Amazon in January 2000

Current Revenue $ 1,117

Current Margin: -36.71%

EBIT -410m

From previous years

NOL: 500 m

Sales to capital ratio and expected margin are retail industry average numbers

Sales Turnover Ratio: 3.00

Competitive Advantages

Revenue Growth: 42%

Expected Margin: -> 10.00%

Stable Growth

Stable Revenue Growth: 6%

Stable Operating Margin: 10.00%

Stable ROC=20% Reinvest 30% of EBIT(1-t)

Terminal Value= 1881/(.0961-.06) =52,148

	1	2	3	4	5	6	7	8	9	10	Term. Year
Revenue Growth	150.00%	100.00%	75.00%	50.00%	30.00%	25.20%	20.40%	15.60%	10.80%	6.00%	6%
Revenues	$ 2,793	$ 5,585	$ 9,774	$ 14,661	$ 19,059	$ 23,862	$ 28,729	$ 33,211	$ 36,798	$ 39,006	$ 41,346
Operating Margin	-13.35%	-1.68%	4.16%	7.08%	8.54%	9.27%	9.64%	9.82%	9.91%	9.95%	10.00%
EBIT	-$373	-$94	$407	$1,038	$1,628	$2,212	$2,768	$3,261	$3,646	$3,883	$4,135
EBIT(1-t)	-$373	-$94	$407	$871	$1,058	$1,438	$1,799	$2,119	$2,370	$2,524	$2,688
- Reinvestment	$600	$967	$1,420	$1,663	$1,543	$1,688	$1,721	$1,619	$1,363	$961	$155
FCFF	-$931	-$1,024	-$989	-$758	-$408	-$163	$177	$625	$1,174	$1,788	$1,881

Forever

Cost of Equity	12.90%	12.90%	12.90%	12.90%	12.90%	12.42%	11.94%	11.46%	10.98%	10.50%
Cost of Debt	8.00%	8.00%	8.00%	8.00%	8.00%	7.80%	7.75%	7.67%	7.50%	7.00%
After-tax cost of debt	8.00%	8.00%	8.00%	6.71%	5.20%	5.07%	5.04%	4.98%	4.88%	4.55%
Cost of Capital	12.84%	12.84%	12.84%	12.83%	12.81%	12.13%	11.62%	11.08%	10.49%	9.61%

Value of Op Assets	$	15,170
+ Cash	$	26
= Value of Firm	$	15,196
- Value of Debt	$	34[illegible]
= Value of Equity	$	14,847
- Equity Options	$	2,892
Value per share	$	35.08

All existing options valued as options, using current stock price of $84.

Amazon was trading at $84 in January 2000.

Cost of Equity
12.90%

Used average interest coverage ratio over next 5 years to get BBB rating.

Cost of Debt
6.5%+1.5%=8.0%
Tax rate = 0% -> 35%

Weights
Debt= 1.2% -> 15%

Pushed debt ratio to retail industry average of 15%.

