

V. Valuing Financial Service Companies

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Existing assets are usually financial assets or loans, often marked to market. Earnings do not provide much information on underlying risk.

Defining capital expenditures and working capital is a challenge. Growth can be strongly influenced by regulatory limits and constraints. Both the amount of new investments and the returns on these investments can change with regulatory changes.

What is the value added by growth assets?

What are the cashflows from existing assets?

Preferred stock is a significant source of capital.

What is the value of equity in the firm?

How risky are the cash flows from both existing assets and growth assets?

For financial service firms, debt is raw material rather than a source of capital. It is not only tough to define but if defined broadly can result in high financial leverage, magnifying the impact of small operating risk changes on equity risk.

When will the firm become a mature firm, and what are the potential roadblocks?

In addition to all the normal constraints, financial service firms also have to worry about maintaining capital ratios that are acceptable to regulators. If they do not, they can be taken over and shut down.

CIB Egypt in December 2015

Valuation in Egyptian Pounds

ROE = 42.48%

Retention
Ratio =
75.25%

Dividends

EPS = 4.04 EGP
* Payout Ratio 24.75%
DPS = 1.00 EGP

Expected Growth

75.25% *
42.48% = 31.96%

$g = 10\%$: ROE = 25% (=Cost of equity)
Beta = 0.81
Payout = $(1 - 10/25) = .60$

	1	2	3	4	5	6	7	8	9	10
Expected Growth Rate	31.96%	31.96%	31.96%	31.96%	31.96%	27.57%	23.18%	18.79%	14.39%	10.00%
Earnings per share	5.33 ج.م	7.04 ج.م	9.28 ج.م	12.25 ج.م	16.17 ج.م	20.63 ج.م	25.41 ج.م	30.18 ج.م	34.52 ج.م	37.97 ج.م
Payout ratio	24.75%	24.75%	24.75%	24.75%	24.75%	31.80%	38.85%	45.90%	52.95%	60.00%
Dividends per share	1.32 ج.م	1.74 ج.م	2.30 ج.م	3.03 ج.م	4.00 ج.م	6.56 ج.م	9.87 ج.م	13.85 ج.م	18.28 ج.م	22.78 ج.م
Cost of Equity	23.25%	23.25%	23.25%	23.25%	23.25%	23.25%	23.25%	23.25%	23.25%	23.25%
Cumulative Cost of Equity	123.25%	151.90%	187.21%	230.73%	284.37%	350.48%	431.95%	532.37%	656.13%	808.66%
Present Value	1.07 ج.م	1.15 ج.م	1.23 ج.م	1.31 ج.م	1.41 ج.م	1.87 ج.م	2.29 ج.م	2.60 ج.م	2.79 ج.م	2.82 ج.م

Terminal Value
= $EPS_6 * Payout / (r - g)$
= $(37.97 * .6) / (.2325 - .10) = 189.20$

Value of Equity per
share = PV of
Dividends &
Terminal value =
41.93 EGP

Discount at Cost of Equity

Forever

Cost of Equity
 $10.53\% + 0.81 (15.70\%) = 23.25\%$

In December 2015, CIB
was trading at 36 EGP
per share

Riskfree Rate:
In EGP
10.53%

US \$ risk free rate (2.27%)
adjusted for diff inflation
 $(1.0227) * (1.097 / 1.015) - 1$

+

0.81

x

Equity Risk Premium
15.7%

Average Beta for Banks

100% in Egypt

Lesson 1: Financial service companies are opaque...

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- With financial service firms, we enter into a Faustian bargain. They tell us very little about the quality of their assets (loans, for a bank, for instance are not broken down by default risk status) but we accept that in return for assets being marked to market (by accountants who presumably have access to the information that we don't have).
- In addition, estimating cash flows for a financial service firm is difficult to do. So, we trust financial service firms to pay out their cash flows as dividends. Hence, the use of the dividend discount model.
- During times of crises or when you don't trust banks to pay out what they can afford to in dividends, using the dividend discount model may not give you a "reliable" value.

