

MISSOURI PUBLIC SERVICE COMMISSION

**STAFF REPORT
COST OF SERVICE**

APPENDIX 2

**Support for Staff
Cost of
Capital Recommendations**

SPIRE MISSOURI, INC., d/b/a SPIRE

**SPIRE EAST and SPIRE WEST
GENERAL RATE CASE**

CASE NO. GR-2021-0108

*Jefferson City, Missouri
May 12, 2021*

AN ANALYSIS OF THE COST OF CAPITAL

FOR

SPIRE MISSOURI, INC.

CASE NO. GR-2021-0108

APPENDIX 2

SCHEDULES

BY

Seung Joun Won, PhD

Financial Analysis

MISSOURI PUBLIC SERVICE COMMISSION

May 12, 2021

Spire Missouri, Inc.
Case No. GR-2021-0108

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Spire Missouri, Inc.
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Federal Reserve Discount Rates Changes and Federal Reserve Funds Rates Changes

Date	Federal Reserve Discount Rate	Federal Reserve Funds Rate	Date	Federal Reserve Discount Rate	Federal Reserve Funds Rate
01/01/83	8.50%		01/03/01	5.75%	6.00%
12/31/83	8.50%		01/04/01	5.50%	6.00%
04/09/84	9.00%		01/31/01	5.00%	5.50%
11/21/84	8.50%		03/20/01	4.50%	5.00%
12/24/84	8.00%		04/18/01	4.00%	4.50%
05/20/85	7.50%		05/15/01	3.50%	4.00%
03/07/86	7.00%		06/27/01	3.25%	3.75%
04/21/86	6.50%		08/21/01	3.00%	3.50%
07/11/86	6.00%		09/17/01	2.50%	3.00%
08/21/86	5.50%		10/02/01	2.00%	2.50%
09/04/87	6.00%		11/06/01	1.50%	2.00%
08/09/88	6.50%		12/11/01	1.25%	1.75%
02/24/89	7.00%		11/06/02	0.75%	1.25%
07/13/90		8.00%	01/09/03	2.25%	** 1.25%
10/29/90		7.75%	06/25/03	2.00%	1.00%
11/13/90		7.50%	06/30/04	2.25%	1.25%
12/07/90		7.25%	08/10/04	2.50%	1.50%
12/18/90		7.00%	09/21/04	2.75%	1.75%
12/19/90	6.50%		11/10/04	3.00%	2.00%
01/09/91		6.75%	12/14/04	3.25%	2.25%
02/01/91	6.00%	6.25%	02/02/05	3.50%	2.50%
03/08/91		6.00%	03/22/05	3.75%	2.75%
04/30/91	5.50%	5.75%	05/03/05	4.00%	3.00%
08/06/91		5.50%	06/30/05	4.25%	3.25%
09/13/91	5.00%	5.25%	08/09/05	4.50%	3.50%
10/31/91		5.00%	09/20/05	4.75%	3.75%
11/06/91	4.50%	4.75%	11/01/05	5.00%	4.00%
12/06/91		4.50%	12/13/05	5.25%	4.25%
12/20/91	3.50%	4.00%	01/31/06	5.50%	4.50%
04/09/92		3.75%	03/28/06	5.75%	4.75%
07/02/92	3.00%	3.25%	05/10/06	6.00%	5.00%
09/04/92		3.00%	06/29/06	6.25%	5.25%
01/01/93			08/17/07	5.75%	5.25%
12/31/93	No Changes	No Changes	09/18/07	5.25%	4.75%
02/04/94		3.25%	10/31/07	5.00%	4.50%
03/22/94		3.50%	12/11/07	4.75%	4.25%
04/18/94		3.75%	01/22/08	4.00%	3.50%
05/17/94	3.50%	4.25%	01/30/08	3.50%	3.00%
08/16/94	4.00%	4.75%	03/16/08	3.25%	2.25%
11/15/94	4.75%	5.50%	03/18/08	2.50%	2.25%
02/01/95	5.25%	6.00%	04/30/08	2.25%	2.00%
07/06/95		5.75%	10/08/08	1.75%	1.50%
12/19/95		5.50%	10/28/08	1.25%	1.00%
01/31/96	5.00%	5.25%	12/30/08	0.50%	0% - .25%
03/25/97		5.50%	02/19/10	0.75%	0% - .25%
12/12/97	5.00%		12/17/15	1.00%	0.38%
01/09/98	5.00%		12/15/16	1.25%	0.54%
03/06/98	5.00%		03/16/17	1.50%	0.79%
09/29/98		5.25%	06/15/17	1.75%	1.04%
10/15/98	4.75%	5.00%	12/14/17	2.00%	1.30%
11/17/98	4.50%	4.75%	03/22/18	2.25%	1.51%
06/30/99	4.50%	5.00%	06/14/18	2.50%	1.82%
08/24/99	4.75%	5.25%	09/27/18	2.75%	1.95%
11/16/99	5.00%	5.50%	12/20/18	3.00%	2.27%
02/02/00	5.25%	5.75%	08/01/19	2.75%	2.13%
03/21/00	5.50%	6.00%	09/19/19	2.50%	2.04%
05/19/00	6.00%	6.50%	10/31/19	2.25%	1.83%
			03/04/20	1.75%	0.65%

* Staff began tracking the Federal Funds Rate.

**Revised discount window program begins. Reflects rate on primary credit. This revised discount window policy results in incomparability of the discount rates after January 9, 2003 to discount rates before January 9, 2003.

Source:

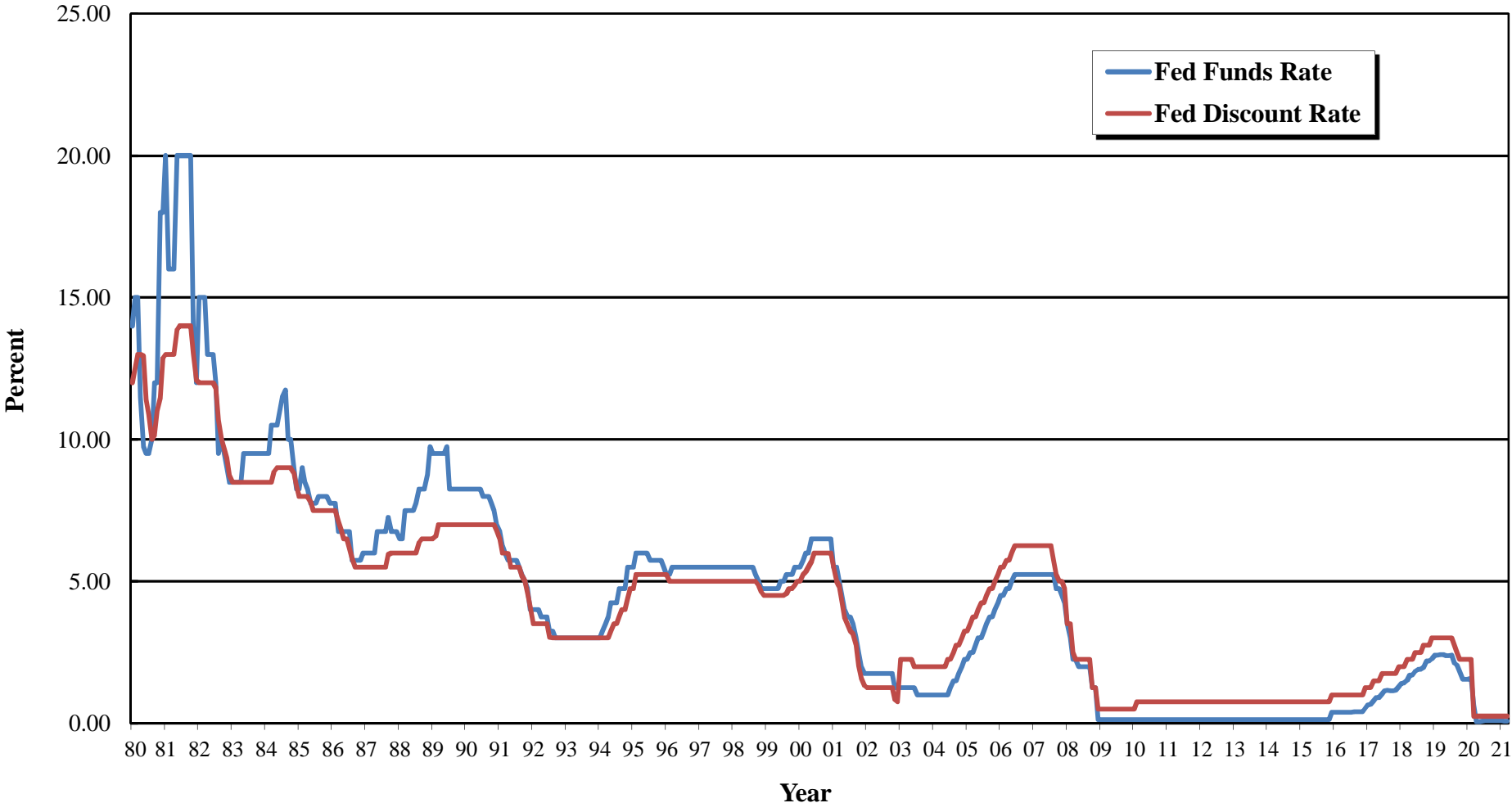
Federal Reserve Discount rate <https://fred.stlouisfed.org/series/INTDSRUSM193N>

Federal Reserve Funds rate <https://fred.stlouisfed.org/series/FEDFUNDS>

Note: Interest rates as of December 31 for each year are underlined.

