.11	210.11	216.30	228.69
	9.97%	211.74	205.67	205.67	211.74	223.89
	9.47%	211.74	205.67	205.67	211.74	223.89
	9.97%	207.29	201.33	201.33	207.29	219.19
	10.47%	198.68	192.96	192.96	198.68	210.13

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Final Comments

- Remember: Garbage in, Garbage out!
- Valuing financial institutions and insurance companies are a whole different ballgame
  - Financials are volatile, assets are difficult to value, and working capital is important
- Sanity check your forecasts
  - If it diverges from the share price, there must be a reason
  - Use multiple methods, should arrive at a similar number
- Beware of unnecessary complexit y

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