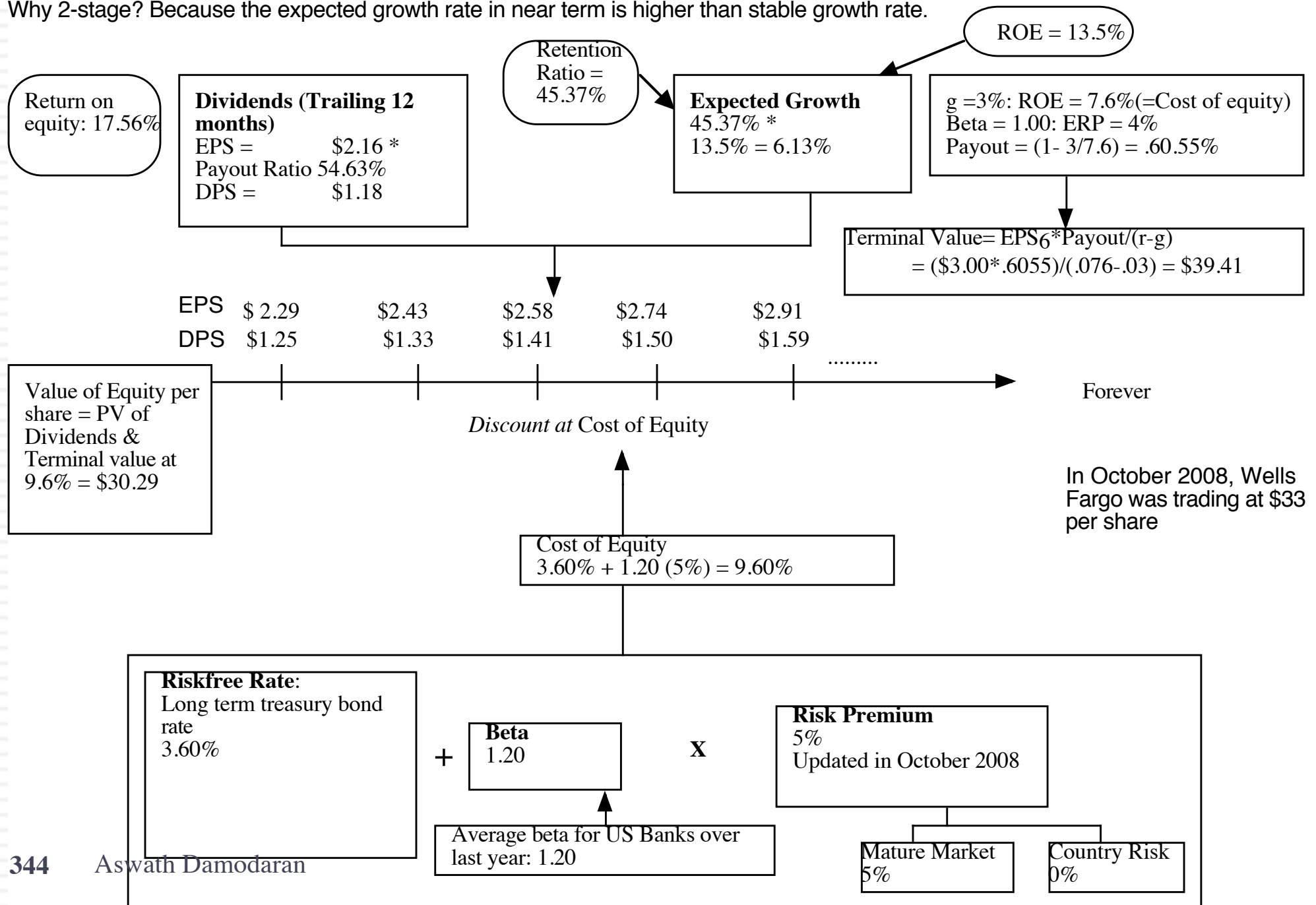
2c. Wells Fargo: Valuation on October 7, 2008

Assuming that Wells will have to increase its capital base by about 30% to reflect tighter regulatory concerns. ($.1756/1.3 = .135$)

Rationale for model

Why dividends? Because FCFE cannot be estimated

Why 2-stage? Because the expected growth rate in near term is higher than stable growth rate.



Lesson 2: For financial service companies, book value matters...

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- The book value of assets and equity is mostly irrelevant when valuing non-financial service companies. After all, the book value of equity is a historical figure and can be nonsensical. (The book value of equity can be negative and is so for more than a 1000 publicly traded US companies)
- With financial service firms, book value of equity is relevant for two reasons:
 - Since financial service firms mark to market, the book value is more likely to reflect what the firms own right now (rather than a historical value)
 - The regulatory capital ratios are based on book equity. Thus, a bank with negative or even low book equity will be shut down by the regulators.
- From a valuation perspective, it therefore makes sense to pay heed to book value. In fact, you can argue that reinvestment for a bank is the amount that it needs to add to book equity to sustain its growth ambitions and safety requirements:
 - $FCFE = \text{Net Income} - \text{Reinvestment in regulatory capital (book equity)}$

Deutsche Bank: A Crisis Valuation (October 2016)

Risk adjusted assets grows at inflation rate of 1% a year forever.

Tier 1 capital ratio increases to 15.67%, the 75th percentile for all banks

Expected DOJ fine of \$10 billions lower Tier 1 capital today

Common Equity increases in tandem with Tier 1 capital

Cost of equity starts at 10.2% (75th percentile of banks) & decreases after year 5 to 9.44% (median across banks).

	Current	1	2	3	4	5	6	7	8	9	10
Risk Adjusted Assets	\$ 445,570	\$ 450,026	\$ 454,526	\$ 459,071	\$ 463,662	\$ 468,299	\$ 472,982	\$ 477,711	\$ 482,488	\$ 487,313	\$ 492,186
Tier 1 Capital Ratio	12.41%	13.74%	13.95%	14.17%	14.38%	14.60%	14.81%	15.03%	15.24%	15.46%	15.67%
Tier 1 Capital (Risk Adjusted Assets * Tier 1 Capital Ratio)	\$55,282	\$61,834	\$63,427	\$65,045	\$66,690	\$68,361	\$70,059	\$71,784	\$73,537	\$75,317	\$77,126
Change in regulatory capital (Tier 1)		\$6,552	\$1,593	\$1,619	\$1,645	\$1,671	\$1,698	\$1,725	\$1,753	\$1,780	\$1,809
Book Equity	\$64,609	\$71,161	\$72,754	\$74,372	\$76,017	\$77,688	\$79,386	\$81,111	\$82,864	\$84,644	\$86,453
Expected ROE	-13.70%	-7.18%	-2.84%	0.06%	1.99%	5.85%	6.568%	7.286%	8.004%	8.722%	9.440%
Net Income (Book Equity * ROE)	\$ (8,851)	\$ (5,111)	\$ (2,065)	\$ 43	\$ 1,512	\$ 4,545	\$ 5,214	\$ 5,910	\$ 6,632	\$ 7,383	\$ 8,161
- Investment in Regulatory Capital		\$ 6,552	\$ 1,593	\$ 1,619	\$ 1,645	\$ 1,671	\$ 1,698	\$ 1,725	\$ 1,753	\$ 1,780	\$ 1,809
FCFE		\$ (11,663)	\$ (3,658)	\$ (1,576)	\$ (133)	\$ 2,874	\$ 3,516	\$ 4,185	\$ 4,880	\$ 5,602	\$ 6,352
Terminal value of equity											\$87,317
Present value		\$ (10,583)	\$ (3,012)	\$ (1,178)	\$ (90)	\$ 1,768	\$ 1,966	\$ 2,129	\$ 2,262	\$ 2,370	\$ 36,207
Cost of equity	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%	10.048%	9.896%	9.744%	9.592%	9.440%
Cumulative Cost of equity		1.1020	1.2144	1.3383	1.4748	1.6252	1.7885	1.9655	2.1570	2.3639	2.5871
Value of equity today =	\$31,838.74										
Number of shares outstanding =	1386.00										
DCF Value per share =	\$ 22.97										
Probability of equity wipeout	10.00%										
Adjusted value per share =	\$ 20.67										
Stock price on October 3, 2016 =	\$ 13.33										

Value per share adjusted for probability of catastrophic failure (bailout) resulting in complete loss of equity.