Spire Missouri, Inc.
Case No. GR-2021-0108

Federal Reserve Discount Rates and Federal Funds Rates
1980 - 2021



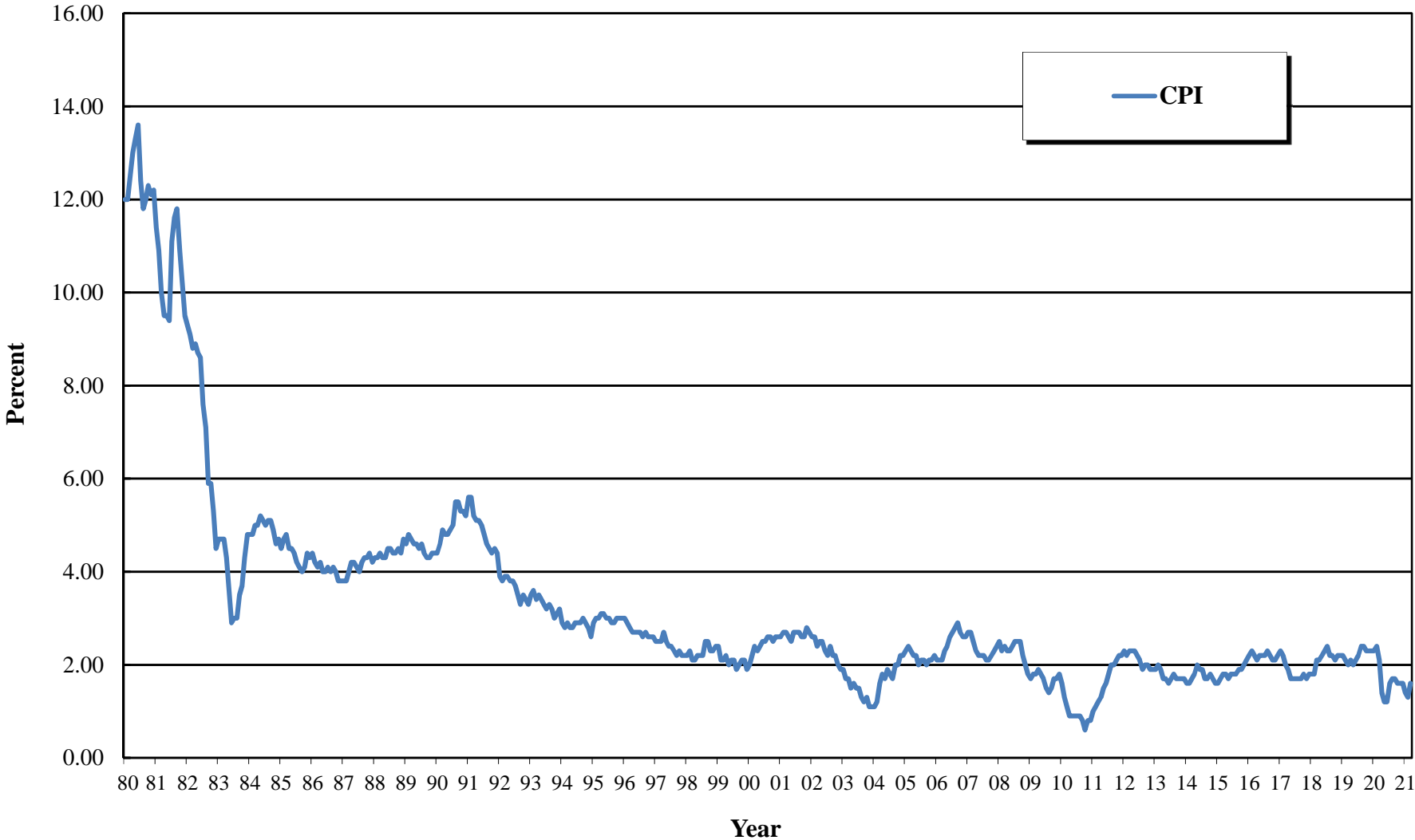
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Rate of Inflation

Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)
Jan 1980	12.00	Jan 1986	4.40	Jan 1992	3.90	Jan 1998	2.20	Jan 2004	1.10	Jan 2010	1.60	Jan 2016	2.20
Feb	12.00	Feb	4.20	Feb	3.80	Feb	2.30	Feb	1.20	Feb	1.30	Feb	2.30
Mar	12.50	Mar	4.10	Mar	3.90	Mar	2.10	Mar	1.60	Mar	1.10	Mar	2.20
Apr	13.00	Apr	4.20	Apr	3.90	Apr	2.10	Apr	1.80	April	0.90	Apr	2.10
May	13.30	May	4.00	May	3.80	May	2.20	May	1.70	May	0.90	May	2.20
Jun	13.60	Jun	4.00	Jun	3.80	Jun	2.20	Jun	1.90	Jun	0.90	Jun	2.20
Jul	12.40	Jul	4.10	Jul	3.70	Jul	2.20	Jul	1.80	Jul	0.90	Jul	2.20
Aug	11.80	Aug	4.00	Aug	3.50	Aug	2.50	Aug	1.70	Aug	0.90	Aug	2.30
Sep	12.00	Sep	4.10	Sep	3.30	Sep	2.50	Sep	2.00	Sep	0.80	Sep	2.20
Oct	12.30	Oct	4.00	Oct	3.50	Oct	2.30	Oct	2.00	Oct	0.60	Oct	2.10
Nov	12.10	Nov	3.80	Nov	3.40	Nov	2.30	Nov	2.20	Nov	0.80	Nov	2.10
Dec	12.20	Dec	3.80	Dec	3.30	Dec	2.40	Dec	2.20	Dec	0.80	Dec	2.20
Jan 1981	11.40	Jan 1987	3.80	Jan 1993	3.50	Jan 1999	2.40	Jan 2005	2.30	Jan 2011	1.00	Jan 2017	2.30
Feb	10.90	Feb	3.80	Feb	3.60	Feb	2.10	Feb	2.40	Feb	1.10	Feb	2.20
Mar	10.00	Mar	4.00	Mar	3.40	Mar	2.10	Mar	2.30	Mar	1.20	Mar	2.00
Apr	9.50	Apr	4.20	Apr	3.50	Apr	2.20	Apr	2.20	Apr	1.30	Apr	1.90
May	9.50	May	4.20	May	3.40	May	2.00	May	2.20	May	1.50	May	1.70
Jun	9.40	Jun	4.10	Jun	3.30	Jun	2.10	Jun	2.00	Jun	1.60	Jun	1.70
Jul	11.10	Jul	4.00	Jul	3.20	Jul	2.10	Jul	2.10	Jul	1.80	July	1.70
Aug	11.60	Aug	4.20	Aug	3.30	Aug	1.90	Aug	2.10	Aug	2.00	Aug	1.70
Sep	11.80	Sep	4.30	Sep	3.20	Sep	2.00	Sep	2.00	Sep	2.00	Sep	1.70
Oct	10.90	Oct	4.30	Oct	3.00	Oct	2.10	Oct	2.10	Oct	2.10	Oct	1.80
Nov	10.20	Nov	4.40	Nov	3.10	Nov	2.10	Nov	2.10	Nov	2.20	Nov	1.70
Dec	9.50	Dec	4.20	Dec	3.20	Dec	1.90	Dec	2.20	Dec	2.20	Dec	1.80
Jan 1982	9.30	Jan 1988	4.30	Jan 1994	2.90	Jan 2000	2.00	Jan 2006	2.10	Jan 2012	2.30	Jan 2018	1.80
Feb	9.10	Feb	4.30	Feb	2.80	Feb	2.20	Feb	2.10	Feb	2.20	Feb	1.80
Mar	8.80	Mar	4.40	Mar	2.90	Mar	2.40	Mar	2.10	Mar	2.30	Mar	2.10
Apr	8.90	Apr	4.30	Apr	2.80	Apr	2.30	Apr	2.30	Apr	2.30	Apr	2.10
May	8.70	May	4.30	May	2.80	May	2.40	May	2.40	May	2.30	May	2.20
Jun	8.60	Jun	4.50	Jun	2.90	Jun	2.50	June	2.60	Jun	2.20	Jun	2.30
Jul	7.60	Jul	4.50	Jul	2.90	Jul	2.50	July	2.70	Jul	2.10	Jul	2.40
Aug	7.10	Aug	4.40	Aug	2.90	Aug	2.60	Aug	2.80	Aug	1.90	Aug	2.20
Sep	5.90	Sep	4.40	Sep	3.00	Sep	2.60	Sep	2.90	Sep	2.00	Sep	2.20
Oct	5.90	Oct	4.50	Oct	2.90	Oct	2.50	Oct	2.70	Oct	2.00	Oct	2.10
Nov	5.30	Nov	4.40	Nov	2.80	Nov	2.60	Nov	2.60	Nov	1.90	Nov	2.20
Dec	4.50	Dec	4.70	Dec	2.60	Dec	2.60	Dec	2.60	Dec	1.90	Dec	2.20
Jan 1983	4.70	Jan 1989	4.60	Jan 1995	2.90	Jan 2001	2.60	Jan 2007	2.70	Jan 2013	1.90	Jan 2019	2.20
Feb	4.70	Feb	4.80	Feb	3.00	Feb	2.70	Feb	2.70	Feb	2.00	Feb	2.10
Mar	4.70	Mar	4.70	Mar	3.00	Mar	2.70	Mar	2.50	Mar	1.90	Mar	2.00
Apr	4.30	Apr	4.60	Apr	3.10	Apr	2.60	Apr	2.30	Apr	1.70	Apr	2.10
May	3.60	May	4.60	May	3.10	May	2.50	May	2.20	May	1.70	May	2.00
Jun	2.90	Jun	4.50	Jun	3.00	Jun	2.70	Jun	2.20	Jun	1.60	Jun	2.10
Jul	3.00	Jul	4.60	Jul	3.00	Jul	2.70	Jul	2.20	Jul	1.70	Jul	2.20
Aug	3.00	Aug	4.40	Aug	2.90	Aug	2.70	Aug	2.10	Aug	1.80	Aug	2.40
Sep	3.50	Sep	4.30	Sep	2.90	Sep	2.60	Sep	2.10	Sept	1.70	Sept	2.40
Oct	3.70	Oct	4.30	Oct	3.00	Oct	2.60	Oct	2.20	Oct	1.70	Oct	2.30
Nov	4.30	Nov	4.40	Nov	3.00	Nov	2.80	Nov	2.30	Nov	1.70	Nov	2.30
Dec	4.80	Dec	4.40	Dec	3.00	Dec	2.70	Dec	2.40	Dec	1.70	Dec	2.30
Jan 1984	4.80	Jan 1990	4.40	Jan 1996	3.00	Jan 2002	2.60	Jan 2008	2.50	Jan 2014	1.60	Jan 2020	2.30
Feb	4.80	Feb	4.60	Feb	2.90	Feb	2.60	Feb	2.30	Feb	1.60	Feb	2.40
Mar	5.00	Mar	4.90	Mar	2.80	Mar	2.40	Mar	2.40	Mar	1.70	Mar	2.10
Apr	5.00	Apr	4.80	Apr	2.70	Apr	2.50	Apr	2.30	Apr	1.80	Apr	1.40
May	5.20	May	4.80	May	2.70	May	2.50	May	2.30	May	2.00	May	1.20
Jun	5.10	Jun	4.90	Jun	2.70	Jun	2.30	Jun	2.40	Jun	1.90	Jun	1.20
Jul	5.00	Jul	5.00	Jul	2.70	Jul	2.20	Jul	2.50	Jul	1.90	Jul	1.60
Aug	5.10	Aug	5.50	Aug	2.60	Aug	2.40	Aug	2.50	Aug	1.70	Aug	1.70
Sep	5.10	Sep	5.50	Sep	2.70	Sep	2.20	Sep	2.50	Sep	1.70	Sep	1.70
Oct	4.90	Oct	5.30	Oct	2.60	Oct	2.20	Oct	2.20	Oct	1.80	Oct	1.60
Nov	4.60	Nov	5.30	Nov	2.60	Nov	2.00	Nov	2.00	Nov	1.70	Nov	1.60
Dec	4.70	Dec	5.20	Dec	2.60	Dec	1.90	Dec	1.80	Dec	1.60	Dec	1.60
Jan 1985	4.50	Jan 1991	5.60	Jan 1997	2.50	Jan 2003	1.90	Jan 2009	1.70	Jan 2015	1.60	Jan 2021	1.40
Feb	4.70	Feb	5.60	Feb	2.50	Feb	1.70	Feb	1.80	Feb	1.70	Feb	1.30
Mar	4.80	Mar	5.20	Mar	2.50	Mar	1.70	Mar	1.80	Mar	1.80	Mar	1.60
Apr	4.50	Apr	5.10	Apr	2.70	Apr	1.50	Apr	1.90	Apr	1.80	Apr	1.60
May	4.50	May	5.10	May	2.50	May	1.60	May	1.80	May	1.70	May	1.60
Jun	4.40	Jun	5.00	Jun	2.40	Jun	1.50	Jun	1.70	Jun	1.80	Jun	1.60
Jul	4.20	Jul	4.80	Jul	2.40	Jul	1.50	Jul	1.50	Jul	1.80	Jul	1.60
Aug	4.10	Aug	4.60	Aug	2.30	Aug	1.30	Aug	1.40	Aug	1.80	Aug	1.60
Sep	4.00	Sep	4.50	Sep	2.20	Sep	1.20	Sep	1.50	Sep	1.90	Sep	1.60
Oct	4.10	Oct	4.40	Oct	2.30	Oct	1.30	Oct	1.70	Oct	1.90	Oct	1.60
Nov	4.40	Nov	4.50	Nov	2.20	Nov	1.10	Nov	1.70	Nov	2.00	Nov	1.60
Dec	4.30	Dec	4.40	Dec	2.20	Dec	1.10	Dec	1.80	Dec	2.10	Dec	1.60

