

SURFA 2018

Greg Gordon
Evercore ISI

April 19, 2018

Our Proprietary DDM Model Works: A Straightforward Analysis, Easily Understood

- Our dividend discount model guides us to our target PE multiple given the following inputs:
 - The group's current equity discount rate, based on the current risk-free rate (10 year US Treasury bond), the current adjusted beta of the regulated utility group (average of a subset of regulated utilities vs. the S&P 500 over the past 3 years, trending toward one), and an assumed equity risk premium
 - An estimate of near term and longer term earned returns on equity (ROEs) and equity ratios from the valuation date
 - An estimate of near-term and longer term rate base growth from the valuation date
- We consider three "stages" for these inputs:
 - The annual equity cash flows from stages 1, 2 and 3 as well as the terminal value is discounted back to a valuation date, and expressed as a multiple of first year's EPS

Period	Rate Base	ROE	Net Income	Dividend	Eqty Funding	RB Equity Raised	Shares Issued	Share Count	FCF DDM Method	DDM	Implied Payout	RB Growth	Eaned ROE	Discount Rate
								1.00						
Stage 1	0	20.5	9.8%	1.00	-0.65		0.00	1.00	0.65	0.65	65%	5.25%	9.65%	6.04%
	1	21.6	9.7%	1.04	-0.68	-0.54	-0.17	1.01	0.67	0.67	65%	5.25%	9.55%	6.28%
	2	22.7	9.6%	1.09	-0.71	-0.57	-0.19	1.02	0.69	0.65	65%	5.25%	9.45%	6.52%
	3	23.9	9.5%	1.13	-0.73	-0.60	-0.20	1.03	0.71	0.63	65%	5.25%	9.35%	6.76%
	4	25.2	9.4%	1.18	-0.76	-0.63	-0.22	1.04	0.73	0.60	65%	5.25%	9.25%	7.00%
Stage 2	5	27.4	9.3%	1.27	-0.82	-0.46	-0.02	1.05	0.78	0.56	65%	3.50%	9.25%	7.00%
	6	28.4	9.3%	1.31	-0.85	-0.48	-0.02	1.05	0.81	0.54	65%	3.50%	9.25%	7.00%
	7	29.4	9.3%	1.36	-0.88	-0.50	-0.02	1.05	0.84	0.52	65%	3.50%	9.25%	7.00%
	8	30.4	9.3%	1.41	-0.91	-0.51	-0.02	1.06	0.87	0.50	65%	3.50%	9.25%	7.00%
	9	31.5	9.3%	1.46	-0.95	-0.53	-0.02	1.06	0.90	0.49	65%	3.50%	9.25%	7.00%
Stage 3	10	32.3	9.3%	1.49	-1.10	-0.39	0.00	1.06	1.04	0.53	74%	2.50%	9.25%	7.00%
	11	33.1	9.3%	1.53	-1.13	-0.40	0.00	1.06	1.07	0.51	74%	2.50%	9.25%	7.00%
	12	33.9	9.3%	1.57	-1.15	-0.41	0.00	1.06	1.09	0.48	74%	2.50%	9.25%	7.00%
	13	34.7	9.3%	1.61	-1.18	-0.42	0.00	1.06	1.12	0.46	74%	2.50%	9.25%	7.00%
	14	35.6	9.3%	1.65	-1.21	-0.43	0.00	1.06	1.15	0.44	74%	2.50%	9.25%	7.00%
	15	36.5	9.3%	1.69	-1.24	-0.45	0.00	1.06	1.18	0.43	74%	2.50%	9.25%	7.00%
	16	37.4	9.3%	1.73	-1.27	-0.46	0.00	1.06	1.21	0.41	74%	2.50%	9.25%	7.00%
	17	38.3	9.3%	1.77	-1.31	-0.47	0.00	1.06	1.24	0.39	74%	2.50%	9.25%	7.00%
	18	39.3	9.3%	1.82	-1.34	-0.48	0.00	1.06	1.27	0.37	74%	2.50%	9.25%	7.00%
	19	40.3	9.3%	1.86	-1.37	-0.49	0.00	1.06	1.30	0.36	74%	2.50%	9.25%	7.00%
	20	41.3	9.3%	1.91	-1.41	-0.50	0.00	1.06	1.33	0.34	74%	2.50%	9.25%	7.00%
	21	42.3	9.3%	1.96	-1.44	-0.52	0.00	1.06	1.36	0.33	74%	2.50%	9.25%	7.00%
	22	43.4	9.3%	2.01	-1.48	-0.53	0.00	1.06	1.40	0.32	74%	2.50%	9.25%	7.00%
	23	44.5	9.3%	2.06	-1.51	-0.54	0.00	1.06	1.43	0.30	74%	2.50%	9.25%	7.00%
	24	45.6	9.3%	2.11	-1.55	-0.56	0.00	1.06	1.47	0.29	74%	2.50%	9.25%	7.00%
25	46.7	9.3%	2.16	-1.59	-0.57	0.00	1.06	1.51	0.28	74%	2.50%	9.25%	7.00%	
26	47.9	9.3%	2.21	-1.63	-0.58	0.00	1.06	1.54	0.27	74%	2.50%	9.25%	7.00%	
27	49.1	9.3%	2.27	-1.67	-0.60	0.00	1.06	1.58	0.25	74%	2.50%	9.25%	7.00%	
28	50.3	9.3%	2.33	-1.71	-0.61	0.00	1.06	1.62	0.24	74%	2.50%	9.25%	7.00%	
29	51.6	9.3%	2.38	-1.76	-0.63	0.00	1.06	1.66	0.23	74%	2.50%	9.25%	7.00%	
30	52.8	9.3%	2.44	-1.80	-0.64	0.00	1.06	1.70	0.22	74%	2.50%	9.25%	7.00%	
31	54.2	9.3%	2.51	-1.84	-0.66	0.00	1.06	1.75	0.21	74%	2.50%	9.25%	7.00%	
32	55.5	9.3%	2.57	-1.89	-0.68	0.00	1.06	1.79	0.21	74%	2.50%	9.25%	7.00%	
33	56.9	9.3%	2.63	-1.94	-0.69	0.00	1.06	1.83	0.20	74%	2.50%	9.25%	7.00%	
34	58.3	9.3%	2.70	-1.99	-0.71	0.00	1.06	1.88	0.19	74%	2.50%	9.25%	7.00%	
35	59.8	9.3%	2.77	-2.04	-0.73	0.00	1.06	1.93	0.18	74%	2.50%	9.25%	7.00%	
Terminal Value										42.83	4.01	2.50%	9.25%	7.00%