Return on equity increases to 5.85% (25th percentile of banks) in year 5 and 9.44% (cost of equity) in year 10

VI. Valuing Companies with “intangible” assets

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If capital expenditures are miscategorized as operating expenses, it becomes very difficult to assess how much a firm is reinvesting for future growth and how well its investments are doing.

What is the value added by growth assets?

What are the cashflows from existing assets?

The capital expenditures associated with acquiring intangible assets (technology, human capital) are mis-categorized as operating expenses, leading to incorrect accounting earnings and measures of capital invested.

How risky are the cash flows from both existing assets and growth assets?

It can be more difficult to borrow against intangible assets than it is against tangible assets. The risk in operations can change depending upon how stable the intangible asset is.

When will the firm become a mature firm, and what are the potential roadblocks?

Intangible assets such as brand name and customer loyalty can last for very long periods or dissipate overnight.

Lesson: Accounting rules are cluttered with inconsistencies...

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- If we start with accounting first principles, capital expenditures are expenditures designed to create benefits over many periods. They should not be used to reduce operating income in the period that they are made, but should be depreciated/amortized over their life. They should show up as assets on the balance sheet.
- Accounting is consistent in its treatment of cap ex with manufacturing firms, but is inconsistent with firms that do not fit the mold.
 - With pharmaceutical and technology firms, R&D is the ultimate cap ex but is treated as an operating expense.
 - With consulting firms and other firms dependent on human capital, recruiting and training expenses are your long term investments that are treated as operating expenses.
 - With brand name consumer product companies, a portion of the advertising expense is to build up brand name and is the real capital expenditure. It is treated as an operating expense.

Exhibit 11.1: Converting R&D expenses to R&D assets - Amgen

Step 1: Determining an amortizable life for R & D expenses. ①

How long will it take, on an expected basis, for research to pay off at Amgen? Given the length of the approval process for new drugs by the Food and Drugs Administration, we will assume that this amortizable life is 10 years.

Step 2: Capitalize historical R&D expense

Year	R&D Expense	Unamortized portion	Amortization this year
Current	3030.00	1.00	3030.00
-1	3266.00	0.90	2939.40
-2	3366.00	0.80	2692.80
-3	2314.00	0.70	1619.80
-4	2028.00	0.60	1216.80
-5	1655.00	0.50	827.50
-6	1117.00	0.40	446.80
-7	864.00	0.30	259.20
-8	845.00	0.20	169.00
-9	823.00	0.10	82.30
-10	663.00	0.00	0.00
		\$13283.60	\$1,694.10

④
 Current year's R&D expense = Cap ex = \$3,030 million
 R&D amortization = Depreciation = \$ 1,694 million
 Unamortized R&D = Capital invested (R&D) = \$13,284 million

Step 3: Restate earnings, book value and return numbers

	Unadjusted	Adjusted for R&D	Comments
Net Income	\$4,196	$4,196 + 3030 - 1694 = \$ 5,532$	Add current year's R&D and subtract R&D amortization
Book value of equity	\$17,869	$17,869 + 13,284 = \$ 31,153$	Add unamortized R&D from prior years
Return on Equity	$\frac{4196}{17869} = 23.48\%$	$\frac{5532}{31153} = 17.75\%$	Return on equity drops when book equity is augmented by R&D, even though net income rises.
Pre-tax Operating Income	\$5,594	$5,594 + 3030 - 1694 = \$ 6,930$	Add current year's R&D and subtract R&D amortization
Book value of invested capital	\$21,985	$21,985 + 13,284 = \$ 35,269$	Add unamortized R&D from prior years
Pre-tax Return on Capital	$\frac{5594}{21985} = 25.44\%$	$\frac{6930}{35269} = 19.65\%$	Return on capital drops when capital is augmented by R&D, even though operating income rises.

Cap Ex = Acc net Cap Ex(255) +
Acquisitions (3975) + R&D (2216)

Current Cashflow to Firm

EBIT(1-t) = $7336(1-.28) = 6058$
 - Nt CpX = 6443
 - Chg WC 37
 = FCFF - 423
 Reinvestment Rate = $6480/6058$
 = 106.98%
 Return on capital = 16.71%

10. Amgen: Status Quo

Reinvestment Rate
60%

Expected Growth
in EBIT (1-t)
 $.60 \times .16 = .096$
9.6%

Return on Capital
16%

Stable Growth

$g = 4\%$; Beta = 1.10;
Debt Ratio = 20%; Tax rate = 35%
Cost of capital = 8.08%
ROC = 10.00%;
Reinvestment Rate = $4/10 = 40\%$

Terminal Value₁₀ = $7300 / (.0808 - .04) = 179,099$

First 5 years

Growth decreases
gradually to 4%

Year	1	2	3	4	5	6	7	8	9	10
EBIT	\$9,221	\$10,106	\$11,076	\$12,140	\$13,305	\$14,433	\$15,496	\$16,463	\$17,306	\$17,998
EBIT (1-t)	\$6,639	\$7,276	\$7,975	\$8,741	\$9,580	\$10,392	\$11,157	\$11,853	\$12,460	\$12,958
- Reinvestment	\$3,983	\$4,366	\$4,785	\$5,244	\$5,748	\$5,820	\$5,802	\$5,690	\$5,482	\$5,183
= FCFF	\$2,656	\$2,911	\$3,190	\$3,496	\$3,832	\$4,573	\$5,355	\$6,164	\$6,978	\$7,775

