Oregon

Kate Brown, Governor

Public Utility Commission
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January 30, 2019

Via Electronic Filing, Huddle, and US Mail

OREGON PUBLIC UTILITY COMMISSION
ATTENTION: FILING CENTER
PO BOX: 1088
SALEM OR 97308-1088

RE: Docket No. UG 347 – In the Matter of
CASCADE NATURAL GAS CORPORATION, Request for a General Rate Revision.
Attached for filing are the following documents for Staff Testimony in
Support of Stipulation:

Exhibit 1200-1202
Exhibit 1300-1310, Exhibit 1309 is confidential and is being mailed to parties who have signed
Protective Order No: 18-172.

/s/ Kay Barnes
Kay.barnes@state.or.us

CASE: UG 347
WITNESS: JOHN L. FOX

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 1200

Testimony In Support of Stipulation

January 30, 2019

1 **Q. Please state your name, occupation, and business address.**
2 A. My name is John L. Fox. I am a Senior Financial Analyst employed in the
3 Energy Rates, Finance and Audit Division of the Public Utility Commission of
4 Oregon (OPUC). My business address is 201 High Street S.E., Suite 100,
5 Salem, Oregon 97301.
6 **Q. Have you previously provided testimony in this case?**
7 A. Yes, I filed Opening Testimony, Exhibit Staff/200 with supporting exhibits.
8 **Q. What is the purpose of your testimony?**
9 A. The first purpose of my testimony is to summarize the new projects and
10 revaluation of gross plant additions in the Company's reply testimony and
11 Staff's analysis thereof. The second purpose of my testimony is to explain why
12 Staff believes the terms of the Stipulation in this docket will result in rates that
13 are fair, just, and reasonable.
14 **Q. Did you prepare an exhibit for this docket?**
15 A. Yes. I prepared Exhibit Staff/1201, consisting of 1 page and Exhibit Staff/1202,
16 consisting of 10 pages.
17 **Q. How is your testimony organized?**
18 A. My testimony is organized as follows:

19 Issue 1, Review of Gross Plant Issues Presented by Staff in Opening
20 Testimony.......... 2
21 Issue 2, Additional Gross Plant Changes Proposed by the Company in
22 Reply Testimony.......... 6
23 Issue 3, Proposed Gross Plant Settlement 9

1 **ISSUE 1, REVIEW OF GROSS PLANT ISSUES PRESENTED BY STAFF IN**
2 **OPENING TESTIMONY**

3 **Q. Please summarize the list of 2018 plant additions in the Company's**
4 **original filing.**

5 A. The Company's original list of proposed projects can be found in Exhibit
6 CNGC/305 and includes $24.6 million of plant additions in 2018. The list of
7 additions in Exhibit CNGC/305 is further divided into the categories of
8 intangible plant ($0.5 million), distribution plant ($22.4 million), and general
9 purpose plant additions ($1.7 million).

10 **Q. Please summarize Staff's Opening Testimony regarding gross plant**
11 **additions.**

12 A. Staff's Opening Testimony[1] includes a discussion of the "used and useful" and
13 "prudence" standards, Staff's data gathering efforts, concerns regarding the
14 quality of information provided by the company, concerns regarding specific
15 projects, and proposed adjustments.

16 **Q. Are there significant projects that Staff reviewed for which Staff did not**
17 **propose adjustments?**

18 A. Yes, for example, amounts included in the Company's safety plan and
19 spending projections for FP-303142 Pendleton Pipe Replacement Phase 2
20 were reasonable compared to the project value in Exhibit CNGC/305. Staff did
21 not propose an adjustment for this project.

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[1] Exhibit Staff/200, Fox/12 -20, (Discussion of Issue 2. Gross Plant Additions).