Source: U.S. Dept. of Labor, Bureau of Labor Statistics, Consumer Price Index - All Urban Consumers less food and energy, Change for 12-Month Period, Bureau of Labor Statistics, <https://www.bls.gov/cpi/data.htm>

Rate of Inflation
1980 - 2021



**Spire Missouri, Inc.
Case No. GR-2021-0108**

Average Yields on Moody's Public Utility Bonds

Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)
Jan 1980	12.12	Jan 1986	10.66	Jan 1992	8.67	Jan 1998	7.03	Jan 2004	6.23	Jan 2010	5.83	Jan 2016	4.62
Feb	13.48	Feb	10.16	Feb	8.77	Feb	7.09	Feb	6.17	Feb	5.94	Feb	4.44
Mar	14.33	Mar	9.33	Mar	8.84	Mar	7.13	Mar	6.01	Mar	5.90	Mar	4.40
Apr	13.50	Apr	9.02	Apr	8.79	Apr	7.12	Apr	6.38	Apr	5.87	Apr	4.16
May	12.17	May	9.52	May	8.72	May	7.11	May	6.68	May	5.59	May	4.06
Jun	11.87	Jun	9.51	Jun	8.64	Jun	6.99	Jun	6.53	Jun	5.62	Jun	3.93
Jul	12.12	Jul	9.19	Jul	8.46	Jul	6.99	Jul	6.34	Jul	5.41	Jul	3.70
Aug	12.82	Aug	9.15	Aug	8.34	Aug	6.96	Aug	6.18	Aug	5.10	Aug	3.73
Sep	13.29	Sep	9.42	Sep	8.32	Sep	6.88	Sep	6.01	Sep	5.10	Sep	3.80
Oct	13.53	Oct	9.39	Oct	8.44	Oct	6.88	Oct	5.95	Oct	5.20	Oct	3.90
Nov	14.07	Nov	9.15	Nov	8.53	Nov	6.96	Nov	5.97	Nov	5.45	Nov	4.21
Dec	14.48	Dec	8.96	Dec	8.36	Dec	6.84	Dec	5.93	Dec	5.64	Dec	4.39
Jan 1981	14.22	Jan 1987	8.77	Jan 1993	8.23	Jan 1999	6.87	Jan 2005	5.80	Jan 2011	5.64	Jan 2017	4.24
Feb	14.84	Feb	8.81	Feb	8.00	Feb	7.00	Feb	5.64	Feb	5.73	Feb	4.25
Mar	14.86	Mar	8.75	Mar	7.85	Mar	7.18	Mar	5.86	Mar	5.62	Mar	4.30
Apr	15.32	Apr	9.30	Apr	7.76	Apr	7.16	Apr	5.72	Apr	5.62	Apr	4.19
May	15.84	May	9.82	May	7.78	May	7.42	May	5.60	May	5.38	May	4.19
Jun	15.27	Jun	9.87	Jun	7.68	Jun	7.70	Jun	5.39	Jun	5.32	Jun	4.01
Jul	15.87	Jul	10.01	Jul	7.53	Jul	7.66	Jul	5.50	Jul	5.34	Jul	4.06
Aug	16.33	Aug	10.33	Aug	7.21	Aug	7.86	Aug	5.51	Aug	4.78	Aug	3.92
Sep	16.89	Sep	11.00	Sep	7.01	Sep	7.87	Sep	5.54	Sep	4.61	Sep	3.93
Oct	16.76	Oct	11.32	Oct	6.99	Oct	8.02	Oct	5.79	Oct	4.66	Oct	3.97
Nov	15.50	Nov	10.82	Nov	7.30	Nov	7.86	Nov	5.88	Nov	4.37	Nov	3.88
Dec	15.77	Dec	10.99	Dec	7.33	Dec	8.04	Dec	5.83	Dec	4.47	Dec	3.85
Jan 1982	16.73	Jan 1988	10.75	Jan 1994	7.31	Jan 2000	8.22	Jan 2006	5.77	Jan 2012	4.48	Jan 2018	3.91
Feb	16.72	Feb	10.11	Feb	7.44	Feb	8.10	Feb	5.83	Feb	4.47	Feb	4.15
Mar	16.07	Mar	10.11	Mar	7.83	Mar	8.14	Mar	5.98	Mar	4.59	Mar	4.21
Apr	15.82	Apr	10.53	Apr	8.20	Apr	8.14	Apr	6.28	Apr	4.54	Apr	4.24
May	15.60	May	10.75	May	8.32	May	8.56	May	6.39	May	4.36	May	4.36
Jun	16.18	Jun	10.71	Jun	8.31	Jun	8.22	June	6.39	Jun	4.26	Jun	4.37
Jul	16.04	Jul	10.96	Jul	8.47	Jul	8.17	July	6.37	Jul	4.12	Jul	4.35
Aug	15.22	Aug	11.09	Aug	8.41	Aug	8.06	Aug	6.20	Aug	4.18	Aug	4.33
Sep	14.56	Sep	10.56	Sep	8.65	Sep	8.15	Sep	6.03	Sep	4.17	Sep	4.41
Oct	13.88	Oct	9.92	Oct	8.88	Oct	8.08	Oct	6.01	Oct	4.04	Oct	4.56
Nov	13.58	Nov	9.89	Nov	9.00	Nov	8.03	Nov	5.82	Nov	3.95	Nov	4.65
Dec	13.55	Dec	10.02	Dec	8.79	Dec	7.79	Dec	5.83	Dec	4.10	Dec	4.51
Jan 1983	13.46	Jan 1989	10.02	Jan 1995	8.77	Jan 2001	7.76	Jan 2007	5.96	Jan 2013	4.24	Jan 2019	4.48
Feb	13.60	Feb	10.02	Feb	8.56	Feb	7.69	Feb	5.91	Feb	4.29	Feb	4.35
Mar	13.28	Mar	10.16	Mar	8.41	Mar	7.59	Mar	5.87	Mar	4.29	Mar	4.26
Apr	13.03	Apr	10.14	Apr	8.30	Apr	7.81	Apr	6.01	Apr	4.08	Apr	4.18
May	13.00	May	9.92	May	7.93	May	7.88	May	6.03	May	4.24	May	4.10
Jun	13.17	Jun	9.49	Jun	7.62	Jun	7.75	Jun	6.34	Jun	4.63	Jun	3.93
Jul	13.28	Jul	9.34	Jul	7.73	Jul	7.71	Jul	6.28	Jul	4.78	Jul	3.79
Aug	13.50	Aug	9.37	Aug	7.86	Aug	7.57	Aug	6.28	Aug	4.85	Aug	3.36
Sep	13.35	Sep	9.43	Sep	7.62	Sep	7.73	Sep	6.24	Sept	4.90	Sept	3.44
Oct	13.19	Oct	9.37	Oct	7.46	Oct	7.64	Oct	6.17	Oct	4.78	Oct	3.45
Nov	13.33	Nov	9.33	Nov	7.40	Nov	7.61	Nov	6.04	Nov	4.86	Nov	3.48
Dec	13.48	Dec	9.31	Dec	7.21	Dec	7.86	Dec	6.23	Dec	4.88	Dec	3.45
Jan 1984	13.40	Jan 1990	9.44	Jan 1996	7.20	Jan 2002	7.69	Jan 2008	6.08	Jan 2014	4.72	Jan 2020	3.34
Feb	13.50	Feb	9.66	Feb	7.37	Feb	7.62	Feb	6.28	Feb	4.64	Feb	3.16
Mar	14.03	Mar	9.75	Mar	7.72	Mar	7.83	Mar	6.29	Mar	4.64	Mar	3.59
Apr	14.30	Apr	9.87	Apr	7.88	Apr	7.74	Apr	6.36	Apr	4.52	Apr	3.31
May	14.95	May	9.89	May	7.99	May	7.76	May	6.38	May	4.37	May	3.22
Jun	15.16	Jun	9.69	Jun	8.07	Jun	7.67	Jun	6.50	Jun	4.42	Jun	3.10
Jul	14.92	Jul	9.66	Jul	8.02	Jul	7.54	Jul	6.50	Jul	4.35	Jul	2.77
Aug	14.29	Aug	9.84	Aug	7.84	Aug	7.34	Aug	6.48	Aug	4.28	Aug	2.76
Sep	14.04	Sep	10.01	Sep	8.01	Sep	7.23	Sep	6.59	Sep	4.40	Sep	2.88
Oct	13.68	Oct	9.94	Oct	7.76	Oct	7.43	Oct	7.70	Oct	4.24	Oct	2.98
Nov	13.15	Nov	9.76	Nov	7.48	Nov	7.31	Nov	7.80	Nov	4.29	Nov	2.89
Dec	12.96	Dec	9.57	Dec	7.58	Dec	7.20	Dec	6.87	Dec	4.18	Dec	2.80
Jan 1985	12.88	Jan 1991	9.56	Jan 1997	7.79	Jan 2003	7.13	Jan 2009	6.77	Jan 2015	3.83	Jan 2021	2.94
Feb	13.00	Feb	9.31	Feb	7.68	Feb	6.92	Feb	6.72	Feb	3.91	Feb	3.13
Mar	13.66	Mar	9.39	Mar	7.92	Mar	6.80	Mar	6.85	Mar	3.97	Mar	3.48
Apr	13.42	Apr	9.30	Apr	8.08	Apr	6.68	Apr	6.90	Apr	3.96	Apr	
May	12.89	May	9.29	May	7.94	May	6.35	May	6.83	May	4.38	May	
Jun	11.91	Jun	9.44	Jun	7.77	Jun	6.21	Jun	6.54	Jun	4.60	Jun	
Jul	11.88	Jul	9.40	Jul	7.52	Jul	6.54	Jul	6.15	Jul	4.63	Jul	
Aug	11.93	Aug	9.16	Aug	7.57	Aug	6.78	Aug	5.80	Aug	4.54	Aug	
Sep	11.95	Sep	9.03	Sep	7.50	Sep	6.58	Sep	5.60	Sep	4.68	Sep	
Oct	11.84	Oct	8.99	Oct	7.37	Oct	6.50	Oct	5.64	Oct	4.63	Oct	
Nov	11.33	Nov	8.93	Nov	7.24	Nov	6.44	Nov	5.71	Nov	4.73	Nov	
Dec	10.82	Dec	8.76	Dec	7.16	Dec	6.35	Dec	5.86	Dec	4.69	Dec	