Term Yr
18718
12167
4867
7300

Cost of Capital (WACC) = $11.7\% (0.90) + 3.66\% (0.10) = 10.90\%$

Debt ratio increases to 20%
Beta decreases to 1.10

On May 1, 2007,
Amgen was trading
at \$ 55/share

Cost of Equity
11.70%

Cost of Debt
 $(4.78\% + .85\%)(1-.35)$
= 3.66%

Weights
E = 90% D = 10%

Riskfree Rate:
Riskfree rate = 4.78%

+

Beta
1.73

x

Risk Premium
4%

Unlevered Beta for
Sectors: 1.59

D/E = 11.06%

Lesson 2: And fixing those inconsistencies can alter your view of a company and affect its value

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	No R&D adjustment	R&D adjustment
EBIT	\$5,071	\$7,336
Invested Capital	\$25,277	\$33,173
ROIC	14.58%	18.26%
Reinvestment Rate	115.68%	106.98%
Value of firm	\$58,617	\$95,497
Value of equity	\$50,346	\$87,226
Value/share	\$42.73	\$74.33

VII. Valuing cyclical and commodity companies

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Company growth often comes from movements in the economic cycle, for cyclical firms, or commodity prices, for commodity companies.

What is the value added by growth assets?

What are the cashflows from existing assets?

Historical revenue and earnings data are volatile, as the economic cycle and commodity prices change.

How risky are the cash flows from both existing assets and growth assets?

Primary risk is from the economy for cyclical firms and from commodity price movements for commodity companies. These risks can stay dormant for long periods of apparent prosperity.

When will the firm become a mature firm, and what are the potential roadblocks?

For commodity companies, the fact that there are only finite amounts of the commodity may put a limit on growth forever. For cyclical firms, there is the peril that the next recession may put an end to the firm.

Lesson 1: With “macro” companies, it is easy to get lost in “macro” assumptions...

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- With cyclical and commodity companies, it is undeniable that the value you arrive at will be affected by your views on the economy or the price of the commodity.
- Consequently, you will feel the urge to take a stand on these macro variables and build them into your valuation. Doing so, though, will create valuations that are jointly impacted by your views on macro variables and your views on the company, and it is difficult to separate the two.
- The best (though not easiest) thing to do is to separate your macro views from your micro views. Use current market based numbers for your valuation, but then provide a separate assessment of what you think about those market numbers.

Lesson 2: Use probabilistic tools to assess value as a function of macro variables...

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- If there is a key macro variable affecting the value of your company that you are uncertain about (and who is not), why not quantify the uncertainty in a distribution (rather than a single price) and use that distribution in your valuation.
- That is exactly what you do in a Monte Carlo simulation, where you allow one or more variables to be distributions and compute a distribution of values for the company.
- With a simulation, you get not only everything you would get in a standard valuation (an estimated value for your company) but you will get additional output (on the variation in that value and the likelihood that your firm is under or over valued)

Shell: A "Oil Price" Neutral Valuation: March 2016

Revenue calculated from prevailing oil price of \$40/barrel in March 2016
 Revenue = $39992.77 + 4039.40 \times \40
 = \$201,569

Compounded revenue growth of 3.91% a year, based on Shell's historical revenue growth rate from 2000 to 2015

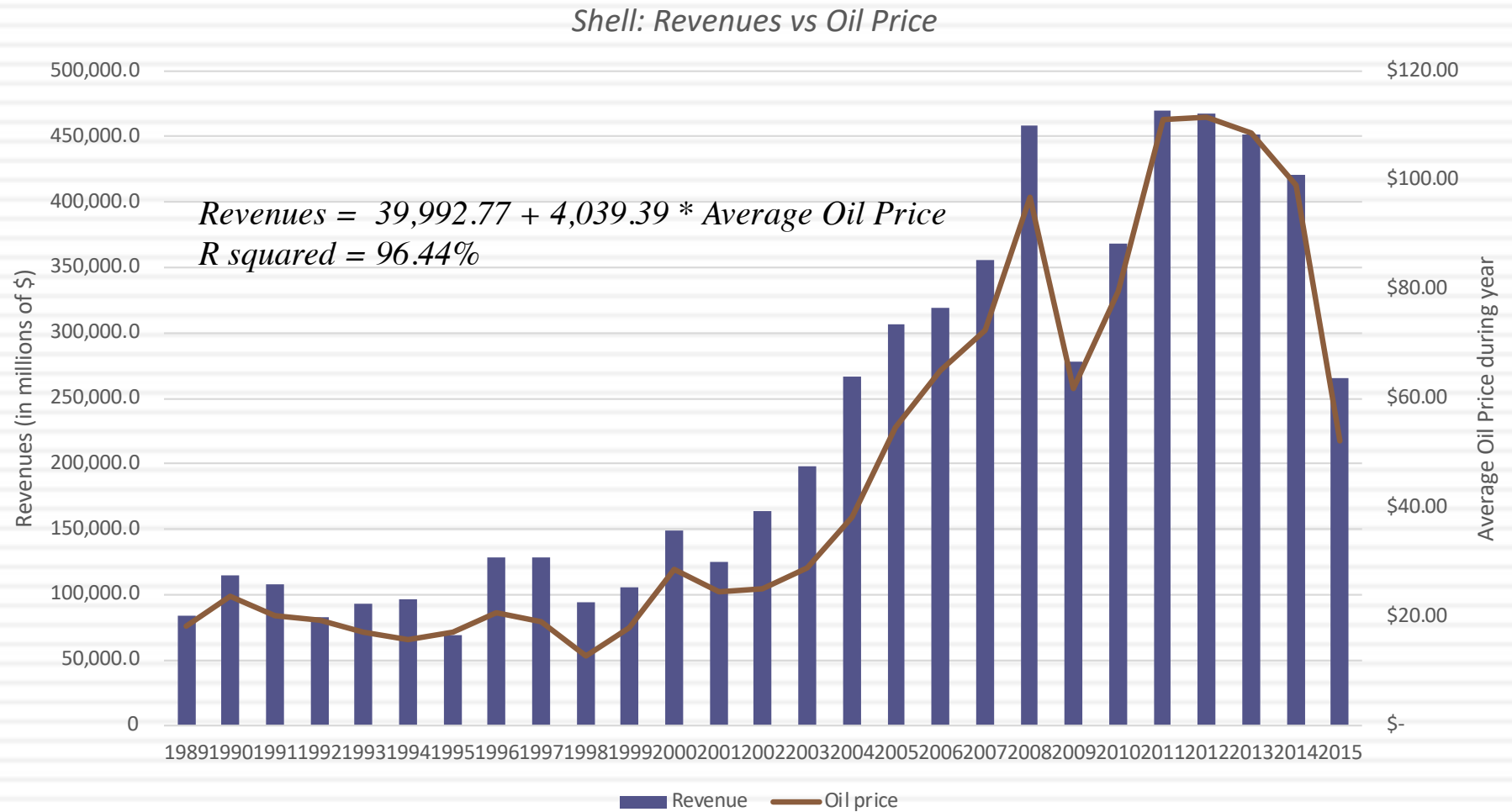
Operating margin converges on Shell's historical average margin of 9.35% from 200-2015