Dot.com retailers for firrst 5 years
Convetional retailers after year 5

Riskfree Rate:
T. Bond rate = 6.5%

+

Beta
1.60 -> 1.00

X

Risk Premium
4%

Internet/ Retail

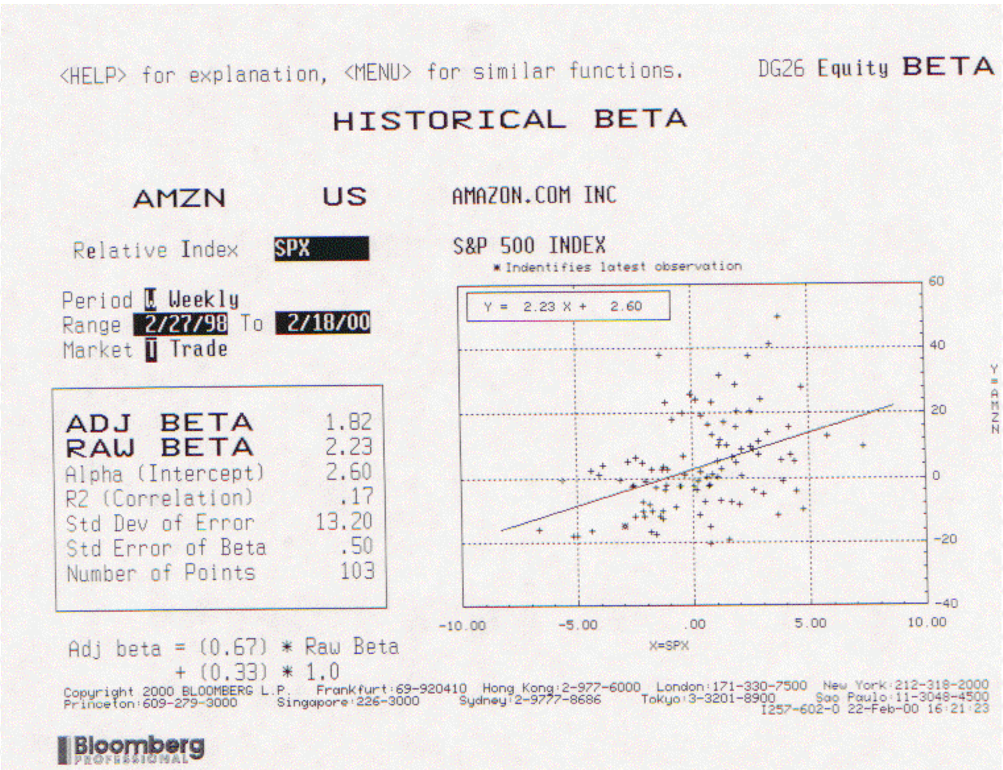
Operating Leverage

Current D/ E: 1.21%

Base Equity Premium

Country Risk Premium

Lesson 1: Don’t sweat the small stuff



- Spotlight the business the company is in & use the beta of that business.
- Don’t try to incorporate failure risk into the discount rate.
- Let the cost of capital change over time, as the company changes.
- If you are desperate, use the cross section of costs of capital to get your estimation going (use the 90th or 95th percentile across all companies).

Lesson 2: Work backwards and keep it simple…

Year	Revenue Growth	Sales	Operating Margin	EBIT	EBIT (1-t)
Tr 12 mths		$1,117	-36.71%	-$410	-$410
1	150.00%	$2,793	-13.35%	-$373	-$373
2	100.00%	$5,585	-1.68%	-$94	-$94
3	75.00%	$9,774	4.16%	$407	$407
4	50.00%	$14,661	7.08%	$1,038	$871
5	30.00%	$19,059	8.54%	$1,628	$1,058
6	25.20%	$23,862	9.27%	$2,212	$1,438
7	20.40%	$28,729	9.64%	$2,768	$1,799
8	15.60%	$33,211	9.82%	$3,261	$2,119
9	10.80%	$36,798	9.91%	$3,646	$2,370
10	6.00%	$39,006	9.95%	$3,883	$2,524
TY	6.00%	$41,346	10.00%	$4,135	$2,688

Lesson 3: Scaling up is hard to do & failure is common

- Lower revenue growth rates, as revenues scale up.
- Keep track of dollar revenues, as you go through time, measuring against market size.