Source:
<https://fred.stlouisfed.org/series/DBAA>

Spire Missouri, Inc.
Case No. GR-2021-0108

Average Yields on Thirty-Year U.S. Treasury Bonds

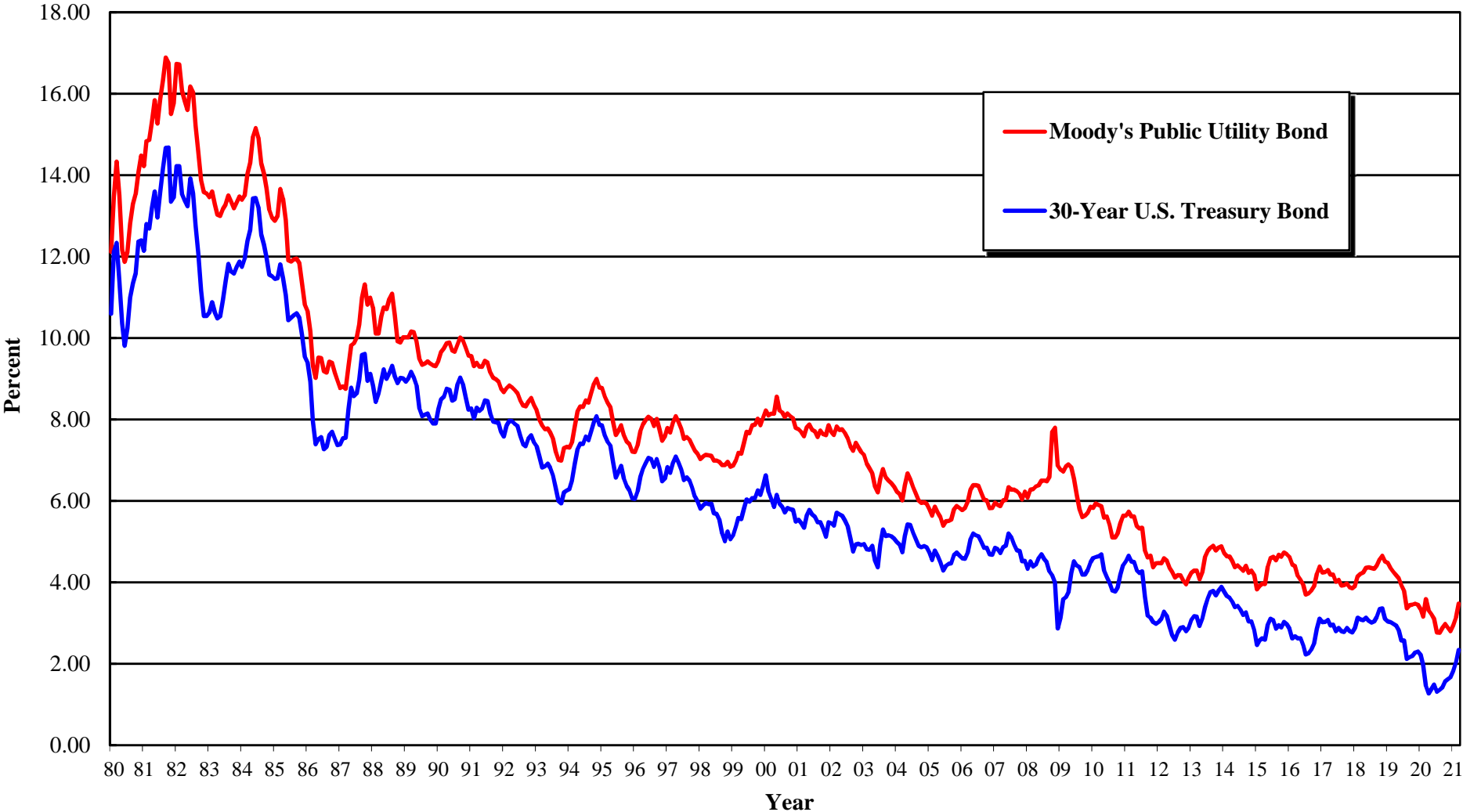
Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)	Mo/Year	Rate (%)
Jan 1980	10.60	Jan 1986	9.40	Jan 1992	7.58	Jan 1998	5.81	Jan 2004	4.99	Jan 2010	4.60	Jan 2016	2.86
Feb	12.13	Feb	8.93	Feb	7.85	Feb	5.89	Feb	4.93	Feb	4.62	Feb	2.62
Mar	12.34	Mar	7.96	Mar	7.97	Mar	5.95	Mar	4.74	Mar	4.64	Mar	2.68
Apr	11.40	Apr	7.39	Apr	7.96	Apr	5.92	Apr	5.14	Apr	4.69	Apr	2.62
May	10.36	May	7.52	May	7.89	May	5.93	May	5.42	May	4.29	May	2.63
Jun	9.81	Jun	7.57	Jun	7.84	Jun	5.70	Jun	5.41	Jun	4.13	Jun	2.45
Jul	10.24	Jul	7.27	Jul	7.60	Jul	5.68	Jul	5.22	Jul	3.99	Jul	2.23
Aug	11.00	Aug	7.33	Aug	7.39	Aug	5.54	Aug	5.06	Aug	3.80	Aug	2.26
Sep	11.34	Sep	7.62	Sep	7.34	Sep	5.20	Sep	4.90	Sep	3.77	Sep	2.35
Oct	11.59	Oct	7.70	Oct	7.53	Oct	5.01	Oct	4.86	Oct	3.87	Oct	2.50
Nov	12.37	Nov	7.52	Nov	7.61	Nov	5.25	Nov	4.89	Nov	4.19	Nov	2.86
Dec	12.40	Dec	7.37	Dec	7.44	Dec	5.06	Dec	4.86	Dec	4.42	Dec	3.11
Jan 1981	12.14	Jan 1987	7.39	Jan 1993	7.44	Jan 1999	5.16	Jan 2005	4.73	Jan 2011	4.52	Jan 2017	3.02
Feb	12.80	Feb	7.54	Feb	7.09	Feb	5.37	Feb	4.55	Feb	4.65	Feb	3.03
Mar	12.69	Mar	7.55	Mar	6.82	Mar	5.58	Mar	4.78	Mar	4.51	Mar	3.08
Apr	13.20	Apr	8.25	Apr	6.85	Apr	5.55	Apr	4.65	Apr	4.50	Apr	2.94
May	13.60	May	8.78	May	6.92	May	5.81	May	4.49	May	4.29	May	2.96
Jun	12.96	Jun	8.57	Jun	6.81	Jun	6.04	Jun	4.29	Jun	4.23	Jun	2.80
Jul	13.59	Jul	8.64	Jul	6.63	Jul	5.98	Jul	4.41	Jul	4.27	Jul	2.88
Aug	14.17	Aug	8.97	Aug	6.32	Aug	6.07	Aug	4.46	Aug	3.65	Aug	2.80
Sep	14.67	Sep	9.59	Sep	6.00	Sep	6.07	Sep	4.47	Sep	3.18	Sep	2.78
Oct	14.68	Oct	9.61	Oct	5.94	Oct	6.26	Oct	4.67	Oct	3.13	Oct	2.88
Nov	13.35	Nov	8.95	Nov	6.21	Nov	6.15	Nov	4.73	Nov	3.02	Nov	2.80
Dec	13.45	Dec	9.12	Dec	6.25	Dec	6.35	Dec	4.66	Dec	2.98	Dec	2.77
Jan 1982	14.22	Jan 1988	8.83	Jan 1994	6.29	Jan 2000	6.63	Jan 2006	4.59	Jan 2012	3.03	Jan 2018	2.88
Feb	14.22	Feb	8.43	Feb	6.49	Feb	6.23	Feb	4.58	Feb	3.11	Feb	3.13
Mar	13.53	Mar	8.63	Mar	6.91	Mar	6.05	Mar	4.73	Mar	3.28	Mar	3.09
Apr	13.37	Apr	8.95	Apr	7.27	Apr	5.85	Apr	5.06	Apr	3.18	Apr	3.07
May	13.24	May	9.23	May	7.41	May	6.15	May	5.20	May	2.93	May	3.13
Jun	13.92	Jun	9.00	Jun	7.40	Jun	5.93	June	5.16	Jun	2.70	Jun	3.05
Jul	13.55	Jul	9.14	Jul	7.58	Jul	5.85	July	5.13	Jul	2.59	Jul	3.01
Aug	12.77	Aug	9.32	Aug	7.49	Aug	5.72	Aug	5.00	Aug	2.77	Aug	3.04
Sep	12.07	Sep	9.06	Sep	7.71	Sep	5.83	Sep	4.85	Sep	2.88	Sep	3.15
Oct	11.17	Oct	8.89	Oct	7.94	Oct	5.80	Oct	4.85	Oct	2.90	Oct	3.34
Nov	10.54	Nov	9.02	Nov	8.08	Nov	5.78	Nov	4.69	Nov	2.80	Nov	3.36
Dec	10.54	Dec	9.01	Dec	7.87	Dec	5.49	Dec	4.68	Dec	2.88	Dec	3.10
Jan 1983	10.63	Jan 1989	8.93	Jan 1995	7.85	Jan 2001	5.54	Jan 2007	4.85	Jan 2013	3.08	Jan 2019	3.04
Feb	10.88	Feb	9.01	Feb	7.61	Feb	5.45	Feb	4.82	Feb	3.17	Feb	3.02
Mar	10.63	Mar	9.17	Mar	7.45	Mar	5.34	Mar	4.72	Mar	3.16	Mar	2.98
Apr	10.48	Apr	9.03	Apr	7.36	Apr	5.65	Apr	4.86	Apr	2.93	Apr	2.94
May	10.53	May	8.83	May	6.95	May	5.78	May	4.90	May	3.11	May	2.82
Jun	10.93	Jun	8.27	Jun	6.57	Jun	5.67	Jun	5.20	Jun	3.40	Jun	2.57
Jul	11.40	Jul	8.08	Jul	6.72	Jul	5.61	Jul	5.11	Jul	3.61	Jul	2.57
Aug	11.82	Aug	8.12	Aug	6.86	Aug	5.48	Aug	4.93	Aug	3.76	Aug	2.12
Sep	11.63	Sep	8.15	Sep	6.55	Sep	5.48	Sep	4.79	Sept	3.79	Sept	2.16
Oct	11.58	Oct	8.00	Oct	6.37	Oct	5.32	Oct	4.77	Oct	3.68	Oct	2.19
Nov	11.75	Nov	7.90	Nov	6.26	Nov	5.12	Nov	4.52	Nov	3.80	Nov	2.28
Dec	11.88	Dec	7.90	Dec	6.06	Dec	5.48	Dec	4.53	Dec	3.89	Dec	2.30
Jan 1984	11.75	Jan 1990	8.26	Jan 1996	6.05	Jan 2002	5.45	Jan 2008	4.33	Jan 2014	3.77	Jan 2020	2.22
Feb	11.95	Feb	8.50	Feb	6.24	Feb	5.39	Feb	4.52	Feb	3.66	Feb	1.97
Mar	12.38	Mar	8.56	Mar	6.60	Mar	5.71	Mar	4.39	Mar	3.62	Mar	1.46
Apr	12.65	Apr	8.76	Apr	6.79	Apr	5.67	Apr	4.44	Apr	3.52	Apr	1.27
May	13.43	May	8.73	May	6.93	May	5.64	May	4.60	May	3.39	May	1.38
Jun	13.44	Jun	8.46	Jun	7.06	Jun	5.52	Jun	4.69	Jun	3.42	Jun	1.49
Jul	13.21	Jul	8.50	Jul	7.03	Jul	5.38	Jul	4.57	Jul	3.33	Jul	1.31
Aug	12.54	Aug	8.86	Aug	6.84	Aug	5.08	Aug	4.50	Aug	3.20	Aug	1.36
Sep	12.29	Sep	9.03	Sep	7.03	Sep	4.76	Sep	4.27	Sep	3.26	Sep	1.42
Oct	11.98	Oct	8.86	Oct	6.81	Oct	4.93	Oct	4.17	Oct	3.04	Oct	1.57
Nov	11.56	Nov	8.54	Nov	6.48	Nov	4.95	Nov	4.00	Nov	3.04	Nov	1.62
Dec	11.52	Dec	8.24	Dec	6.55	Dec	4.92	Dec	2.87	Dec	2.83	Dec	1.67
Jan 1985	11.45	Jan 1991	8.27	Jan 1997	6.83	Jan 2003	4.94	Jan 2009	3.13	Jan 2015	2.46	Jan 2021	1.82
Feb	11.47	Feb	8.03	Feb	6.69	Feb	4.81	Feb	3.59	Feb	2.57	Feb	2.04
Mar	11.81	Mar	8.29	Mar	6.93	Mar	4.80	Mar	3.64	Mar	2.63	Mar	2.34
Apr	11.47	Apr	8.21	Apr	7.09	Apr	4.90	Apr	3.76	Apr	2.59	Apr	
May	11.05	May	8.27	May	6.94	May	4.53	May	4.23	May	2.96	May	
Jun	10.44	Jun	8.47	Jun	6.77	Jun	4.37	Jun	4.52	Jun	3.11	Jun	
Jul	10.50	Jul	8.45	Jul	6.51	Jul	4.93	Jul	4.41	Jul	3.07	Jul	
Aug	10.56	Aug	8.14	Aug	6.58	Aug	5.30	Aug	4.37	Aug	2.86	Aug	
Sep	10.61	Sep	7.95	Sep	6.50	Sep	5.14	Sep	4.19	Sep	2.95	Sep	
Oct	10.50	Oct	7.93	Oct	6.33	Oct	5.16	Oct	4.19	Oct	2.89	Oct	
Nov	10.06	Nov	7.92	Nov	6.11	Nov	5.13	Nov	4.31	Nov	3.03	Nov	
Dec	9.54	Dec	7.70	Dec	5.99	Dec	5.08	Dec	4.49	Dec	2.97	Dec	

