Broadcom (AVGO)

Updated December 7th, 2018 by Jonathan Weber

Key Metrics

Current Price:	$227	**5 Year CAGR Estimate:**	20.3%	**Volatility Percentile:**	73.0%
Fair Value Price:	$295	**5 Year Growth Estimate:**	10.3%	**Momentum Percentile:**	24.5%
% Fair Value:	77%	**5 Year Valuation Multiple Estimate:**	5.3%	**Growth Percentile:**	94.9%
Dividend Yield:	4.7%	**5 Year Price Target**	$482	**Valuation Percentile:**	82.0%
Dividend Risk Score:	D	**Retirement Suitability Score:**	D	**Total Return Percentile:**	93.6%

Overview & Current Events

Broadcom designs, develops and sells semiconductors under the following business units: Wired infrastructure, wireless communication, enterprise storage and industrial. Its offerings include data center chips, factory automation, energy systems and power generation, broadband access, and home connectivity. Broadcom is a fabless semiconductor company, which means that the products it designs are manufactured by other companies (so called foundries). Broadcom has recently redomiciled to the US and is now headquartered in San Jose, CA. The company was founded in 1961 and currently trades with a market capitalization of $94 billion.

Broadcom reported its fourth quarter (fiscal 2018) earnings results on December 6. The company generated revenues of $5.44 billion during the quarter, which represents an increase of 12.4% compared to the prior year's quarter. Broadcom reported earnings-per-share of $5.85 for Q4, which was 27% more than what Broadcom earned during Q4 of 2017. During fiscal 2018 Broadcom has been able to grow its revenues by 18% (to $20.8 billion), earning-per-share hit a new record level of $20.82 during the fiscal year, an increase of 30% year over year. Broadcom has issued guidance for fiscal 2019, the company forecasts revenues of $24.5 billion (implying a revenue growth rate of 18%). Operating margins are forecasted at 51%, relatively in line with the margins that Broadcom generated during 2018. The revenue guidance includes the impact of the acquisition of CA Technologies, which closed in November.

Broadcom has ramped up its already strong shareholder returns further. The company has bought back $1.5 billion worth of stock during the most recent quarter. On top of that, Broadcom has announced that it would increase its dividend by 51%. The new quarterly payout of $2.65 per share has lifted Broadcom's dividend yield to 4.7%.

Growth on a Per-Share Basis

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2024
EPS	-$0.09	$1.81	$2.28	$2.77	$2.89	$4.90	$8.98	$11.45	$16.02	$20.82	***$21.89***	***$35.73***
DPS	-	$0.07	$0.40	$0.61	$0.88	$1.23	$1.64	$2.52	$4.81	$7.00	***$10.60***	***$17.00***
Shares	235	240	246	245	249	254	276	398	409	416	***410***	***390***

Broadcom's profitability has exploded over the last decade. Its earnings-per-share rose more than tenfold between 2010 and 2018. This earnings growth was driven by a significant amount of M&A activities, the most important one being the merger between Broadcom and Avago Technologies. Broadcom has since made several other major takeovers, including its acquisition of Brocade for $6 billion that closed in late 2017, and its takeover of CA that closed one month ago. These acquisitions naturally have impacted Broadcom's growth tremendously, thus what we see in the above table is not Broadcom's organic growth rate. Due to its size Broadcom will not be able to continue to acquire competitors regularly, as regulators are less likely to allow future major acquisitions that would increase Broadcom's market share. By moving towards software with its CA takeover Broadcom has found a way for more inorganic growth, though. Broadcom's biggest market is wireless communication, where the company owns a strong connectivity portfolio that includes advanced LTE, Bluetooth 5.x, Wi-Fi, GNSS (GPS, Galileo, etc.) and so on. Broadcom is also well positioned in the enterprise storage market, where it provides switching and other connectivity solutions as well as storage products such as SSD controllers. These markets will continue to grow, and even without any major acquisitions Broadcom's revenues should continue to grow as well. Thanks to a strong IP portfolio (22,000 patents) it is unlikely that Broadcom loses

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significant market share going forward. Earnings growth will further be driven by improving economics of scale. Share buybacks could be a tailwind as well, although Broadcom issues a lot of shares to its employees & management.

Valuation Analysis

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Now	2024
Avg. P/E	-	11.7	13.6	13.0	13.4	14.7	13.9	13.5	14.4	10.6	***10.4***	***13.5***
Avg. Yld.	-	0.3%	1.3%	1.7%	2.3%	1.7%	1.3%	1.6%	2.1%	3.2%	***4.7%***	***5.0%***

Broadcom is trading at a quite inexpensive valuation of less than 11 times this year's earnings right now. Broadcom's shares never were overly expensive, but significant valuation expansion potential exists. Broadcom's quite high dividend yield (especially versus tech peers) of 4.7% adds significantly to the company's total return potential going forward.