1 Also, Staff's review indicated that the amount included in the rate case for
2 blanket growth projects was reasonable compared to prior years. Staff did not
3 propose adjustments for those projects either.
4 **Q. Do you believe Staff's review of the proposed additions to gross plant**
5 **was thorough?**
6 A. Yes, as discussed in Staff's Opening Testimony, our review included projects
7 valued over $150,000.
8 **Q. Please describe the volume of discovery related to gross plant**
9 **additions.**
10 A. Prior to filing opening testimony, Staff issued 16 plant related data requests.
11 The Company provided 639 responsive files, including 356 Excel
12 spreadsheets.
13 **Q. Will you please elaborate on the scope of Staff's prudence review?**
14 A. Yes, Staff reviewed the Company's 2018 Integrated Resource Plan,
15 Distribution and Transmission Integrity Management Plans (DIMP/TIMP), and
16 Annual Safety Plan with respect to the projects including in Exhibit CNGC/305.
17 This was followed by specific data requests intended to elicit additional
18 information regarding the prudence of the proposed projects.
19 For example, the questions included in Staff DR No. 134 are almost word for
20 word the requirements identified by the Commission in Order No. 16-109
21 regarding comprehensive analyses of system upgrades.
22 Staff's conclusions regarding prudence of those plant additions are discussed
23 in my Opening Testimony, Staff Exhibit 200.

1 **Q. Please summarize some of the underlying reasons why Staff proposed**
2 **in opening testimony to remove $5.2 million of gross plant additions in**
3 **this case.**
4 A. In general terms, Staff's concerns included: 1) certain projects that would not
5 be used and useful on the rate effective date, 2) the Company's downward
6 revision of project costs, apparent on review of the Company's responses to
7 Staff data requests, and 3) variances in proposed projects in the rate case from
8 amounts reported to the Commission in other filings such as the DIMP/TIMP
9 and Annual Safety Plan.
10 **Q. What percentage does this $5.2 million represent of the Company's**
11 **requested increase in this case?**
12 A. After Staff's initial proposed adjustment, the gross plant additions are $19.3
13 million or a reduction of 21 percent from the Company's original request of
14 $24.5 million in gross plant additions.
15 **Q. Did Interveners in this case also propose reductions in gross plant**
16 **additions?**
17 A. Yes, AWEC proposed removing all growth projects due to concerns about how
18 the related revenue growth was calculated and recommended removing the
19 entire Madras PH1 project.[2] AWEC also proposed smaller reductions in rate
20 base for plant retirements and interest synchronization.

[2] AWEC/100, Mullins/27-31.

1 CUB asserted that the Company's equipment trade-in program is improperly
2 inflating rate base and proposed to remove all additions to Power Equipment[3].
3 **Q. Have you prepared any additional exhibits that were not included in**
4 **your opening testimony?**
5 A. Yes, I prepared Exhibit 1201 which summarizes all gross plant adjustments
6 proposed in opening testimony, reply testimony, and the Stipulation.
7

[3] CUB/100, Gehrke/5-6.

ISSUE 2, ADDITIONAL GROSS PLANT CHANGES PROPOSED BY THE COMPANY IN REPLY TESTIMONY

Q. Please summarize the changes to gross plant additions proposed by the Company in reply testimony.

A. Referring to Exhibit 1201 and Exhibit CNGC/801, the Company proposed what is an increase of $2.6 million over Staff's position in opening testimony to $21.9 million total plant additions. This is accomplished by a general revaluation or update of estimated costs for all projects on the original list (Exhibit CNGC/305) plus adjustments for specific projects discussed in the Company's reply testimony.

Intangible Plant

The Company accepted Staff's proposal to remove the Work Asset Management project, proposed to remove the INTANGIBLES - SOFTWARE and UG-PCAD Annual Enhancements projects, and proposed to add a new project, GPS Based Leak Survey.

The Company also proposed an $83 thousand dollar reduction in the overall cost of other intangible plant projects not otherwise discussed in testimony.[4]

Distribution Plant

The Company proposed to shift funding between the two Bend Phase 7 projects however the net increase is a minimal change in Staff's recommended $2.6 million gross plant addition for this project.