Sources:

<http://research.stlouisfed.org/fred2/data/GS30.txt>

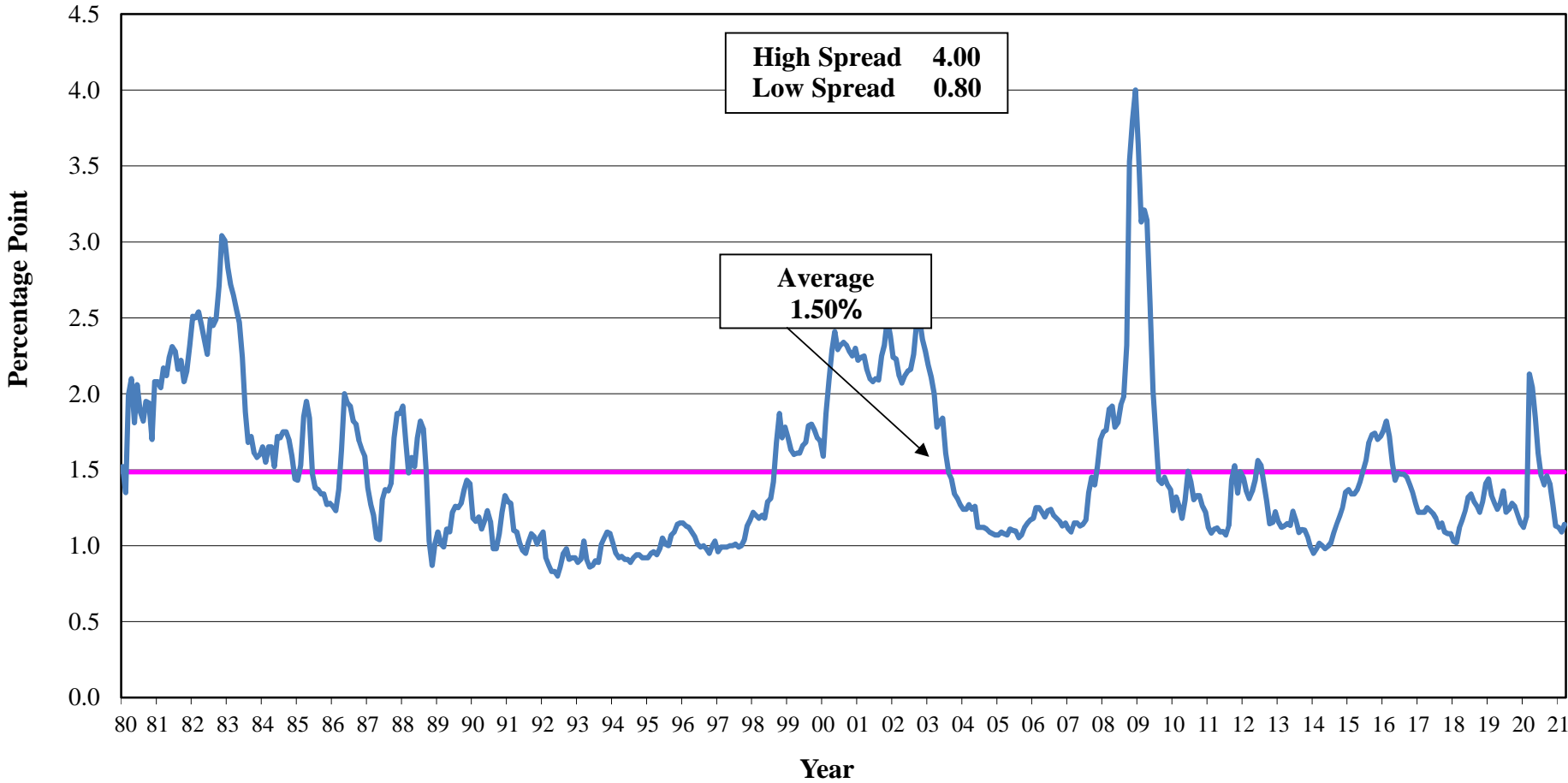
Spire Missouri, Inc.
Case No. GR-2021-0108

Average Yields on Mergent's Public Utility Bonds and
Thirty-Year U.S. Treasury Bonds (1980 - 2021)

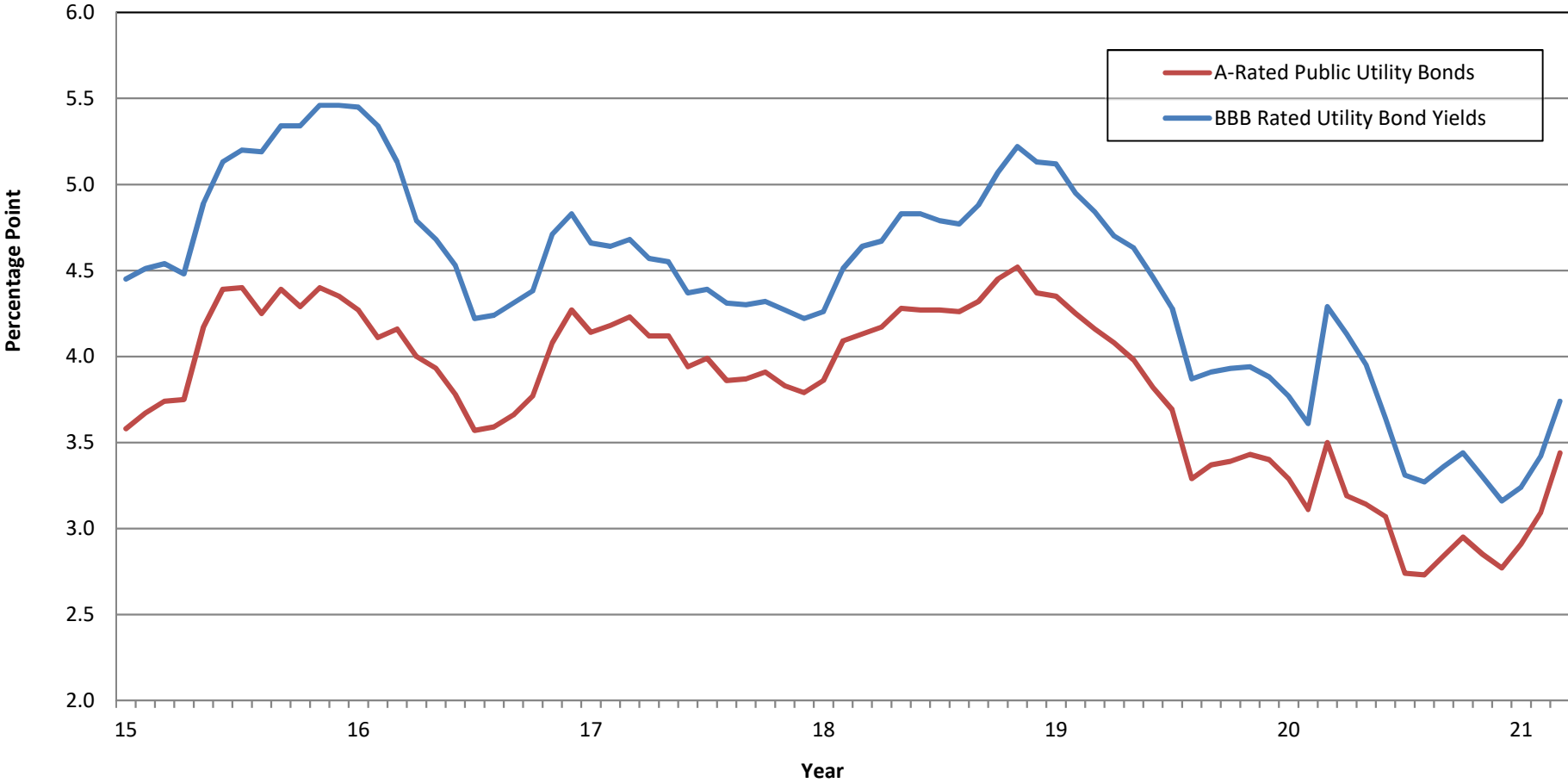


Spire Missouri, Inc.
Case No. GR-2021-0108

Monthly Spreads Between Yields on Moody's Public Utility Bonds and
30-Year U.S. Treasury Bonds (1980 - 2021)