Turn Terminal Value On/Off 1

Sum of Discounted Equity Free Cash Flow 18.21

Expressed as a Multiple of Year 1 EPS 17.1x

Terminal Growth rate assumptions

Our DDM Shows Utilities Are Trading Close To Fair Value, Within A Relatively Tight Range

- **The Forward P/E multiple that utility investors are willing to pay (based on our DDM) is highly influenced by how quickly investors believe the yield curve will steepen**
 - Back in November they were discounting something closer to case 2, in which utility companies' ability to essentially over-earn is maintained (earnings declining but still robust authorized ROE's in a sustained low interest rate environment) and we achieve status quo rate base growth expectations.
 - When you look at the current valuation it is more reflective of our "case 3" scenario on our average 2020 P/E (which is probably +/-16.2X). Under our "case 3" scenario we assume authorized ROE's moderate and interest rates rise more rapidly, resulting in a more meaningful near term reduction in profitability.
 - Our base case assumes an orderly transition to higher interest rates, with authorized ROEs falling to 9.25% from 9.75%, and 10- year Treasury yields rising over the next several years, resulting at the end in a 2.25% spread between the return on equity and the calculated cost of equity.
- **Using this framework our DDM analysis more or less explains the assumptions implicit in recent peak and trough valuations for utility stocks**
 - Our target P/E multiple of 16.5X 2020 EPS is basically assuming we trend to economic assumptions between case 1 and case 3, shown below.