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[4] See CNGC/305 and CNGC/801, projects FP-101472, FP-200064, FP-200663, FP-315865, FP-316269, FP-316289, FP-316361, and FP-316447.

1 The Company proposed to increase the Bend HP PH1 project from the Staff
2 recommended $1.7 million to $1.969 million, citing updated cost estimates.[5]
3 The Company proposed an additional $320 thousand reduction to the Madras
4 PH1 project. This is in addition to the Staff recommended reduction of $3.437
5 million. The total cost of this project therefore decreased from $5.54 million to
6 $1.783 million.
7 For the ERT Replacement project, the Company proposed to add back $467
8 thousand of the Staff recommended $1.095 million reduction resulting in a net
9 increase of $2.858 million in gross plant. However, the Company did not accept
10 the rationale underlying Staff's recommendation. This is discussed further
11 below as it relates to Staff's overall settlement recommendation.
12 The Company proposed increasing the cost of main relocations from $419
13 thousand to $1.049 million, citing increased project costs.[6]
14 The Company also proposed to add the following projects not included in its
15 filed case:
16 • Pendleton V-23 Replacement
17 • 6" Pilot Rock HP Replacement
18 • Family meter replacements
19 The Company proposed to increase customer growth projects from $3.2 million
20 to $4.9 million[7]. This is an increase of $1.7 million or 53 percent from the
21 original request.

[5] CNGC/800, Parvinen/12.
[6] CNGC/800, Parvinen/2.

1 And lastly, the Company also proposed a $301 thousand dollar increase in the
2 overall cost of other distribution plant projects not otherwise discussed in
3 testimony.[8]
4 *General Purpose Plant*
5 The Company proposed an 87 percent reduction in additions of Power
6 Equipment from $731 thousand to $93 thousand due to inaccurate accounting
7 for trade-ins, discounts, and rebates.[9]
8 The Company proposed removal of three projects from the list; District Office
9 Access Control Sys, GP TRAN. VEHICLE - INTERSTAT, and Turbine Prover
10 and also proposed to add a new general purpose plant addition, Sensit
11 Portable Methane Detectors.
12 The Company proposed a $202 thousand dollar decrease in the overall cost of
13 other distribution plant projects not otherwise discussed in testimony.[10]

[7] The request of $4.9 million includes mains (FP-101170), regulator stations (FP-101173), services (FP-101176), meters and regulators (FP-101210, FP-101178, FP-101259, and FP-101180)
[8] See CNGC/305 and CNGC/801, projects FP-303142, FP-101171, FP-306989, FP-316479, FP-302370, FP-316430, FP-316478, FP-316480, FP-101175, FP-316245, FP-316246, FP-101177, FP-101179, and FP-101181.
[9] CNGC/800, Parvinen/18-19.
[10] See CNGC/305 and CNGC/801, projects FP-101252, FP-101466, FP-101213, FP-200661, FP-200662, FP-316445, FP-101184, FP-101218, FP-101237, FP-101255, FP-101216, FP-101187, and FP-101164.

1 **ISSUE 3, PROPOSED GROSS PLANT SETTLEMENT**

2 **Q. Have the parties reached a settlement of the issues identified by Staff**
3 **and interveners regarding gross plant additions?**
4 A. Yes, the Stipulation filed in this docket provides for a reduction of $150,000 in
5 revenue requirement to settle the plant issues. This amount is non-specific and
6 equivalent to a reduction of $1.6 million below the level proposed by the
7 Company in its Reply Testimony. The following is a review of the changes from
8 amounts proposed in testimony to the Stipulation:

9 - Gross plant additions as filed: $24.6 million.
10 - Staff proposed in opening testimony: $19.3 million.
11 - Company proposed in reply testimony: $21.9 million.
12 - Stipulation: $20.3 million.