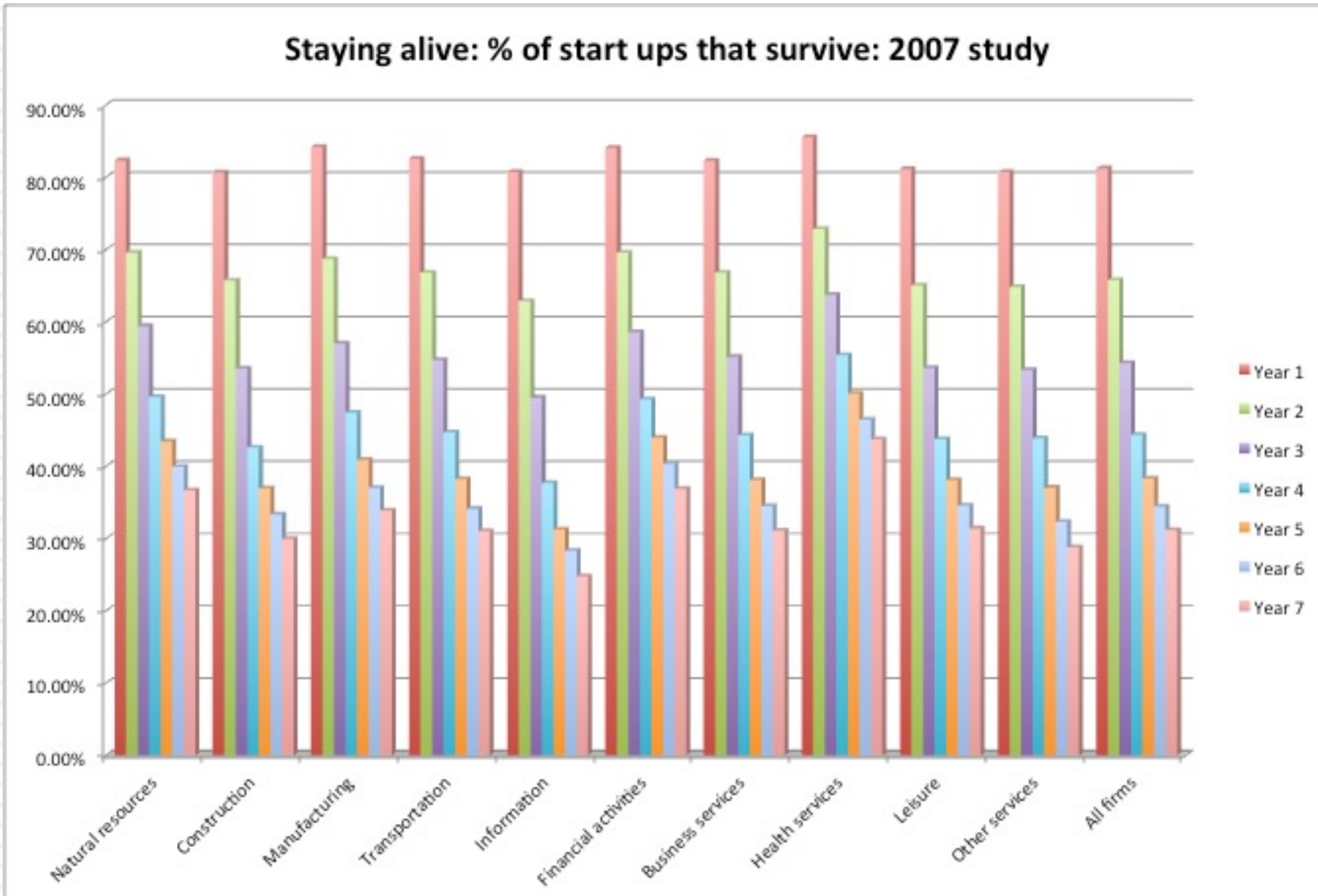
Lesson 4: Don't forget to pay for growth…

Year	Revenues	Δ Revenue	Sales/Cap	Δ Investment	Invested Capital	EBIT (1-t)	Imputed ROC
Tr 12 mths	$1,117				$ 487	-$410	
1	$2,793	$1,676	3.00	$559	$ 1,045	-$373	-76.62%
2	$5,585	$2,793	3.00	$931	$ 1,976	-$94	-8.96%
3	$9,774	$4,189	3.00	$1,396	$ 3,372	$407	20.59%
4	$14,661	$4,887	3.00	$1,629	$ 5,001	$871	25.82%
5	$19,059	$4,398	3.00	$1,466	$ 6,467	$1,058	21.16%
6	$23,862	$4,803	3.00	$1,601	$ 8,068	$1,438	22.23%
7	$28,729	$4,868	3.00	$1,623	$ 9,691	$1,799	22.30%
8	$33,211	$4,482	3.00	$1,494	$ 11,185	$2,119	21.87%
9	$36,798	$3,587	3.00	$1,196	$ 12,380	$2,370	21.19%
10	$39,006	$2,208	3.00	$736	$ 13,116	$2,524	20.39%
TY	$41,346	$2,340	NA		Assumed to be =		20.00%