**Average Yields on A-rated Utility Bonds and BBB-rated Utility Bonds
(2015- 2021)**



Spire Missouri, Inc.
Case No. GR-2021-0108

**Historical Consolidated Capital Structures for
Spire Inc.**

(Dollars in Millions)

<u>Capital Components</u>	<u>March 31, 2019</u>	<u>June 30, 2019</u>	<u>September 30, 2019</u>	<u>December 31, 2019</u>
Common Equity	\$2,406.0	\$2,616.6	\$2,543.0	\$2,586.0
Preferred Stock	\$0.0	\$242.0	\$242.0	\$242.0
Long-Term Debt	\$2,041.9	\$2,042.3	\$2,082.6	\$2,484.4
	<u>\$4,447.9</u>	<u>\$4,900.9</u>	<u>\$4,867.6</u>	<u>\$5,312.4</u>

<u>Capital Components</u>	<u>March 31, 2020</u>	<u>June 30, 2020</u>	<u>September 30, 2020</u>	<u>December 31, 2020</u>
Common Equity	\$2,665.6	\$2,558.4	\$2,522.3	\$2,586.8
Preferred Stock	\$242.0	\$242.0	\$242.0	\$242.0
Long-Term Debt	\$2,242.8	\$2,242.4	\$2,181.7	\$2,275.6
	<u>\$5,150.4</u>	<u>\$5,042.8</u>	<u>\$4,946.0</u>	<u>\$5,104.4</u>

**Historical Consolidated Capital Structures for
Spire Missouri**

(Dollars in Millions)

<u>Capital Components</u>	<u>March 31, 2019</u>	<u>June 30, 2019</u>	<u>September 30, 2019</u>	<u>December 31, 2019</u>
Common Equity	\$1,374.0	\$1,376.3	\$1,339.3	\$1,376.1
Preferred Stock	\$0.0	\$0.0	\$0.0	\$0.0
Long-Term Debt	\$2,298.7	\$2,301.1	\$925.0	\$1,098.6
Total	<u>\$3,672.7</u>	<u>\$3,677.4</u>	<u>\$2,264.3</u>	<u>\$2,474.7</u>

<u>Capital Components</u>	<u>March 31, 2020</u>	<u>June 30, 2020</u>	<u>September 30, 2020</u>	<u>December 31, 2020</u>
Common Equity	\$1,439.1	\$1,434.4	\$1,435.10	\$1,491.8
Preferred Stock	\$0.0	\$0.0	\$0.00	\$0.0
Long-Term Debt	\$1,098.7	\$1,091.9	\$1,098.60	\$1,092.2
Total	<u>\$2,537.8</u>	<u>\$2,526.3</u>	<u>\$2,533.7</u>	<u>\$2,584.0</u>

Sources:

SEC Form 10-Q

Spire Missouri, Inc.
Case No. GR-2021-0108

**Historical Consolidated Capital Structures for
Spire Inc.**
(Percentage)

<u>Capital Components</u>	<u>March 31, 2019</u>	<u>June 30, 2019</u>	<u>September 30, 2019</u>	<u>December 31, 2019</u>
Common Equity	54.09%	53.39%	52.24%	48.68%
Preferred Stock	0.00%	4.94%	4.97%	4.56%
Long-Term Debt	45.91%	41.67%	42.78%	46.77%
	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>

<u>Capital Components</u>	<u>March 31, 2020</u>	<u>June 30, 2020</u>	<u>September 30, 2020</u>	<u>December 31, 2020</u>
Common Equity	51.76%	50.73%	51.00%	50.68%
Preferred Stock	4.70%	4.80%	4.89%	4.74%
Long-Term Debt	43.55%	44.47%	44.11%	44.58%
	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>

**Historical Consolidated Capital Structures for
Spire Missouri**
(Percentage)

<u>Capital Components</u>	<u>March 31, 2019</u>	<u>June 30, 2019</u>	<u>September 30, 2019</u>	<u>December 31, 2019</u>
Common Equity	37.41%	37.43%	59.15%	55.61%
Preferred Stock	0.00%	0.00%	0.00%	0.00%
Long-Term Debt	62.59%	62.57%	40.85%	44.39%
Total	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>

<u>Capital Components</u>	<u>March 31, 2020</u>	<u>June 30, 2020</u>	<u>September 30, 2020</u>	<u>December 31, 2020</u>
Common Equity	56.71%	56.78%	56.64%	57.73%
Preferred Stock	0.00%	0.00%	0.00%	0.00%
Long-Term Debt	43.29%	43.22%	43.36%	42.27%
Total	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>

Sources:
Form 10-Q

Spire Missouri, Inc.
Case No. GR-2021-0108

Capital Structure as of December 31, 2020
for Spire
(Dollars in Millions)

Capital Component	Amount	Percentage of Capital
Common Stock Equity	\$2,587	50.68%
Preferred Stock	\$242	4.74%
Long-Term Debt	\$2,276	44.58%
Total Capitalization	<u><u>\$5,104</u></u>	<u><u>100.00%</u></u>

Sources:
Form 10-Q, December 2020

Capital Structure as of December 31, 2020
for Spire Missouri
(Dollars in Millions)

Capital Component	Amount	Percentage of Capital
Common Stock Equity	1,569	54.25%
Preferred Stock	0	0.00%
Long-Term Debt	1,323	45.75%
Total Capitalization	<u><u>2,892</u></u>	<u><u>100%</u></u>

Sources:
WES-1 SCH-F, Selinger's Direct Testimony
Staff's Data Request No. 0109

Spire Missouri, Inc.
Case No. GR-2021-0108

Embedded Cost of Long-Term Debt as of September 30, 2020
for Spire Inc. & Spire Missouri

Spire, Inc.

(In millions)

Total Annual Cost:	**	_____	**
Total Carrying Value:	**	_____	**
Embedded Cost = Total Annual Cost/Total Carrying Value	**	_____	**

Note:

Source: Spire Missouri objected to provide Spire's information of Staff's Data Request No. 0111, 10K

Spire Missouri

(In millions)

Total Annual Cost:	**	_____	**
Total Carrying Value:	**	_____	**
Embedded Cost = Total Annual Cost/Total Carrying Value	**	_____	**

Note:

Source: Spire Missouri's response of Staff's Data Request No. 0111.

Spire Missouri, Inc.
Case No. GR-2021-0108

Embedded Cost of Preferred Stock as of December 31, 2020
for Spire Inc. & Spire Missouri

Spire, Inc.

Total Annual Cost:	<u>\$14,750,000</u>
Total Carrying Value:	<u>\$242,343,925</u>
Embedded Cost = Total Annual Cost/Total Carrying Value	<u>6.09%</u>

Note

Source: Staff's Data Request No. 0111, 10K

Spire Missouri

Total Annual Cost:	N/A
Total Carrying Value:	\$0
Embedded Cost = Total Annual Cost/Total Carrying Value	N/A

Note

Source: 10K

SPIRE MISSOURI, INC.
CASE NO. GR-2021-0108
PROXY GROUP SCREENING DATA AND RESULTS

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]		
Gas Utility Companies	Ticker	Stock Publicly Traded	Information Provided by Value Line	Information Provided by Reuters	5-Year Data Available	Dividends	At Least Investment Grade Credit Rating	S&P Global Rating	Moody's	At least 65% of Regulated Income from Gas Utility Operations	At least 65% of Assets are Gas Distribution Operations	No Reduced Dividend Since 2015	Positive Growth Rates from at Least Two Sources	Covered by More Than 2 Analyst	Comparable Company Met All Criteria
Atmos Energy Corporation	ATO	Yes	Yes	Yes	Yes	Yes	Yes	A-	A1	Yes	Yes	Yes	Yes	Yes	Yes
New Jersey Resources Corporation	NJR	Yes	Yes	Yes	Yes	Yes	Yes	NR	A1	Yes	Yes	Yes	Yes	Yes	Yes
NiSource Inc.	NI	Yes	Yes	Yes	Yes	Yes	Yes	BBB+	Baa2	No	No	No	Yes	Yes	No
Northwest Natural Holding Company	NWN	Yes	Yes	Yes	Yes	Yes	Yes	N/A	Baa1	Yes	Yes	Yes	Yes	Yes	Yes
ONE Gas, Inc.	OGS	Yes	Yes	Yes	Yes	Yes	Yes	BBB+	A3	Yes	Yes	Yes	Yes	Yes	Yes
South Jersey Industries, Inc.	SJI	Yes	Yes	Yes	Yes	Yes	Yes	BBB	N/A	Yes	Yes	Yes	Yes	Yes	No
Southwest Gas Holdings, Inc.	SWX	Yes	Yes	Yes	Yes	Yes	Yes	BBB+	Baa2	Yes	Yes	Yes	Yes	Yes	Yes
Spire Inc.	SR	Yes	Yes	Yes	Yes	Yes	Yes	A-	Baa2	Yes	Yes	Yes	Yes	Yes	Yes

Note:

- [1] Source: The Value Line Investment Survey: Ratings & Reports, July 10, 2020.
- [2] Source: The Value Line Investment Survey: Ratings & Reports, July 10, 2020.
- [3] Source: Reuters, <https://www.reuters.com/>
- [4] Source: The Value Line Investment Survey: Ratings & Reports, July 10, 2020.
- [5] Source: The Value Line Investment Survey: Ratings & Reports, July 10, 2020.
- [6] Source: S&P Global Market Intelligence
- [7] Source: S&P Global Market Intelligence
- [8] Source: S&P Global Market Intelligence
- [9] Source: SEC Form 10-K Filings
- [10] Source: SEC Form 10-K Filings
- [11] Source: The Value Line Investment Survey: Ratings & Reports, July 10, 2020.
- [12] Source: S&P Global Market Intelligence, Value Line Investment Survey, Yahoo! Finance, and Zacks
- [13] Source: S&P Global Market Intelligence, Value Line Investment Survey, Yahoo! Finance, and Zacks

SPIRE MISSOURI, INC.
CASE NO. GR-2021-0108
PROXY GROUP LIST

Gas Utility Companies	Ticker
1 Atmos Energy Corporation	ATO
2 New Jersey Resources Corporation	NJR
3 Northwest Natural Holding Company	NWN
4 ONE Gas, Inc.	OGS
5 South Jersey Industries, Inc.	SJI
6 Southwest Gas Holdings, Inc.	SWX
7 Spire Inc.	SR

SPIRE MISSOURI, INC.