13 The Stipulation further specifies that the additional rate base and revenue
14 requirement amounts for plant includes the projects listed in the Company's
15 Exhibit CNGC/801, and the Company will provide an officer attestation by
16 March 1, 2019 affirming that all projects were completed and in service by
17 December 31, 2018 and describing actual costs. The Stipulation provides that
18 the amounts recoverable for plant shall be the actual amounts provided in the
19 Company’s March 1, 2019 attestation, and projects not complete and in service
20 by December 31, 2018 shall be removed from the test year rate base. And, the
21 Stipulation acknowledges that costs may vary from the amounts described in
22 Exhibit CNGC/801, and that the total amount the Company may recover for

1 plant will be based on net changes in costs up to the plant amount agreed
2 upon, $20.3 million.

3 **Q. Why does Staff believe that the settlement agreement is a fair, just, and**
4 **reasonable resolution of the gross plant issues in this case?**

5 A. Staff believes the record in this case reflects a thorough evaluation of the
6 Company's proposed plant additions and a balanced resolution of the issues
7 identified and uncertainties remaining.

8 Staff's initial review encompassed plant additions greater than $150 thousand.
9 Staff had significant concerns that the initial requested gross plant additions of
10 were overstated and proposed reductions of over 20 percent from $24.6 million
11 to $19.3 million.

12 Staff was somewhat surprised by the Company's proposal in Reply Testimony
13 to revalue the entire list and the proposed increase in growth projects. As
14 discussed above, Staff has performed a review and analysis of the Company's
15 proposed increase from $19.3 million to $21.9 million presented in Exhibit
16 Staff/1201. Staff believes it has performed a thorough and appropriate analysis
17 of the particulars to support the Stipulation.

18 **Q. Please describe the volume of discovery related to gross plant**
19 **additions included in Exhibit CNGC/801.**

20 A. After the Company filed Reply Testimony, Staff issued 3 additional plant-
21 related data requests. The Company provided 21 responsive files, including 4
22 Excel spreadsheets.

1 **Q. What is Staff's settlement position regarding the four new projects that**
2 **were not included in the Company's filed case but are included in**
3 **Exhibit 801?**
4 A. Based on the Company's response to Staff DR No. 305,[11] Staff believes the
5 costs associated with the four new projects are prudently incurred and
6 recommends the projects be allowed in gross plant.
7 **Q. What is Staff's settlement position regarding proposed changes in the**
8 **cost of projects not specifically discussed in the Company's Reply**
9 **Testimony?**
10 A. The proposed net increase in rate base for those projects across all categories
11 is $16 thousand.[12] In Staff's view, particularly given the terms of the Stipulation
12 on plant, this is a reallocation of resources across the project list with a minimal
13 increase in rate base not requiring further Staff analysis.
14 **Q. What is Staff's settlement position regarding the increase in the cost of**
15 **growth projects in the Company's Reply Testimony?**
16 A. As discussed above, the Company is proposing to increase customer growth
17 projects from $3.2 million to $4.9 million[13]. This is an increase of $1.7 million, or
18 53 percent, from the original request.

[11] Exhibit Staff/1202.
[12] Per Exhibit 1201, intangible plant ($82,909), distribution plant $300,844, general purpose plant ($201,755) = $16,181 net.
[13] The request of $4.9 million includes mains (FP-101170), regulator stations (FP-101173), services (FP-101176), meters and regulators (FP-101210, FP-101178, FP-101259, and FP-101180)

In response to a Staff data request[14], the Company provided actual expenditures by funding project through October 2018 and estimated spending for November and December.

Staff has in the past, based calculation of rate base as an average of monthly averages. However, in this proceeding, Staff analysis indicates that spending through October for the growth projects is between 72 percent and 100 percent of the total for the year. A proportionate share based on months elapsed would be 83 percent (10/12). Accordingly, Staff finds the $4.9 million total is not skewed towards projections at the end of the year and, given the uncertainties in actual expenditures that are addressed under the terms of the Stipulation, Staff finds this amount, and the plant additions amount, in general, reasonable for settlement purposes.