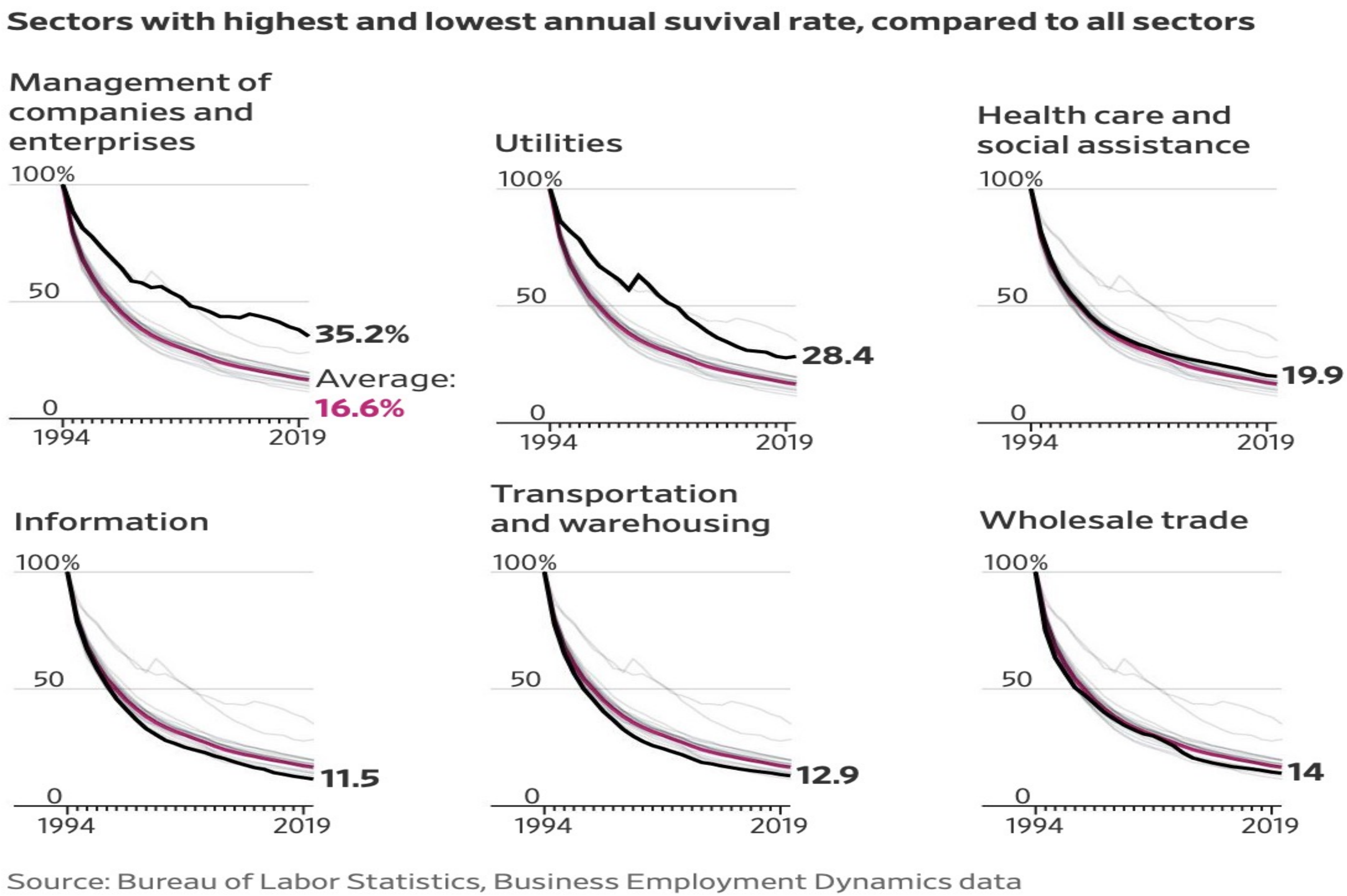
Lesson 5: The dilution is taken care off..

- With young growth companies, it is almost a given that the number of shares outstanding will increase over time for two reasons:
  - To grow, the company will have to issue new shares either to raise cash to take projects or to offer to target company stockholders in acquisitions
  - Many young, growth companies also offer options to managers as compensation and these options will get exercised, if the company is successful.
- Both effects are already incorporated into the value per share, even though we use the current number of shares in estimating value per share
  - The need for new equity issues is captured in negative cash flows in the earlier years. The present value of these negative cash flows will drag down the current value of equity and this is the effect of future dilution. In the Amazon valuation, the value of equity is reduced by $3.09 billion (the present value of negative FCFF in the first 6 years), about a 16% reduction. That takes care of new issues in the future.
  - The existing options are valued and netted out against the current value, taking care of the option overhang. The future earnings are after stock based compensation expenses (don't fall for the "its not a cash expense" ploy) to take care of future option grants.