CASE NO. GR-2021-0108

Growth Rate Estimates

**Based on Dividend per Share (DPS) and Earning per Share (EPS)
for the Comparable Natural Gas Utility Companies**

2020	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	
														Past 10-Years
Water Utility Companies	Ticker	DPS	EPS	Average	DPS	EPS	Average	DPS	EPS	Average	DPS	EPS	Average	Real GDP
1 Atmos Energy Corporation	ATO	4.00%	7.50%	5.75%	6.50%	8.50%	7.50%	7.50%	7.00%	7.25%	6.00%	7.67%	6.83%	3.80%
2 New Jersey Resources Corporation	NJR	7.00%	7.00%	7.00%	6.50%	6.00%	6.25%	5.50%	1.50%	3.50%	6.33%	4.83%	5.58%	3.80%
3 Northwest Natural Holding Company	NWN	0.20%	-11.00%	-5.40%	0.50%	-17.00%	-8.25%	0.50%	5.50%	3.00%	0.40%	-7.50%	-3.55%	3.80%
4 ONE Gas, Inc.	OGS				17.00%	9.50%	13.25%	7.00%	6.50%	6.75%	12.00%	8.00%	10.00%	3.80%
5 South Jersey Industries, Inc.	SJI	7.50%	1.00%	4.25%	5.00%	-4.00%	0.50%	4.00%	10.50%	7.25%	5.50%	2.50%	4.00%	3.80%
6 Southwest Gas Holdings, Inc.	SWX	8.50%	8.00%	8.25%	9.50%	4.50%	7.00%	4.00%	8.00%	6.00%	7.33%	6.83%	7.08%	3.80%
7 Spire Inc.	SR	4.00%	3.50%	3.75%	5.50%	9.50%	7.50%	4.50%	9.00%	6.75%	4.67%	7.33%	6.00%	3.80%
Average		5.20%	2.67%	3.93%	7.21%	2.43%	4.82%	4.71%	6.86%	5.79%	6.03%	4.24%	5.14%	3.80%
NIsource Inc.	NI	-2.00%	-1.00%	-1.50%	-5.00%	-8.00%	-6.50%	7.50%	6.10%	6.80%	0.17%	-0.97%	-0.40%	3.80%

2017	Water Utility Companies	Ticker	Past 10-Years			Past 5-Year			Projected			Average		Projective	
			DPS	EPS	Average	DPS	EPS	Average	DPS	EPS	Average	DPS	EPS	Average	GDP
1	Atmos Energy Corporation	ATO	2.00%	5.50%	3.75%	2.50%	7.00%	4.75%	6.50%	6.50%	6.50%	3.67%	6.33%	5.00%	4.00%
2	New Jersey Resources Corporation	NJR	7.00%	7.50%	7.25%	7.00%	6.50%	6.75%	3.50%	3.00%	3.25%	5.83%	5.67%	5.75%	4.00%
3	Northwest Natural Holding Company	NWN	3.50%	1.00%	2.25%	3.00%	-5.00%	-1.00%	2.00%	7.00%	4.50%	2.83%	1.00%	1.92%	4.00%
4	ONE Gas, Inc.	OGS							17.00%	9.50%	13.25%	17.00%	9.50%	13.25%	4.00%
5	South Jersey Industries, Inc.	SJI	9.00%	7.00%	8.00%	9.50%	4.00%	6.75%	6.50%	3.00%	4.75%	8.33%	4.67%	6.50%	4.00%
6	Southwest Gas Holdings, Inc.	SWX	6.00%	8.50%	7.25%	9.00%	10.00%	9.50%	8.50%	7.00%	7.75%	7.83%	8.50%	8.17%	4.00%
7	Spire Inc.	SR	3.00%	3.50%	3.25%	3.50%	1.50%	2.50%	3.50%	9.00%	6.25%	3.33%	4.67%	4.00%	4.00%
	Average		5.08%	5.50%	5.29%	5.75%	4.00%	4.88%	6.79%	6.43%	6.61%	6.98%	5.76%	6.37%	4.00%

Note:

- [1] Source: The Value Line Investment Survey: Ratings & Reports, 2017 & 2021
- [2] Source: The Value Line Investment Survey: Ratings & Reports, 2017 & 2021
- [3] $=([1]+[2])/2$
- [4] Source: The Value Line Investment Survey: Ratings & Reports, 2017 & 2021
- [5] Source: The Value Line Investment Survey: Ratings & Reports, 2017 & 2021
- [6] $=([4]+[5])/2$
- [7] Source: The Value Line Investment Survey: Ratings & Reports, 2017 & 2021
- [8] Source: The Value Line Investment Survey: Ratings & Reports, 2017 & 2021
- [9] $=([7]+[8])/2$
- [10] $=([1]+[4]+[7])/3$
- [11] $=([2]+[5]+[8])/3$
- [12] $=([10]+[11])/2$
- [13] Source: Congress Budget Office (CBO), Budget Economic Outlook

SPIRE MISSOURI, INC.

CASE NO. GR-2021-0108

**Average High / Low Stock Price for June 2021 through August 2020
for the Comparable Natural Gas Utility Companies**

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	
		<u>January 2021</u>		<u>February 2021</u>		<u>March 2021</u>		Average	
		High	Low	High	Low	High	Low	High/Low	
<u>Company Name</u>	<u>Ticker</u>	Stock	Stock	Stock	Stock	Stock	Stock	Stock Price	
		Price	Price	Price	Price	Price	Price	(10/01/20 - 12/31/21)	
1	Atmos Energy Corporation	ATO	95.92	86.85	94.30	84.59	99.25	85.59	91.08
2	New Jersey Resources Corporation	NJR	38.39	33.32	40.40	34.61	42.57	39.01	38.05
3	Northwest Natural Holding Company	NWN	47.24	41.71	50.18	43.12	54.27	46.77	47.21
4	ONE Gas, Inc.	OGS	78.01	69.48	74.78	66.77	77.70	67.29	72.34
5	South Jersey Industries, Inc.	SJI	24.20	20.82	26.50	21.98	29.24	21.13	23.98
6	Southwest Gas Holdings, Inc.	SWX	61.29	57.00	66.64	58.91	71.35	61.77	62.83
7	Spire Inc.	SR	64.54	59.29	69.39	60.50	75.78	65.79	65.88

		<u>April 2017</u>		<u>May 2017</u>		<u>June 2017</u>		Average	
		High	Low	High	Low	High	Low	High/Low	
<u>Company Name</u>	<u>Ticker</u>	Stock	Stock	Stock	Stock	Stock	Stock	Stock Price	
		Price	Price	Price	Price	Price	Price	(4/01/17 - 06/30/17)	
1	Atmos Energy Corporation	ATO	82.07	78.42	83.62	78.55	85.61	82.14	81.74
2	New Jersey Resources Corporation	NJR	42.65	38.95	42.10	39.15	43.50	39.50	40.98
3	Northwest Natural Holding Company	NWN	61.25	58.00	61.60	57.65	63.40	59.35	60.21
4	ONE Gas, Inc.	OGS	70.64	67.27	70.92	67.31	72.97	68.85	69.66
5	South Jersey Industries, Inc.	SJI	38.40	35.17	37.70	34.46	37.55	33.93	36.20
6	Southwest Gas Holdings, Inc.	SWX	85.56	82.22	85.24	76.58	81.97	72.32	80.65
7	Spire Inc.	SR	69.95	66.75	71.05	63.84	72.83	68.85	68.88

Note:

[1] Source: Wall Street Journal, <https://www.wsj.com/market-data>

[2] Source: Wall Street Journal, <https://www.wsj.com/market-data>

[3] Source: Wall Street Journal, <https://www.wsj.com/market-data>

[4] Source: Wall Street Journal, <https://www.wsj.com/market-data>

[5] Source: Wall Street Journal, <https://www.wsj.com/market-data>

[6] Source: Wall Street Journal, <https://www.wsj.com/market-data>

[7] = (([1]+[2]+[3]+[4]+[5]+[6]) / 6

SPIRE MISSOURI, INC.
CASE NO. GR-2021-0108

Discounted Cash Flow (DCF) Costs of Common Equity (COE) Estimates
Based on Dividend per Share, Stock Price, and Growth Rate of 2021 and 2017 Data
for the Comparable Natural Gas Utility Companies

<u>2020 DCF Estimate</u>		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	
Water Utility Companies	Ticker	Dividend per Share	Stock Price	Dividend Yield	Expected Dividend Yield	Projected Dividend Growth	Projected GDP Growth	Growth Rate	COE	
1	Atmos Energy Corporation	ATO	2.30	91.08	2.53%	2.60%	7.50%	3.80%	6.27%	8.87%
2	New Jersey Resources Corporation	NJR	1.27	38.05	3.34%	3.42%	5.50%	3.80%	4.93%	8.35%
3	Northwest Natural Holding Company	NWN	1.91	47.21	4.05%	4.08%	0.50%	3.80%	1.60%	5.68%
4	ONE Gas, Inc.	OGS	2.16	72.34	2.99%	3.07%	7.00%	3.80%	5.93%	9.01%
5	South Jersey Industries, Inc.	SJI	1.20	23.98	5.00%	5.10%	4.00%	3.80%	3.93%	9.04%
6	Southwest Gas Holdings, Inc.	SWX	2.26	62.83	3.60%	3.67%	4.00%	3.80%	3.93%	7.60%
7	Spire Inc.	SR	2.49	65.88	3.78%	3.86%	4.50%	3.80%	4.27%	8.13%
Average			1.94	57.34	3.61%	3.69%	4.71%	3.80%	4.41%	8.10%
									DCF Lower Bound	7.60%
									DCF Upper Bound	9.01%

<u>2017 DCF Estimate</u>		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	
Water Utility Companies	Ticker	Dividend per Share	Stock Price	Dividend Yield	Expected Dividend Yield	Projected Dividend Growth	Projected GDP Growth	Growth Rate	COE	
1	Atmos Energy Corporation	ATO	1.80	81.74	2.20%	2.26%	6.50%	4.00%	5.67%	7.93%
2	New Jersey Resources Corporation	NJR	1.02	40.98	2.49%	2.53%	3.50%	4.00%	3.67%	6.20%
3	Northwest Natural Holding Company	NWN	1.88	60.21	3.12%	3.16%	2.00%	4.00%	2.67%	5.83%
4	ONE Gas, Inc.	OGS	1.68	69.66	2.41%	2.56%	17.00%	4.00%	12.67%	15.23%
5	South Jersey Industries, Inc.	SJI	1.10	36.20	3.04%	3.12%	6.50%	4.00%	5.67%	8.79%
6	Southwest Gas Holdings, Inc.	SWX	1.98	80.65	2.46%	2.54%	8.50%	4.00%	7.00%	9.54%
7	Spire Inc.	SR	2.10	68.88	3.05%	3.10%	3.50%	4.00%	3.67%	6.77%
Average			1.65	62.61	2.68%	2.76%	6.79%	4.00%	5.86%	8.61%
									DCF Lower Bound	6.20%
									DCF Upper Bound	9.54%

Comparison DCF Estimates

2017 DCF COE estimate	8.61%
2020 DCF COE estimate	8.10% ^a
Difference of Averages between 2017 and 2020	<u>-0.52%</u>

Note:

- [1] Source: The Value Line Investment Survey: Ratings & Reports, 2017 & 2020;
 [2] Source: The Wall Street Journal; Average Monthly Highest and Lowest of June, July, and August 2020
 [3] = [1] / [2]
 [4] = [3] x (1 + .5 x [7])
 [5] Source: [12] of Growth Rate SJW-11
 [6] Source: Congress Budget Office (CBO), Budget Economic Outlook
 [7] = (2 x [5] + [6]) / 3
 [8] = [4] + [7]
 a The Upper Bond of reasonable COE range