Q. Please summarize the remaining issues and uncertainties in this case.

A. Taken as a whole, the project cost estimates and documentation in this case has been a moving target. Accordingly, Staff has been concerned that the projects may not be completed as planned even at the reduced $21.9 million level.

The Company has acknowledged Staff's concerns regarding project documentation.[15] However, Staff remained uncertain, had there been better documentation, that additional reductions might have been warranted.

Q. Please explain how the Stipulation provides a balanced resolution.

[14] Exhibit Staff/1202 (Company Response to DR No. 305(b) and the Company's response supplementing DR No.133).
[15] CNGC/800, Parvinen/5-6.

1 A. The Stipulation regarding gross plant additions has two elements. The
2 Company will provide attestations of final project costs and has agreed to a
3 reduction in revenue requirement of $150 thousand. This reduction in revenue
4 requirement is equivalent to reducing the gross plant additions from $21.9
5 million to $20.3 million. Staff considers this reduction to be a reasonable
6 allowance for the remaining uncertainties regarding project costs and
7 documentation.
8 The settlement is $1 million higher than Staff's initial proposal in opening
9 testimony yet also reflects the revision of project costs with supporting
10 documentation in the Company's reply testimony.
11 Second, while the stipulating parties agree that the gross plant additions in this
12 case will be capped at $20.3 million, the parties also agree that the Company
13 will attest to the final project costs as presented in the Company's Exhibit 801,
14 and projects not complete and in service by December 31, 2018 shall be
15 removed from test year rate base. And any downward variance in actual cost
16 will be absorbed within the $1.6 million adjustment noted above. In other
17 words, gross plant additions will be reduced below the agreed upon $20.3
18 million in the event the Company's attestation of actual costs is more than $1.6
19 million below the Exhibit CNGC/801 total of $21.9 million.
20 Staff believes the Stipulation provides a fair, just, and reasonable resolution on
21 issues related to gross plant additions.
22 **Q. Does this conclude your testimony?**
23 A. Yes.