Lesson 6: If you are worried about failure, incorporate into value



A 2019 Update: Sector Comparison



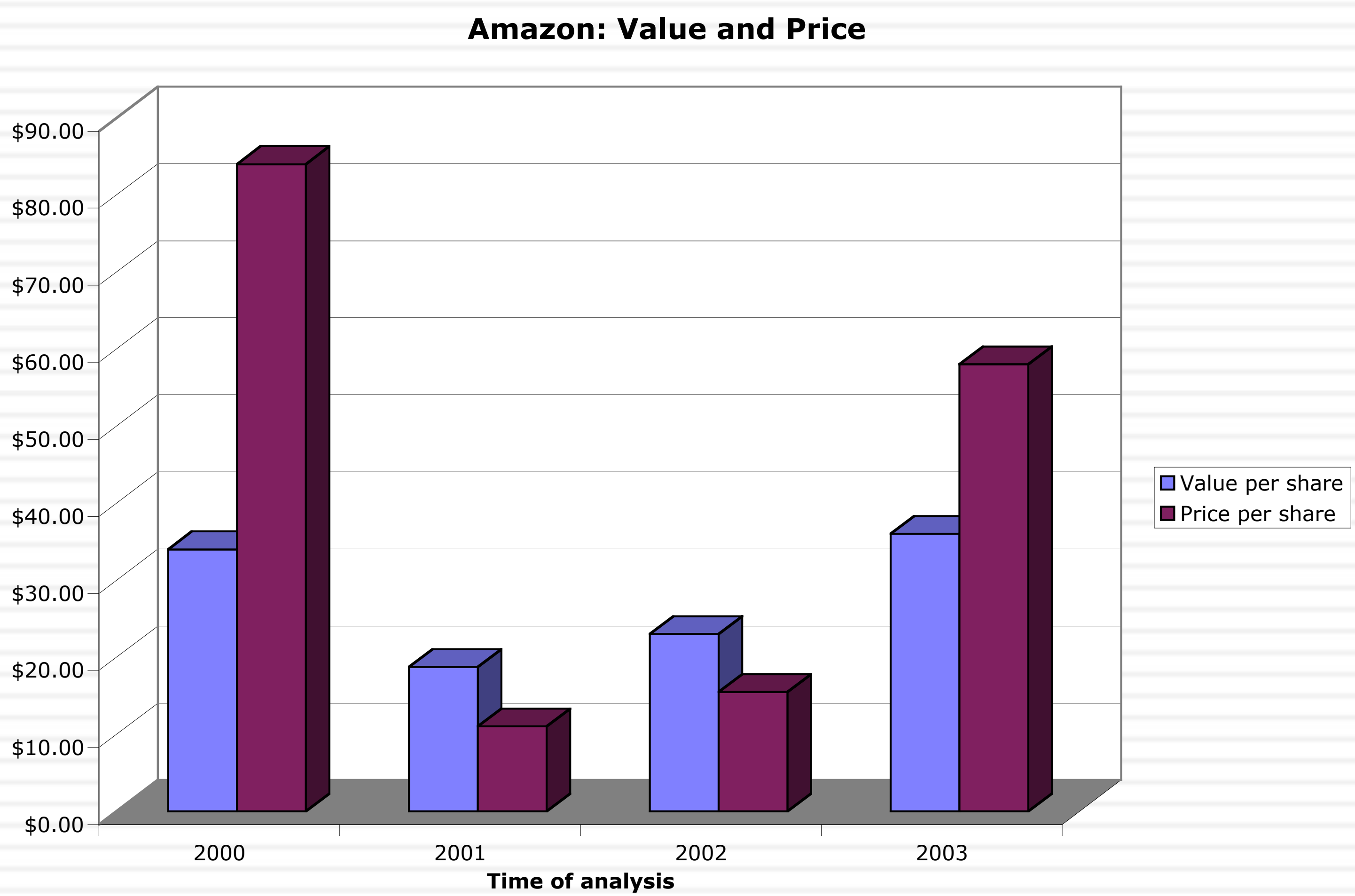
Lesson 7: There are always scenarios where the market price can be justified…