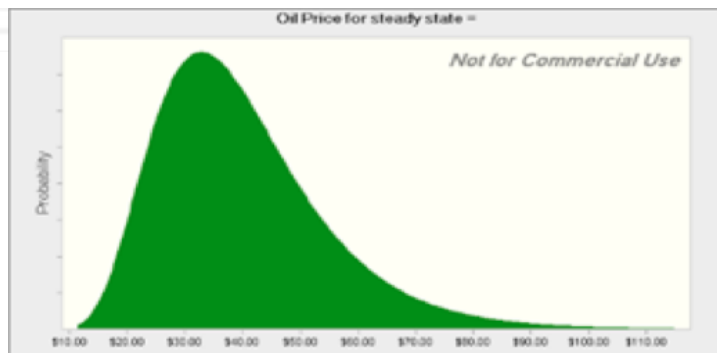
Return on capital reverts and stays at Shell's historic average of 12.37% from 200-2015

	Base Year	1	2	3	4	5	Terminal Year
Revenues	\$ 201,569	\$ 209,450	\$ 217,639	\$ 226,149	\$ 234,991	\$ 244,180	\$ 249,063
Operating Margin	3.01%	6.18%	7.76%	8.56%	8.95%	9.35%	9.35%
Operating Income	\$ 6,065.00	\$ 12,942.85	\$ 16,899.10	\$ 19,352.39	\$ 21,040.39	\$ 22,830.80	\$ 23,287.41
Effective tax rate	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%
AT Operating Income	\$ 4,245.50	\$ 9,060.00	\$ 11,829.37	\$ 13,546.68	\$ 14,728.27	\$ 15,981.56	\$ 16,301.19
+ Depreciation	\$ 26,714.00	\$ 27,759	\$ 28,844	\$ 29,972	\$ 31,144	\$ 32,361	
- Cap Ex	\$ 31,854.00	\$ 33,099	\$ 34,394	\$ 35,738	\$ 37,136	\$ 38,588	
- Chg in WC		\$ 472.88	\$ 491.37	\$ 510.58	\$ 530.55	\$ 551.29	
FCFF		\$ 3,246.14	\$ 5,788.19	\$ 7,269.29	\$ 8,205.44	\$ 9,203.68	\$ 13,011.34
Terminal Value						\$ 216,855.71	
Return on capital							12.37%
Cost of Capital		9.91%	9.91%	9.91%	9.91%	9.91%	8.00%
Cumulated Discount Factor		1.0991	1.2080	1.3277	1.4593	1.6039	
Present Value		\$ 2,953.45	\$ 4,791.47	\$ 5,474.95	\$ 5,622.81	\$ 140,940.73	
Value of Operating Assets	\$ 159,783.41						
+ Cash	\$ 31,752.00						
+ Cross Holdings	\$ 33,566.00						
- Debt	\$ 58,379.00						
- Minority Interests	\$ 1,245.00						
Value of Equity	\$ 165,477.41						
Number of shares	4209.7						
Value per share	\$ 39.31						

Added long term investments in joint ventures and subtracted out minority interest in consolidated holdings.

Shell's Revenues & Oil Prices





Revenue calculated from the oil price drawn from distribution

$$\text{Revenue} = 39992.77 + 4039.40 \times \text{Oil Price/Barrel}$$

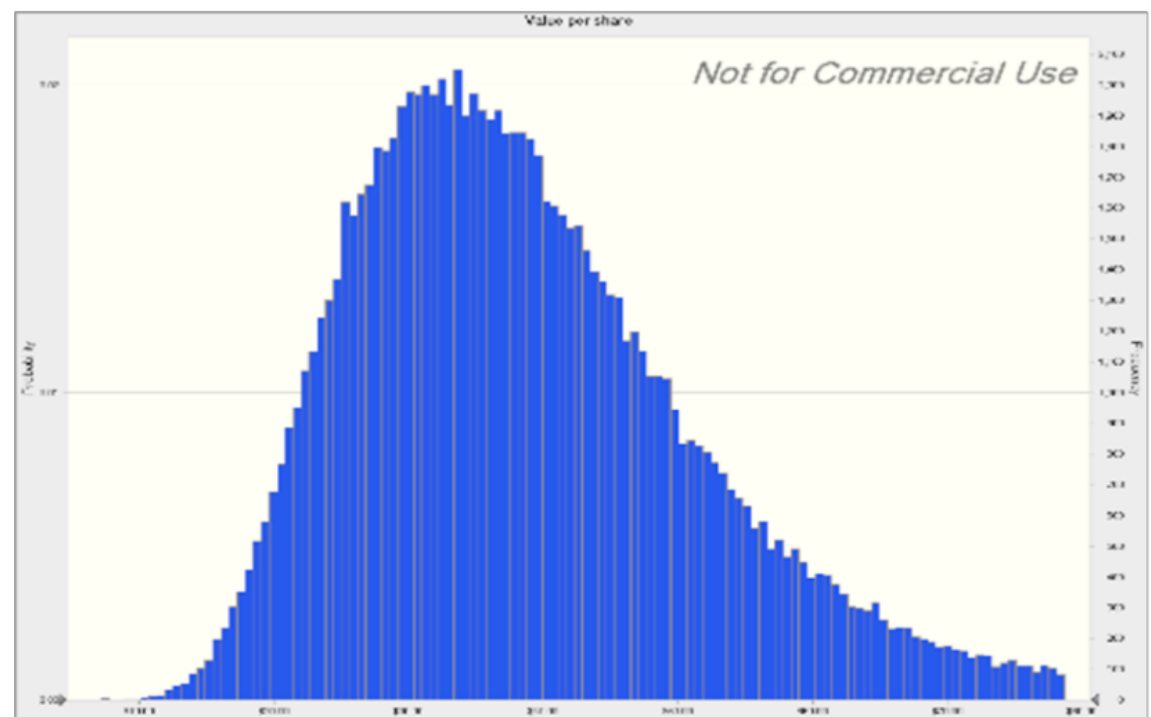
Pre-tax Operating Income based on revenue & selected margin