Safety, Quality, Competitive Advantage, & Recession Resiliency

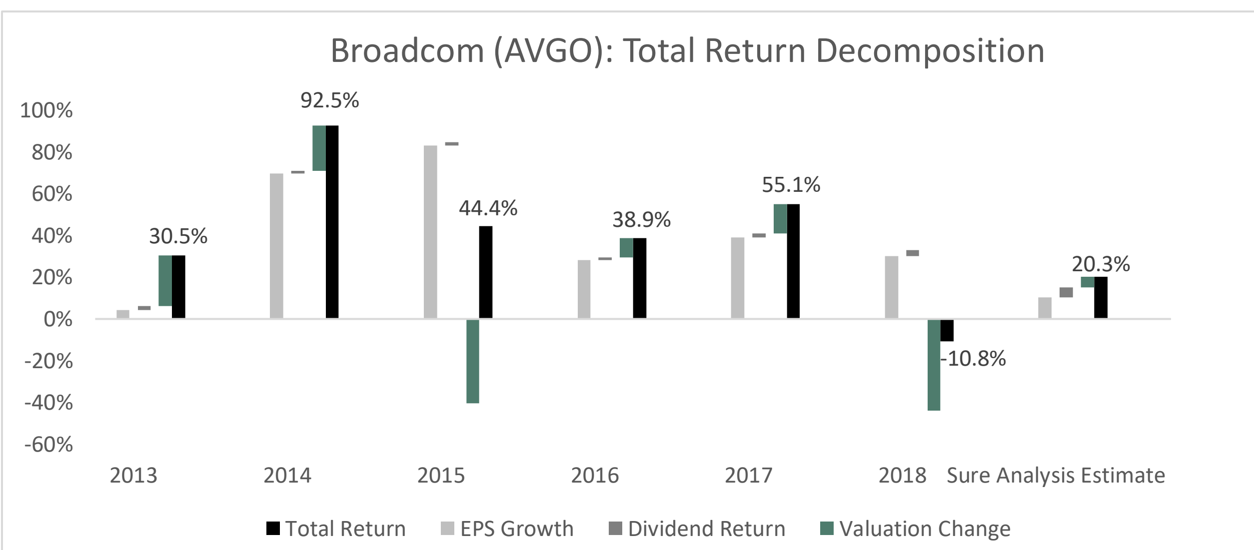
Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2024
Payout	---	3.9%	17.5%	22.0%	30.4%	25.1%	18.3%	22.0%	30.0%	33.6%	***48.4%***	***47.6%***

Broadcom's M&A activities had a tremendous impact on the company's fundamentals in the past. Large takeovers led to sizeable increases in Broadcom's asset base and debt levels, as a significant portion of takeovers was financed via debt. The company is still not overleveraged at all, though, and Broadcom could easily lower its debt levels by shifting cash flows towards paying down debt (from buybacks). Broadcom's dividend looks relatively safe due to a below-50% payout ratio. Broadcom did not remain profitable during the last financial crisis, but the company was much smaller and less diversified back then. Due to low fixed costs (as Broadcom operates fabless) and due to a lot of diversification across industries and geographically, the company is better positioned to weather future economic downturns. Due to its strong IP portfolio Broadcom is well positioned in the markets it targets, and market share losses are not overly likely.

Final Thoughts & Recommendation

Broadcom is one of the largest semiconductor companies in the world. The company's fabless model results in high cash flows and low capex, which is why Broadcom has ample cash for dividend payments and acquisitions. Industry tailwinds will allow for compelling growth rates, and total returns look very promising. We rate Broadcom a buy at current prices.

Total Return Breakdown by Year



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Disclosure: This analyst has no position in the security discussed in this research report, and no plans to initiate one in the next 72 hours.

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Income Statement Metrics

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Revenue	1699	1484	2093	2336	2364	2520	4269	6824	13240	17636
Gross Profit	655	560	966	1147	1142	1198	1877	3553	5940	8509
Gross Margin	38.6%	37.7%	46.2%	49.1%	48.3%	47.5%	44.0%	52.1%	44.9%	48.2%
SG&A Exp.	196	223	196	220	199	222	407	486	806	787
D&A Exp.	159	160	159	157	155	187	625	962	3042	4737
Operating Profit	166	71	469	588	587	554	578	1769	587	2666
Operating Margin	9.8%	4.8%	22.4%	25.2%	24.8%	22.0%	13.5%	25.9%	4.4%	15.1%
Net Profit	83	-44	415	552	563	552	263	1364	-1739	1692
Net Margin	4.9%	-3.0%	19.8%	23.6%	23.8%	21.9%	6.2%	20.0%	-13.1%	9.6%
Free Cash Flow	137	81	431	614	452	486	766	1725	2688	5482
Income Tax	3	8	-9	9	22	16	33	76	642	35

Balance Sheet Metrics

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total Assets	1871	1970	2157	2446	2862	3415	10491	10515	49966	54418
Cash & Equivalents	213	472	561	829	1084	985	1604	1822	3097	11204
Accounts Receivable	184	186	285	328	341	418	782	1019	2181	2448
Inventories	188	162	189	194	194	285	519	524	1400	1447
Goodwill & Int. Ass.	890	818	745	676	602	883	5213	4951	39800	35538
Total Liabilities	1091	930	652	440	443	529	7248	5801	28090	31232
Accounts Payable	174	154	198	221	248	278	515	617	1261	1105
Long-Term Debt	703	594	230	0	0	0	5509	3872	13642	17548
Shareholder’s Equity	780	1040	1505	2006	2419	2886	3243	4714	18892	20285
D/E Ratio	0.90	0.57	0.15	0.00	0.00	0.00	1.70	0.82	0.72	0.87

Profitability & Per Share Metrics

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Return on Assets	4.3%	-2.3%	20.1%	24.0%	21.2%	17.6%	3.8%	13.0%	-5.8%	3.2%
Return on Equity	11.3%	-4.8%	32.6%	31.4%	25.4%	20.8%	8.6%	34.3%	-14.7%	8.6%
ROIC	5.4%	-2.8%	24.6%	29.5%	25.4%	20.8%	4.5%	15.7%	-7.9%	4.4%
Shares Out.	235	240	246	245	249	254	276	398	409	416
Revenue/Share	7.76	6.78	8.51	9.27	9.46	10.00	15.99	24.28	34.57	41.89
FCF/Share	0.63	0.37	1.75	2.44	1.81	1.93	2.87	6.14	7.02	13.02

Note: All figures in millions of U.S. Dollars unless per share or indicated otherwise.