SPIRE MISSOURI, INC.
CASE NO. GR-2021-0108
Capital Asset Pricing Model (CAPM) Costs of Common Equity (COE) Estimates
Based on Historical Return Differences Between Common Stocks and Long-Term U.S. Treasuries
for the Comparable Natural Gas Utility Companies

2020 CAPM Estimate	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]		
			Duff&Phillips (1926-2019)				NYU Stern (1928-2020)		Market Risk Premium		CAPM Cost of Common Equity									
			Large Company Stocks		Long-term G-Bonds		S&P 500		US Treasury Bond		Duff&Phillips		NYU Stern		Duff&Phillips		NYU Stern			
	Water Utility Companies	Risk-Free Rate	Beta	Geometric Mean Return	Arithmetic Mean Return	Geometric Mean Return	Arithmetic Mean Return	Geometric Mean Return	Arithmetic Mean Return	Geometric Mean Return	Arithmetic Mean Return	Geometric Mean Return	Arithmetic Mean Return	Geometric Mean Return	Arithmetic Mean Return	Geometric Mean Return	Arithmetic Mean Return	Geometric Mean Return	Arithmetic Mean Return	
1 Atmos Energy Corporation	2.07%	0.65	10.20%	12.10%	5.50%	6.00%	9.79%	11.64%	4.95%	5.21%	4.70%	6.10%	4.84%	6.43%	5.13%	6.04%	5.22%	6.25%		
2 New Jersey Resources Corporation	2.07%	0.93	10.20%	12.10%	5.50%	6.00%	9.79%	11.64%	4.95%	5.21%	4.70%	6.10%	4.84%	6.43%	6.44%	7.74%	6.58%	8.05%		
3 Northwest Natural Holding Company	2.07%	0.73	10.20%	12.10%	5.50%	6.00%	9.79%	11.64%	4.95%	5.21%	4.70%	6.10%	4.84%	6.43%	5.50%	6.52%	5.61%	6.76%		
4 ONE Gas, Inc.	2.07%	0.75	10.20%	12.10%	5.50%	6.00%	9.79%	11.64%	4.95%	5.21%	4.70%	6.10%	4.84%	6.43%	5.60%	6.65%	5.70%	6.89%		
5 South Jersey Industries, Inc.	2.07%	0.83	10.20%	12.10%	5.50%	6.00%	9.79%	11.64%	4.95%	5.21%	4.70%	6.10%	4.84%	6.43%	5.97%	7.13%	6.09%	7.41%		
6 Southwest Gas Holdings, Inc.	2.07%	0.89	10.20%	12.10%	5.50%	6.00%	9.79%	11.64%	4.95%	5.21%	4.70%	6.10%	4.84%	6.43%	6.25%	7.50%	6.38%	7.79%		
7 Spire Inc.	2.07%	0.71	10.20%	12.10%	5.50%	6.00%	9.79%	11.64%	4.95%	5.21%	4.70%	6.10%	4.84%	6.43%	5.41%	6.40%	5.51%	6.63%		
Average	2.07%	0.78	10.20%	12.10%	5.50%	6.00%	9.79%	11.64%	4.95%	5.21%	4.70%	6.10%	4.84%	6.43%	5.76%	6.85%	5.87%	7.11%		
																	Average	6.40%		
																		CAPM Lower Bound	5.87%	
																			CAPM Upper Bound	6.85%

2017 CAPM Estimate	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]			
			Duff&Phillips (1926-2016)				NYU Stern (1928-2017)		Market Risk Premium		CAPM Cost of Common Equity										
			Large Company Stocks		Long-term G-Bonds		S&P 500		US Treasury Bond		Duff&Phillips		NYU Stern		Duff&Phillips		NYU Stern				
	Water Utility Companies	Risk-Free Rate	Beta	Geometric Mean Return	Arithmetic Mean Return	Geometric Mean Return	Arithmetic Mean Return	Geometric Mean Return	Arithmetic Mean Return	Geometric Mean Return	Arithmetic Mean Return	Geometric Mean Return	Arithmetic Mean Return	Geometric Mean Return	Arithmetic Mean Return	Geometric Mean Return	Arithmetic Mean Return	Geometric Mean Return	Arithmetic Mean Return		
1 Atmos Energy Corporation	2.90%	0.69	10.00%	12.00%	5.50%	6.00%	9.65%	11.53%	4.72%	5.15%	4.50%	6.00%	4.93%	6.38%	6.01%	7.04%	6.30%	7.30%			
2 New Jersey Resources Corporation	2.90%	0.77	10.00%	12.00%	5.50%	6.00%	9.65%	11.53%	4.72%	5.15%	4.50%	6.00%	4.93%	6.38%	6.37%	7.52%	6.70%	7.81%			
3 Northwest Natural Holding Company	2.90%	0.65	10.00%	12.00%	5.50%	6.00%	9.65%	11.53%	4.72%	5.15%	4.50%	6.00%	4.93%	6.38%	5.83%	6.80%	6.10%	7.04%			
4 ONE Gas, Inc.	2.90%	0.77	10.00%	12.00%	5.50%	6.00%	9.65%	11.53%	4.72%	5.15%	4.50%	6.00%	4.93%	6.38%	6.37%	7.52%	6.70%	7.81%			
5 South Jersey Industries, Inc.	2.90%	0.71	10.00%	12.00%	5.50%	6.00%	9.65%	11.53%	4.72%	5.15%	4.50%	6.00%	4.93%	6.38%	6.10%	7.16%	6.40%	7.43%			
6 Southwest Gas Holdings, Inc.	2.90%	0.69	10.00%	12.00%	5.50%	6.00%	9.65%	11.53%	4.72%	5.15%	4.50%	6.00%	4.93%	6.38%	6.01%	7.04%	6.30%	7.30%			
7 Spire Inc.	2.90%	0.65	10.00%	12.00%	5.50%	6.00%	9.65%	11.53%	4.72%	5.15%	4.50%	6.00%	4.93%	6.38%	5.83%	6.80%	6.10%	7.04%			
Average	2.90%	0.70	10.00%	12.00%	5.50%	6.00%	9.65%	11.53%	4.72%	5.15%	4.50%	6.00%	4.93%	6.38%	6.07%	7.13%	6.37%	7.39%			
																		Average	6.74%		
																			CAPM Lower Bound	6.07%	
																				CAPM Upper Bound	7.13%

Comparison CAPM Estimates		
2017 CAPM COE estimate		6.74%
2020 CAPM COE estimate		6.40% ^a
Difference of Averages between 2017 and 2020		-0.34%

Note:

- [1] Source: Federal Reserve Bank of St. Louis; 6-month average of 30-year Treasury Bond Rate
- [2] Source: SNL Financial Beta Generator and Blume Adjustment
- [3] Source: Duff&Phillips, 2020 Valuation Handbook: Guide to Cost of Capital
- [4] Source: Duff&Phillips, 2020 Valuation Handbook: Guide to Cost of Capital
- [5] Source: Duff&Phillips, 2020 Valuation Handbook: Guide to Cost of Capital
- [6] Source: Duff&Phillips, 2020 Valuation Handbook: Guide to Cost of Capital
- [7] Source: Risk Premium, Damodaran Online, Stern School of Business, NYU.
- [8] Source: Risk Premium, Damodaran Online, Stern School of Business, NYU.
- [9] Source: Risk Premium, Damodaran Online, Stern School of Business, NYU.
- [10] Source: Risk Premium, Damodaran Online, Stern School of Business, NYU.
- [11] = [3] - [5]
- [12] = [4] - [6]
- [13] = [7] - [9]
- [14] = [8] - [10]
- [15] = [1] + [2] x [11]
- [16] = [1] + [2] x [12]
- [17] = [1] + [2] x [13]
- [18] = [1] + [2] x [14]
- ^a The Lower Bond of reasonable COE range

SPIRE MISSOURI, INC.
CASE NO. GR-2021-0108
AUTHORIZED RETURN ON EQUITY

2017 COE Estimate		<u>7.68%</u> ^A
	DCF	8.61% ^B
	CAPM	6.74% ^C
 2021 COE Estimate		 <u>7.25%</u> ^D
	DCF	8.10% ^E
	CAPM	6.40% ^F
 ROE Adjustment		 -0.43% ^G
 Authorized ROE	 2017	 9.80% ^H
 Recommended ROE	 2021	 <u><u>9.37%</u></u> ^I

Note:

- A Average of [B] and [C]
- B Schedule SJW-13
- C Schedule SJW-14
- D Average of [E] and [F]
- E Schedule SJW-13
- F Schedule SJW-14
- G = [F] - [C]
- H Amended Report and Order, Case Nos. GR-2017-0215 and GR-2017-0216.
- I = [G] + [H]

SPIRE MISSOURI, INC.
CASE NO. GR-2021-0108
ALLOWED RATE OF RETURN

Capital Component	Percentage of Capital	Embedded Cost	Lower	Allowed Rate of Return Common Equity Return of:	
				ROE	Upper
			9.12%	9.37% ²	9.62%
Common Stock Equity	54.25%	-	4.95%	5.08%	5.22%
Preferred Stock	0.00%	N/A	0.00%	0.00%	0.00%
Long-Term Debt	45.75%	4.00%	1.83%	1.83%	1.83%
Total	<u>100.00%</u>		<u>6.78%</u>	<u>6.92%</u>	<u>7.05%</u>

Note:

1 Source: D'ascendis' Direct Testimony, Schedule DWD-D1

2 Source: Schedule SJW-15

SPIRE MISSOURI, INC.
CASE NO. GR-2021-0108
Authorized ROE of the U.S Utility by Sector
2010-2020

<u>Year</u>	<u>Fully Litigated</u>		<u>Natural Gas Settled</u>		<u>Natural Gas Total</u>		<u>Fully Litigated</u>		<u>Electric Settled</u>		<u>Electric Total</u>	
	<u>ROE (%)</u>	<u>Case (No.)</u>	<u>ROE (%)</u>	<u>Case (No.)</u>	<u>ROE (%)</u>	<u>Case (No.)</u>	<u>ROE (%)</u>	<u>Case (No.)</u>	<u>ROE (%)</u>	<u>Case (No.)</u>	<u>ROE (%)</u>	<u>Case (No.)</u>
2010	10.08	27	10.30	12	10.15	39	10.35	27	10.39	34	10.37	61
2011	9.76	8	10.08	8	9.92	16	10.39	26	10.12	16	10.29	42
2012	9.92	21	9.99	14	9.94	35	10.28	29	10.06	29	10.17	58
2013	9.59	12	9.80	9	9.68	21	9.85	17	10.12	32	10.03	49
2014	9.98	15	9.51	11	9.78	26	10.05	21	9.73	17	9.91	38
2015	9.58	5	9.60	11	9.60	16	9.66	16	10.04	15	9.84	31
2016	9.61	10	9.50	16	9.54	26	9.74	25	9.80	17	9.77	42
2017	9.82	7	9.68	17	9.72	24	9.73	24	9.75	29	9.74	53
2018	9.59	17	9.59	23	9.59	40	9.63	22	9.57	26	9.60	48
2019	9.74	12	9.70	20	9.71	32	9.58	27	9.76	20	9.66	47
2020	9.44	12	9.47	22	9.46	34	9.43	32	9.46	23	9.44	55

Note:

Source: S&P Global Market Intelligence, Retrieved in March 19, 2021