$$\text{Pre-tax Operating Income} = \text{Revenues} \times \text{Operating Margin}$$

Value Shell based on operating income, assuming other assumptions (tax rate, revenue growth, cost of capital)



Percentiles:	Forecast values
0%	\$6.55
10%	\$23.90
20%	\$27.73
30%	\$30.89
40%	\$33.88
50%	\$36.99
60%	\$40.28
70%	\$44.22
80%	\$49.24
90%	\$57.49
100%	\$197.11





VALUE, PRICE AND INFORMATION: CLOSING THE DEAL

Value versus Price

Are you valuing or pricing?

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Tools for intrinsic analysis

- Discounted Cashflow Valuation (DCF)
- Intrinsic multiples
- Book value based approaches
- Excess Return Models

Tools for "the gap"

- Behavioral finance
- Price catalysts

Tools for pricing

- Multiples and comparables
- Charting and technical indicators
- Pseudo DCF

Value of cashflows,
adjusted for time
and risk

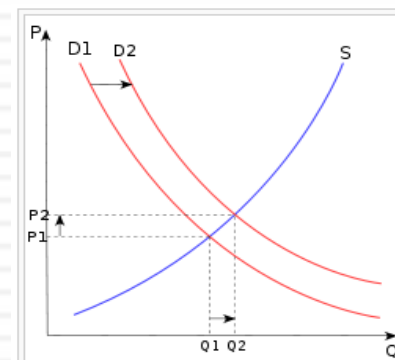
INTRINSIC
VALUE

Value

THE GAP
Is there one?
Will it close?

Price

PRICE



Drivers of intrinsic value

- Cashflows from existing assets
- Growth in cash flows
- Quality of Growth

Drivers of "the gap"


- Information
- Liquidity
- Corporate governance

Drivers of price

- Market moods & momentum
- Surface stories about fundamentals

Test 1: Are you pricing or valuing?

360

**5369 La Jolla Mesa Dr**
La Jolla, CA 92037
Status: Active

\$995,000
Price

3
Beds





2.5
Baths

1,440 Sq. Ft.
\$691 / Sq. Ft.

Built: 1955


Lot Size: 3,000 Sq. Ft.


On Redfin: 12 days


Favorite X-Out Share... Tour Home


Overview Property Details Tour Insights Property History Public Records Activity Schools Neighborhood & Offer Insights Similar Homes



**Lisa Padilla**
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★★★★★
47 client reviews
\$8,726 commission refund
Go Tour This Home
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Test 2: Are you pricing or valuing?

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Rating
Buy

Europe
Switzerland

Biotechnology
Biotechnology

Company
BB BIOTECH

Reuters
BION.S

Bloomberg
BION SW

Exchange
SWX

Ticker
BION

Date

13 August 2013

Forecast Change

Price at 12 Aug 2013 (CHF)	124.00
Price Target (CHF)	164.50
52-week range (CHF)	128.40 - 84.90

Strong sector and stock-picking continue

Impressive performance

Over the past two years, BB Biotech shares have roughly tripled, which could tempt investors to take profits. However, this performance has been well backed by a deserved revival of the biotech industry, encouraging fundamental news, M&A, and increased money flow into health care stocks. In addition, BBB returned to index outperformance by modifying its stock-picking approach. Hence, despite excellent performance, the shares still trade at a 23% discount to the net asset value of the portfolio. Hence, the shares are an attractive value vehicle to capture growth opportunities in an attractive sector.

Biotech industry remains attractive

With the re-rating of the pharma sector, investors have also showed increased interest in biotech stocks. Established biotech stocks have delivered encouraging financial results and approvals, while there has also been substantial industry consolidation, which is not surprising in times of "cheap" money and high liquidity. BB Biotech remains an attractive vehicle to capture the future potential of the biotech sector. In addition, investors benefit from a 23% discount to NAV and attractive cash distribution policy of 5% yield p.a. Hence, we reiterate our Buy on BB Biotech shares.