CASE: UG 347
WITNESS: JOHN L. FOX

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 1201

Staff Exhibit
In
Support of Testimony

January 30, 2019

Summary of 2018 Plant Additions

Line	Description	(a) Exhibit 305	(b) Staff Opening Adjustments	(c) Staff Opening Testimony	(d) Company Revisions	(e) Exhibit 801	(f) Settlement Changes	(g) Settlement Agreement (see note below)
1	INTANGIBLES - SOFTWARE	$ 18,382	$ -	$ 18,382	$ (18,382)	$ -	$ -	$ -
2	UG-Work Asset Management	162,285	(162,285)	-	-	-	-	-
3	UG-GPS Based Leak Survey - Replac	-	-	-	95,824	95,824	-	95,824
4	UG-PCAD Annual Enhancements	18,487	-	18,487	(18,487)	-	-	-
5	Projects not specifically discussed in testimony	266,946	-	266,946	(82,909)	184,037	-	184,037
6	**Total Intangible Plant**	**$ 466,101**	**$ (162,285)**	**$ 303,815**	**$ (23,955)**	**$ 279,860**	**$ -**	**$ 279,860**
7	RP; 4" ST; Bend; 2,500' PH 7 Sec 1	$ 1,203,284	$ -	$ 1,203,284	$ (203,530)	$ 999,754	$ -	$ 999,754
8	Bend Pipe Replacement Phase 7	1,829,867	(433,000)	1,396,867	213,400	1,610,267	-	1,610,267
9	MAIN-RELO-REPL-OREGON	418,761	-	418,761	629,987	1,048,748	-	1,048,748
10	RPL; 6" HP, BEND HP PH1	1,789,561	(90,000)	1,699,561	269,216	1,968,777	-	1,968,777
11	RPL; 4" HP, MADRAS PH1	5,540,102	(3,437,000)	2,103,102	(320,447)	1,782,654	-	1,782,654
12	Pendleton V-23 replacement	-	-	-	122,733	122,733	-	122,733
13	6" Pilot Rock HP Replacement	-	-	-	45,286	45,286	-	45,286
14	ERT Replacement - 2018	3,485,554	(1,095,000)	2,390,554	467,350	2,857,904	-	2,857,904
15	Family Meter Replacement	-	-	-	93,953	93,953	-	93,953
16	Customer Growth Projects	3,166,600	-	3,166,600	1,700,608	4,867,208	-	4,867,208
17	Projects not specifically discussed in testimony	4,977,190	-	4,977,190	300,844	5,278,035	-	5,278,035
18	**Total Distribution Plant**	**$ 22,410,919**	**$ (5,055,000)**	**$ 17,355,919**	**$ 3,319,401**	**$ 20,675,320**	**$ -**	**$ 20,675,320**
19	District Office Access Control Sys	$ 31,775	$ -	$ 31,775	$ (31,775)	$ -	$ -	$ -
20	GP TRAN. VEHICLE - INTERSTAT	12,772	-	12,772	(12,772)	-	-	-
21	Turbine Prover	31,512	-	31,512	(31,512)	-	-	-
22	Sensit Portable Methane Detectors	-	-	-	185,972	185,972	-	185,972
23	GP POWER EQUIP - OREGON	730,721	-	730,721	(636,781)	93,941	-	93,941
24	Projects not specifically discussed in testimony	868,254	-	868,254	(201,755)	666,500	-	666,500
25	**Total General Purpose Plant**	**$ 1,675,035**	**$ -**	**$ 1,675,035**	**$ (728,622)**	**$ 946,413**	**$ -**	**$ 946,413**
26	Stipulated Adjustment (see note below)			-		-	(1,613,913)	(1,613,913)
27	**Proposed 2018 Plant Additions**	**$ 24,552,055**	**$ (5,217,285)**	**$ 19,334,769**	**$ 2,566,823**	**$ 21,901,593**	**$ (1,613,913)**	**$ 20,287,680**

Note: The Company will provide officer attestations and the final gross plant amount will be adjusted according to the terms of the settlement stipulation.