Growth Assumptions	
Year 1 to 5 Rate Base Growth	5.25%
Yr 6-10 RB Grwth	3.50%
Yr 11 fwd and Terminal Growth	2.50%
Terminal Value (beyond 35 years)	Yes
35 Year Average Payout Ratio - Implied	71%

W/ Base Case Growth Assumptions	Case 1	Case 2	Case 3
ROE and Ke Assumptions	Base Case	Rates Low Long Time	ROEs Fade Rates Rise
Yr 1 ROE	9.75%	9.75%	9.75%
Annual ROE Fade (+/-)	-0.10%	-0.05%	-0.10%
Final ROE	9.25%	9.25%	9.25%
Years Until LT Spread	5	5	5
Implied Annual Ke Change (+/-)	0.24%	0.19%	0.29%
Final year ROE / Ke Spread	2.25%	2.50%	2.00%
2020 P/E Multiple	17.1x	18.1x	16.2x

Thinking About A Regulated Utility “Death Spiral”: Key Assumptions

- **What Is The Theoretical Impact On The Value Of A Regulated Utility If They Have Stranded Generation And Or Transmission Assets Due To Radical Transformation Of Future Energy Infrastructure?**
 - This scenario is a 4-stage dividend discount model that simulates a relatively quick transition from status quo assumptions about infrastructure investment and rate base growth
 - At a high level we simulate a massive technological disruption that makes vast portions of current investment in electricity infrastructure under or un-utilized.
 - We use our experience with stranded cost recovery models in the late 1990’s as a loose template.
 - The simulation assumes that rate base growth starts to decline after year 5 due to a scenario in which demand growth either slows or infrastructure investment is being facilitate by third party capital deploying new technologies near or at the load center.
 - We then assume beginning in year 10 that regulators determine large portions of the legacy generation and perhaps even the transmission grid should no longer be depreciated and recovered over their assumed remaining useful lives.
 - The model assumes that between years 10-20 a simple stranded cost recovery scheme in which those assets are depreciated the cash is returned to the company
 - Lacking an opportunity to re-invest those cash flows in the business we assume that cash is returned to shareholders.

What Does A Utility "Death Spiral" Look Like If Large Portions Of Legacy Infrastructure Become Stranded?

What Is The Theoretical Impact On The Value Of A Regulated Utility If They Have Stranded Generation / Transmission Assets?

- Our DDM derives a fair value for the regulated utility experiencing this scenario of 14.4X 2020 EPS.
- Today the average regulated utility is trading at 16.3X 2020 EPS with a range of 14-18X
- That is 12% lower than current valuation. We think this understates the potential market reaction