	6%	8%	10%	12%	14%
30%	$ (1.94)	$ 2.95	$ 7.84	$ 12.71	$ 17.57
35%	$ 1.41	$ 8.37	$ 15.33	$ 22.27	$ 29.21
40%	$ 6.10	$ 15.93	$ 25.74	$ 35.54	$ 45.34
45%	$ 12.59	$ 26.34	$ 40.05	$ 53.77	$ 67.48
50%	$ 21.47	$ 40.50	$ 59.52	$ 78.53	$ 97.54
55%	$ 33.47	$ 59.60	$ 85.72	$ 111.84	$ 137.95
60%	$ 49.53	$ 85.10	$ 120.66	$ 156.22	$ 191.77

Lesson 8: You will be wrong 100% of the tim and it really is not your fault…

- No matter how careful you are in getting your inputs and how well structured your model is, your estimate of value will change both as new information comes out about the company, the business and the economy.
- As information comes out, you will have to adjust and adapt your model to reflect the information. Rather than be defensive about the resulting changes in value, recognize that this is the essence of risk.
- A test: If your valuations are unbiased, you should find yourself increasing estimated values as often as you are decreasing values. In other words, there should be equal doses of good and bad news affecting valuations (at least over time).

And the market is often “more wrong”….



Assessing my 2000 forecasts, in 2014

	Revenues		Operating Income				Operating Margin	
Year	My forecast (2000)	Actual	My forecast (2000)		Actual		My forecast (2000)	Actual
2000	$2,793	$2,762	-$	373	-$	664.00	-13.35%	-24.04%
2001	$5,585	$3,122	-$	94	-$	231.00	-1.68%	-7.40%
2002	$9,774	$3,932	$	407	$	106.00	4.16%	2.70%
2003	$14,661	$5,264	$	1,038	$	271.00	7.08%	5.15%
2004	$19,059	$6,921	$	1,628	$	440.00	8.54%	6.36%
2005	$23,862	$8,490	$	2,212	$	432.00	9.27%	5.09%
2006	$28,729	$10,711	$	2,768	$	389.00	9.63%	3.63%
2007	$33,211	$14,835	$	3,261	$	655.00	9.82%	4.42%
2008	$36,798	$19,166	$	3,646	$	842.00	9.91%	4.39%
2009	$39,006	$24,509	$	3,883	$	1,129.00	9.95%	4.61%
2010	$41,346	$34,204	$	4,135	$	1,406.00	10.00%	4.11%
2011	$43,827	$48,077	$	4,383	$	862.00	10.00%	1.79%
2012	$46,457	$61,093	$	4,646	$	676.00	10.00%	1.11%
2013	$49,244	$74,452	$	4,925	$	745.00	10.00%	1.00%
2014 (LTM)	$51,460	$85,247	$	5,146.35	$	97.00	10.00%	0.11%

Amazon

The Greatest (and most Feared) Disruptive Platform in History

Amazon will complete its metaphorsis from being a retail company to one that can take its competitive advantages - access to capital & willingness to lose money for long periods, while disrupting and changing the status quo - to any business that it targets, giving it the potential for high revenue growth on top of already-large revenues. It will be able to use the pricing power it accumulates in each business it is in, to increase profit margins, partly through economies of scale and partly through higher prices. Its low debt ratio and divergent business mix give it a low cost of capital.

The Assumptions

	Base year	*Years 1-5*	*Years 6-10*		*After year 10*	*Link to story*
Revenues (a)	$ 208,125	15.00%	3.00%		3.00%	Expanding into new businessses
Operating margin (b)	7.71%	7.71%	12.50%		12.50%	Economies of scale and pricing power increase margins
Tax rate	20.20%	20.20%	24.00%		24.00%	Converging on a global tax rate of 25%
Reinvestment (c)		Sales to capital ratio	5.95	RIR =	30.00%	Big payoffs from investing in technology and content
Return on capital	15.24%	Marginal ROIC =	89.16%		10.00%	The last man standing...
Cost of capital (d)		7.97%	7.50%		7.50%	Low debt & diverse business mix