Summary of 2018 Plant Additions

Line	Description	(a) Exhibit 305	(b) Staff Opening Adjustments	(c) Staff Opening Testimony	(d) Company Revisions	(e) Exhibit 801	(f) Settlement Changes	(g) Settlement Agreement (see note below)
1	INTANGIBLES - SOFTWARE	$ 18,382	$ -	$ 18,382	$ (18,382)	$ -	$ -	$ -
2	UG-Work Asset Management	162,285	(162,285)	-	-	-	-	-
3	UG-GPS Based Leak Survey - Replac	-	-	-	95,824	95,824	-	95,824
4	UG-PCAD Annual Enhancements	18,487	-	18,487	(18,487)	-	-	-
5	Projects not specifically discussed in testimony	266,946	-	266,946	(82,909)	184,037	-	184,037
6	**Total Intangible Plant**	**$ 466,101**	**$ (162,285)**	**$ 303,815**	**$ (23,955)**	**$ 279,860**	**$ -**	**$ 279,860**
7	RP; 4" ST; Bend; 2,500' PH 7 Sec 1	$ 1,203,284	$ -	$ 1,203,284	$ (203,530)	$ 999,754	$ -	$ 999,754
8	Bend Pipe Replacement Phase 7	1,829,867	(433,000)	1,396,867	213,400	1,610,267	-	1,610,267
9	MAIN-RELO-REPL-OREGON	418,761	-	418,761	629,987	1,048,748	-	1,048,748
10	RPL; 6" HP, BEND HP PH1	1,789,561	(90,000)	1,699,561	269,216	1,968,777	-	1,968,777
11	RPL; 4" HP, MADRAS PH1	5,540,102	(3,437,000)	2,103,102	(320,447)	1,782,654	-	1,782,654
12	Pendleton V-23 replacement	-	-	-	122,733	122,733	-	122,733
13	6" Pilot Rock HP Replacement	-	-	-	45,286	45,286	-	45,286
14	ERT Replacement - 2018	3,485,554	(1,095,000)	2,390,554	467,350	2,857,904	-	2,857,904
15	Family Meter Replacement	-	-	-	93,953	93,953	-	93,953
16	Customer Growth Projects	3,166,600	-	3,166,600	1,700,608	4,867,208	-	4,867,208
17	Projects not specifically discussed in testimony	4,977,190	-	4,977,190	300,844	5,278,035	-	5,278,035
18	**Total Distribution Plant**	**$ 22,410,919**	**$ (5,055,000)**	**$ 17,355,919**	**$ 3,319,401**	**$ 20,675,320**	**$ -**	**$ 20,675,320**
19	District Office Access Control Sys	$ 31,775	$ -	$ 31,775	$ (31,775)	$ -	$ -	$ -
20	GP TRAN. VEHICLE - INTERSTAT	12,772	-	12,772	(12,772)	-	-	-
21	Turbine Prover	31,512	-	31,512	(31,512)	-	-	-
22	Sensit Portable Methane Detectors	-	-	-	185,972	185,972	-	185,972
23	GP POWER EQUIP - OREGON	730,721	-	730,721	(636,781)	93,941	-	93,941
24	Projects not specifically discussed in testimony	868,254	-	868,254	(201,755)	666,500	-	666,500
25	**Total General Purpose Plant**	**$ 1,675,035**	**$ -**	**$ 1,675,035**	**$ (728,622)**	**$ 946,413**	**$ -**	**$ 946,413**
26	Stipulated Adjustment (see note below)			-		-	(1,613,913)	(1,613,913)
27	**Proposed 2018 Plant Additions**	**$ 24,552,055**	**$ (5,217,285)**	**$ 19,334,769**	**$ 2,566,823**	**$ 21,901,593**	**$ (1,613,913)**	**$ 20,287,680**

Note: The Company will provide officer attestations and the final gross plant amount will be adjusted according to the terms of the settlement stipulation.

CASE: UG 347
WITNESS: JOHN L. FOX

PUBLIC UTILITY COMMISSION OF OREGON

STAFF EXHIBIT 1202

Staff Exhibit
In
Support of Testimony

January 30, 2019

CASCADE NATURAL GAS CORPORATION
Oregon Public Utility Commission
General Rate Case
UG 347

Request No. 305

Date prepared: November 20, 2018

Preparer: Mike Parvinen

Contact: Pamela Archer

Telephone: (509)-734-4591

OPUC DATA REQUEST NO. 305

Regarding the changes to 2018 plant additions in the Company's Reply Testimony:

a. Please supplement the Company's response to Staff DR No. 134 and DR No. 265(b) to include the four new projects identified in the Company's reply testimony (CNGC/800, Parvinen/3).

b. Please supplement the Company's response to Staff DR 133, specifically "OPUC-133 Parts C & D.xlsx", showing actual costs through the most recent available monthly close and projections by month for the remainder of the year for all projects listed in Exhibit CNGC/801.

c. Regarding the project referred to as FP-200689 RPL; 6" HP, BEND HP PH1 in Exhibit CNGC/801 please provide a narrative explanation of the increase in projected cost from $1.790 million to $1.969 million.

Response:

a. See supplemental responses to Staff DR No. 134 and DR No. 265(b). Files are entitled:
   - OPUC-134 Supplemental Leak Survey
   - OPUC-134 Supplemental Pendleton Replacement
   - OPUC-134 Supplemental PMD
   - OPUC-134 Supplemental Meter Replacement

   Please note that DR 265(b) pertains specifically to pipe replacements and these four projects were not pipe replacements, so the questions provided in DR 265(b) are primarily not applicable to these projects.

b. Please see attached worksheet which is an update of the work paper provided with rebuttal testimony support Exhibit CNGC/801 which included monthly actual amounts and