BB Biotech shares remain attractive

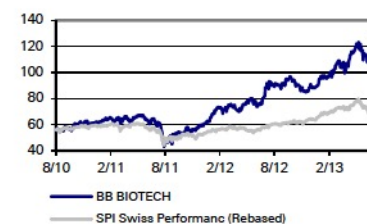
In the first 6M of 2013, BB Biotech increased its NAV by 36%, which marks good outperformance against the Nasdaq Biotech Index (NBI)'s 27%. This is a remarkable performance after 2012 when RRR's NAV increase of 45% also

Key changes

Target Price 106.50 to 164.50 ↑ 54.5%

Source: Deutsche Bank

Price/price relative

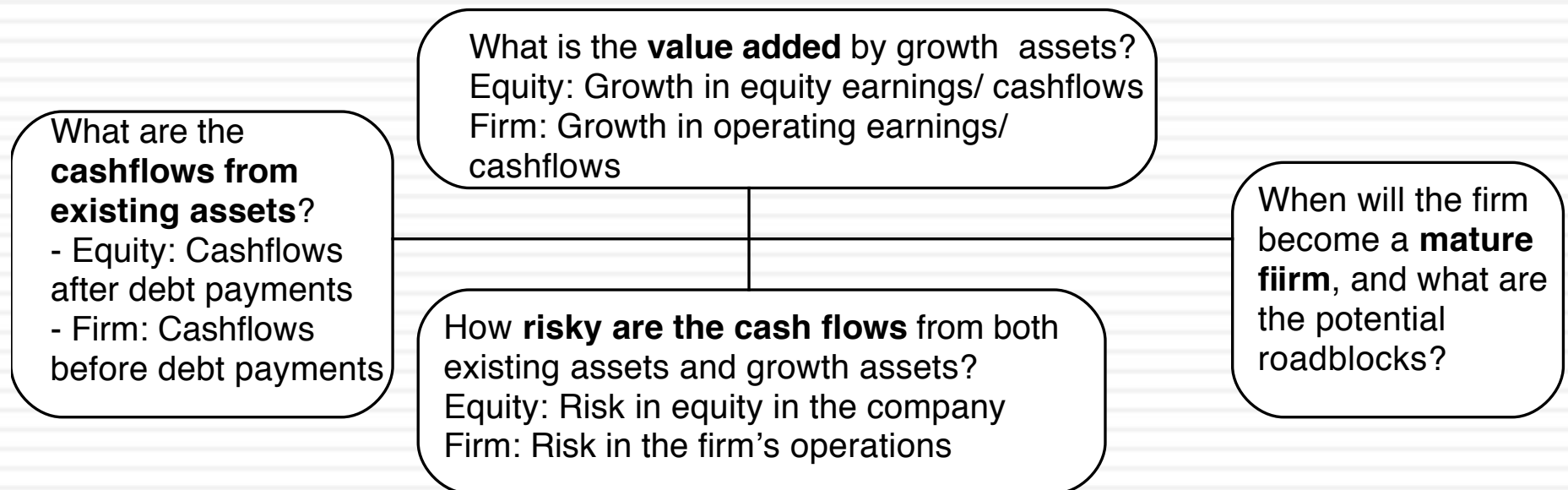


Performance (%)	1m	3m	12m
Absolute	-1.4	5.4	37.4
SPI Swiss Performance IX	0.5	-1.4	26.4

Source: Deutsche Bank

The drivers of value

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The determinants of price

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Mood and Momentum

Price is determined in large part by mood and momentum, which, in turn, are driven by behavioral factors (panic, fear, greed).

Liquidity & Trading Ease

While the value of an asset may not change much from period to period, liquidity and ease of trading can, and as it does, so will the price.

The Market Price

Incremental information

Since you make money on price changes, not price levels, the focus is on incremental information (news stories, rumors, gossip) and how it measures up, relative to expectations

Group Think

To the extent that pricing is about gauging what other investors will do, the price can be determined by the "herd".

Three views of “the gap”

	View of the gap	Investment Strategies
The Efficient Marketer	The gaps between price and value, if they do occur, are random.	Index funds
The “value” extremist	You view pricers as dilettantes who will move on to fad and fad. Eventually, the price will converge on value.	Buy and hold stocks where value < price
The pricing extremist	Value is only in the heads of the “eggheads”. Even if it exists (and it is questionable), price may never converge on value.	(1) Look for mispriced securities. (2) Get ahead of shifts in demand/momentum.

The “pricers” dilemma..

- No anchor: If you do not believe in intrinsic value and make no attempt to estimate it, you have no moorings when you invest. You will therefore be pushed back and forth as the price moves from high to low. In other words, everything becomes relative and you can lose perspective.
- Reactive: Without a core measure of value, your investment strategy will often be reactive rather than proactive.
- Crowds are fickle and tough to get a read on: The key to being successful as a pricer is to be able to read the crowd mood and to detect shifts in that mood early in the process. By their nature, crowds are tough to read and almost impossible to model systematically.

The valuer's dilemma and ways of dealing with it...