The Cash Flows

	Revenues	*Operating Margin*	*EBIT*	*EBIT (1-t)*	*Reinvestment*	*FCFF*
1	$ 239,344	8.67%	$ 20,753	$ 16,560	$ 5,249	$ 11,311
2	$ 275,245	9.63%	$ 26,501	$ 21,147	$ 6,037	$ 15,110
3	$ 316,532	10.59%	$ 33,506	$ 26,736	$ 6,942	$ 19,794
4	$ 364,012	11.54%	$ 42,017	$ 33,527	$ 7,983	$ 25,544
5	$ 418,614	12.50%	$ 52,327	$ 41,754	$ 9,181	$ 32,573
6	$ 471,359	12.50%	$ 58,920	$ 46,568	$ 8,869	$ 37,699
7	$ 519,438	12.50%	$ 64,930	$ 50,825	$ 8,084	$ 42,741
8	$ 559,954	12.50%	$ 69,994	$ 54,258	$ 6,813	$ 47,446
9	$ 590,191	12.50%	$ 73,774	$ 56,628	$ 5,084	$ 51,544
10	$ 607,897	12.50%	$ 75,987	$ 57,750	$ 2,977	$ 54,773
Terminal year	$ 626,134	12.50%	$ 78,267	$ 59,483	$ 17,845	$ 41,638

The Value

Terminal value	$ 925,287		
PV(Terminal value)	$ 435,438		
PV (CF over next 10 years)	$ 206,707		
Value of operating assets =	$ 642,144		
Adjustment for distress	$ -	Probability of failure =	0.00%
- Debt & Mnority Interests	$ 45,435		
+ Cash & Other Non-operating assets	$ 27,050		
Value of equity	$ 623,759		
- Value of equity options	$ -		
Number of shares	497.00		
Value per share	$ 1,255.05	Stock was trading at =	$1,970.19

Amazon

The Disruption Platform Rolls on

Amazon continues on its transformation from online retailer to disruption platform, willling to enter any business that it perceives as inefficiently run, and changing it. Along the way, it will invest large amounts of capital and wait for long periods to attain profitability.

The Assumptions

	Base year	*In 2020*	*Years 1-5*	*Years 6-10*	*After year 10*	*Link to story*
Revenues (a)	$ 321,782	25.0%	20.00%	→ 2.00%	2.00%	Disruption platform in multiple businesses
Operating margin (b)	7.99%	7.5%	7.99%	→ 12.00%	12.00%	Margins improve, aided by cloud business & continued economies of scale.
Tax rate	16.99%		16.99%	→ 25.00%	25.00%	Global/US marginal tax rate over time
Reinvestment (c)		Sales to Capital =		1.95	16.67%	Maintined at Amazon's current level
Return on capital	12.91%	Marginal ROIC =		25.94%	12.00%	Stronge competitive edges
Cost of capital (d)			6.11%	→ 6.11%	6.11%	Cost of capital close to median company

The Cash Flows

	Revenues	*Operating Margin*	*EBIT*	*EBIT (1-t)*	*Reinvestment*	*FCFF*
1	$ 402,228	7.50%	$ 30,167	$ 25,043	$ 41,356	$ (16,313)
2	$ 482,673	8.40%	$ 40,545	$ 33,658	$ 41,356	$ (7,698)
3	$ 579,208	8.85%	$ 51,260	$ 42,553	$ 49,627	$ (7,074)
4	$ 695,049	9.30%	$ 64,640	$ 53,660	$ 59,552	$ (5,893)
5	$ 834,059	9.75%	$ 81,321	$ 67,507	$ 71,463	$ (3,955)
6	$ 970,845	10.40%	$ 100,943	$ 82,178	$ 70,319	$ 11,859
7	$ 1,095,113	10.80%	$ 118,251	$ 94,374	$ 63,884	$ 30,490
8	$ 1,195,863	11.20%	$ 133,921	$ 104,734	$ 51,794	$ 52,939
9	$ 1,262,831	11.60%	$ 146,480	$ 112,208	$ 34,427	$ 77,780
10	$ 1,288,088	12.00%	$ 154,571	$ 115,928	$ 12,984	$ 102,944
Terminal year	$ 1,313,850	12.00%	$ 157,662	$ 118,246	$ 19,708	$ 98,539

The Value

Terminal value	$ 2,396,245		
PV(Terminal value)	$ 1,323,967		
PV (CF over next 10 years)	$ 128,131		
Value of operating assets =	$ 1,452,098		
Adjustment for distress	$ -	Probability of failure =	0.00%
- Debt & Mnority Interests	$ 91,401		
+ Cash & Other Non-operating assets	$ 71,391		
Value of equity	$ 1,432,088		
- Value of equity options	$ -		
Number of shares	506.50		
Value per share	$ 2,827.42	Stock was trading at =	$3,260.48