	Period	Rate Base	ROE	Net Income	Dividend	Eqty RB Funding	Equity Raised	Shares Issued	Share Count	FCF DDM Method	DDM	Implied Payout	RB Growth	Eaned ROE	Discount Rate
	0	20.5	9.8%	1.00	-0.65			0.00	1.00	0.65	0.65	65%	5.25%	9.65%	6.05%
Stage 1	1	21.6	9.7%	1.04	-0.68	-0.54	-0.17	0.01	1.01	0.67	0.67	65%	5.25%	9.55%	6.30%
	2	22.7	9.6%	1.09	-0.71	-0.57	-0.19	0.01	1.02	0.69	0.65	65%	5.25%	9.45%	6.55%
	3	23.9	9.5%	1.13	-0.73	-0.60	-0.20	0.01	1.04	0.71	0.62	65%	5.25%	9.35%	6.80%
	4	25.2	9.4%	1.18	-0.76	-0.63	-0.22	0.01	1.05	0.73	0.60	65%	5.25%	9.30%	7.05%
Stage 2	5	26.5	9.3%	1.23	-0.80	-0.66	-0.23	0.01	1.06	0.75	0.57	65%	5.25%	9.30%	7.05%
	6	27.2	9.3%	1.26	-0.93	-0.33	0.00	0.00	1.06	0.88	0.62	74%	2.50%	9.30%	7.05%
	7	27.8	9.3%	1.29	-0.95	-0.34	0.00	0.00	1.06	0.90	0.60	74%	2.50%	9.30%	7.05%
	8	28.5	9.3%	1.33	-0.98	-0.35	0.00	0.00	1.06	0.92	0.57	74%	2.50%	9.30%	7.05%
	9	29.2	9.3%	1.36	-1.00	-0.36	0.00	0.00	1.06	0.94	0.55	74%	2.50%	9.30%	7.05%
Stage 3	10	30.0	9.3%	1.39	-1.03	-0.37	0.00	0.00	1.06	0.97	0.52	74%	2.50%	9.30%	7.05%
	11	28.0	9.3%	1.30	-2.28	0.97	0.00	0.00	1.06	2.15	1.09	175%	-6.50%	9.30%	7.05%
	12	26.2	9.3%	1.22	-2.13	0.91	0.00	0.00	1.06	2.01	0.95	175%	-6.50%	9.30%	7.05%
	13	24.5	9.3%	1.14	-1.99	0.85	0.00	0.00	1.06	1.88	0.83	175%	-6.50%	9.30%	7.05%
	14	22.9	9.3%	1.07	-1.86	0.80	0.00	0.00	1.06	1.75	0.72	175%	-6.50%	9.30%	7.05%
	15	21.4	9.3%	1.00	-1.74	0.74	0.00	0.00	1.06	1.64	0.63	175%	-6.50%	9.30%	7.05%
	16	20.0	9.3%	0.93	-1.63	0.70	0.00	0.00	1.06	1.53	0.55	175%	-6.50%	9.30%	7.05%
	17	18.7	9.3%	0.87	-1.52	0.65	0.00	0.00	1.06	1.43	0.48	175%	-6.50%	9.30%	7.05%
	18	17.5	9.3%	0.81	-1.42	0.61	0.00	0.00	1.06	1.34	0.42	175%	-6.50%	9.30%	7.05%
	19	16.4	9.3%	0.76	-1.33	0.57	0.00	0.00	1.06	1.25	0.37	175%	-6.50%	9.30%	7.05%
Stage 4	20	15.3	9.3%	0.71	-1.24	0.53	0.00	0.00	1.06	1.17	0.32	175%	-6.50%	9.30%	7.05%
	21	15.6	9.3%	0.73	-0.57	-0.15	0.00	0.00	1.06	0.54	0.14	79%	2.00%	9.30%	7.05%
	22	15.9	9.3%	0.74	-0.58	-0.16	0.00	0.00	1.06	0.55	0.13	79%	2.00%	9.30%	7.05%
	23	16.2	9.3%	0.76	-0.60	-0.16	0.00	0.00	1.06	0.56	0.13	79%	2.00%	9.30%	7.05%
	24	16.6	9.3%	0.77	-0.61	-0.16	0.00	0.00	1.06	0.57	0.12	79%	2.00%	9.30%	7.05%
	25	16.9	9.3%	0.79	-0.62	-0.17	0.00	0.00	1.06	0.58	0.11	79%	2.00%	9.30%	7.05%
	26	17.2	9.3%	0.80	-0.63	-0.17	0.00	0.00	1.06	0.60	0.11	79%	2.00%	9.30%	7.05%
	27	17.6	9.3%	0.82	-0.65	-0.17	0.00	0.00	1.06	0.61	0.10	79%	2.00%	9.30%	7.05%
	28	17.9	9.3%	0.83	-0.66	-0.18	0.00	0.00	1.06	0.62	0.10	79%	2.00%	9.30%	7.05%
	29	18.3	9.3%	0.85	-0.67	-0.18	0.00	0.00	1.06	0.63	0.09	79%	2.00%	9.30%	7.05%
	30	18.7	9.3%	0.87	-0.68	-0.18	0.00	0.00	1.06	0.64	0.09	79%	2.00%	9.30%	7.05%
	31	19.0	9.3%	0.88	-0.70	-0.19	0.00	0.00	1.06	0.66	0.09	79%	2.00%	9.30%	7.05%
	32	19.4	9.3%	0.90	-0.71	-0.19	0.00	0.00	1.06	0.67	0.08	79%	2.00%	9.30%	7.05%
	33	19.8	9.3%	0.92	-0.73	-0.19	0.00	0.00	1.06	0.68	0.08	79%	2.00%	9.30%	7.05%
	34	20.2	9.3%	0.94	-0.74	-0.20	0.00	0.00	1.06	0.70	0.07	79%	2.00%	9.30%	7.05%
	35	20.6	9.3%	0.96	-0.76	-0.20	0.00	0.00	1.06	0.71	0.07	79%	2.00%	9.30%	7.05%
Terminal Value	21.0	9.3%	0.98	-0.77	-0.21	0.00	0.00	1.06	0.73	0.07	79%	2.00%	9.30%	7.05%	

Turn Terminal Value On/Off 1

Sum of Discounted Equity Free Cash Flow 15.24

Expressed as a Multiple of Year 1 EPS 14.4x

Terminal Growth rate assumptions