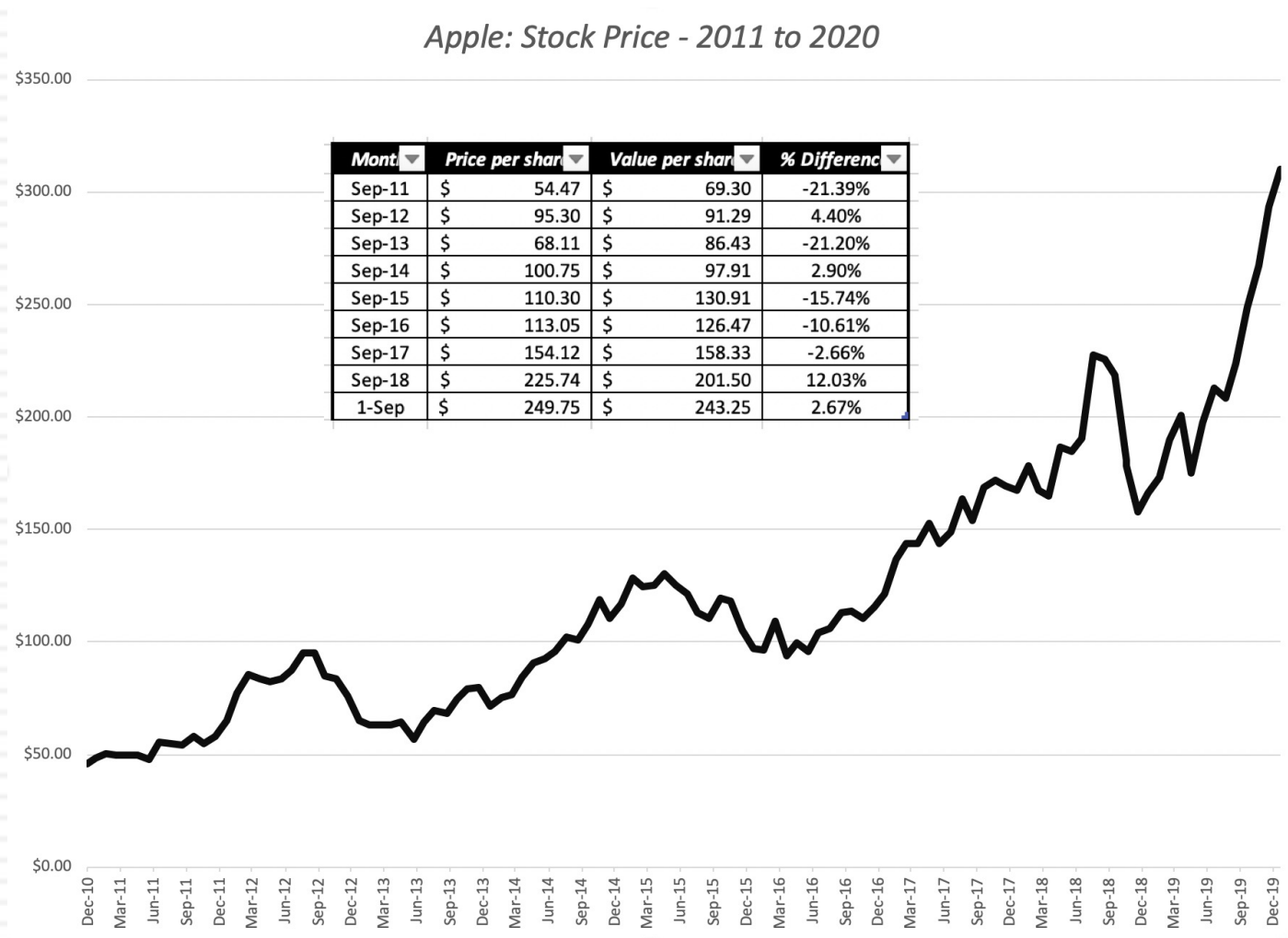
- Uncertainty about the magnitude of the gap:
 - ▣ Margin of safety: Many value investors swear by the notion of the “margin of safety” as protection against risk/uncertainty.
 - ▣ Collect more information: Collecting more information about the company is viewed as one way to make your investment less risky.
 - ▣ Ask what if questions: Doing scenario analysis or what if analysis gives you a sense of whether you should invest.
 - ▣ Confront uncertainty: Face up to the uncertainty, bring it into the analysis and deal with the consequences.
- Uncertainty about gap closing: This is tougher and you can reduce your exposure to it by
 - ▣ Lengthening your time horizon
 - ▣ Providing or looking for a catalyst that will cause the gap to close.

Strategies for managing the risk in the “closing” of the gap

- The “karmic” approach: In this one, you buy (sell short) under (over) valued companies and sit back and wait for the gap to close. You are implicitly assuming that given time, the market will see the error of its ways and fix that error.
- The catalyst approach: For the gap to close, the price has to converge on value. For that convergence to occur, there usually has to be a catalyst.
 - If you are an activist investor, you may be the catalyst yourself. In fact, your act of buying the stock may be a sufficient signal for the market to reassess the price.
 - If you are not, you have to look for other catalysts. Here are some to watch for: a new CEO or management team, a “blockbuster” new product or an acquisition bid where the firm is targeted.

An example: Apple – Price versus Value (my estimates) from 2011 to 2020


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A closing thought...

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VALUATION: PACKET 2

RELATIVE VALUATION, ASSET-BASED VALUATION AND PRIVATE COMPANY VALUATION

2/5/21

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The Essence of Relative Valuation (Pricing)

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- In relative valuation, the value of an asset is compared to the values assessed by the market for similar or comparable assets.
- To do relative valuation then,
 - ▣ we need to identify comparable assets and obtain market values for these assets
 - ▣ convert these market values into standardized values, since the absolute prices cannot be compared This process of standardizing creates price multiples.
 - ▣ compare the standardized value or multiple for the asset being analyzed to the standardized values for comparable asset, controlling for any differences between the firms that might affect the multiple, to judge whether the asset is under or over valued

Relative valuation is pervasive...

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- Most asset valuations are relative.
- Most equity valuations on Wall Street are relative valuations.
 - Almost 85% of equity research reports are based upon a multiple and comparables.
 - More than 50% of all acquisition valuations are based upon multiples
 - Rules of thumb based on multiples are not only common but are often the basis for final valuation judgments.
- While there are more discounted cashflow valuations in consulting and corporate finance, they are often relative valuations masquerading as discounted cash flow valuations.
 - The objective in many discounted cashflow valuations is to back into a number that has been obtained by using a multiple.
 - The terminal value in a significant number of discounted cashflow valuations is estimated using a multiple.

Why relative valuation?

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“If you think I’ m crazy, you should see the gu
lives across the hall”

Jerry Seinfeld talking about Kramer in a Seinfeld episode



“ A little inaccuracy sometimes saves tons of explanation”

H.H. Munro

“ If you are going to screw up, make sure that you have
lots of company”

Ex-portfolio manager

The Market Imperative....

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- Relative valuation is much more likely to reflect market perceptions and moods than discounted cash flow valuation. This can be an advantage when it is important that the price reflect these perceptions as is the case when
 - ▣ the objective is to sell a security at that price today (as in the case of an IPO)
 - ▣ investing on “momentum” based strategies
- With relative valuation, there will always be a significant proportion of securities that are under valued and over valued.
- Since portfolio managers are judged based upon how they perform on a relative basis (to the market and other money managers), relative valuation is more tailored to their needs
- Relative valuation generally requires less information than discounted cash flow valuation (especially when multiples are used as screens)