CASCADE NATURAL GAS CORPORATION
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estimates for November and December 2018. This work paper is being provided as a supplement to Staff DR 133. File entitled "OPUC DR-133 Supplemental.xlsx".

c. The original amount of $1.790 million represents the capital required in 2018 as this figure came from the approved 2018 capital budget. The updated figure of $1.969 million is the most current estimate of the amount that is projected to be recorded into plant in service which includes the 2018 capital expenditures plus any previous years costs posted to the funding project. Previous years planning costs prior to 2018 which were being recorded in CWIP totaled $132,763.20. The $1.790 million **only** included 2018 actual capital cost not any previous year's costs included in the funding project.

CASCADE NATURAL GAS CORPORATION
Oregon Public Utility Commission
General Rate Case
UG 347

Request No. 134

Date prepared: November 20, 2018

Preparer: Hart Gilchrist

Contact: Pamela Archer

Telephone: (509)-734-4591

OPUC DATA REQUEST NO. 134

Consistent with Commission Order 16-109 at page 14, issued in Docket UG 288, please provide the following with respect to each Oregon-allocated and situs project over $150,000, as listed in Exhibit CNGC/305, Peters/1-3:

a. Comprehensive cost-benefit analysis of whether and when investment should be built;
b. Evaluation of range of alternative build dates and the impact on reliability and customer rates;
c. Evidence on the likelihood of disruptions based on historical experience;
d. Evidence on the range of possible reliability incidents;
e. Evidence about projected loads and customers in the area; and
f. Consideration of alternatives, including use of interruptibility or increase demand-side measures to improve reliability and system resiliency.

Response:

a. The $95,824 is for the MyWorldGPS Leak Survey System, which is a system-wide project to replace equipment that previously required manual notation of results. This new equipment produces leak survey data that can automatically load GPS coordinates and data into the Company's GIS system. The $95,824 is the Cascade portion for this ongoing project. An evaluation of Leak Survey systems was completed in 2015 and the MyWorld GPS based Leak Survey System was selected for deployment at all Utility Group brands. Subsequently the decision was made to deploy at CNGC after other deployments were completed.

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b. The product is being stabilized at other Utility Group brands before deploying to Cascade. As a part of the process we continue to evaluate dates and alternatives.
c. N/A
d. N/A
e. N/A
f. Alternatives: We continue to monitor the Leak Survey technologies for better more cost-effective processes.

CASCADE NATURAL GAS CORPORATION
Oregon Public Utility Commission
General Rate Case
UG 347

Request No. 134

Date prepared: November 20, 2018

Preparer: Renie Sorensen

Contact: Pamela Archer

Telephone: (509)-734-4591

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Response:

This was the replacement of a mainline block valve that had operation issues both in accessing the valve and in the actual turning of the valve. This project consisted of adding a new valve at a better location (V-135 in 2016 completion) and the removal of the existing valve that was completed in 2018. The 2018 Project, which was placed into service on 8/20/2018, involved installing new piping around the existing valve (V-23) to maintain flow while the valve was removed.

a) The benefit of removing the old is to remove the potential of a leak and corrosion problem in the future.
b) N/A
c) N/A

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d) N/A
e) N/A
f) Only other alternative available was to leave non-operable valve in place.

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Request No. 134

Date prepared: November 20, 2018

Preparer: Mike Eutsey

Contact: Pamela Archer

Telephone: (509)-734-4591

OPUC DATA REQUEST NO. 134

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c. Evidence on the likelihood of disruptions based on historical experience;
d. Evidence on the range of possible reliability incidents;
e. Evidence about projected loads and customers in the area; and
f. Consideration of alternatives, including use of interruptibility or increase demand-side measures to improve reliability and system resiliency.

Response:

Cascade Natural Gas Corporation (CNGC,) quality assurance data stemming from Quality Assurance (QA) process audits found that our leak investigation process and procedure needed to be improved to be more effective. After reviewing other industry process and equipment CNGC elected to move forward with the SENSIT Portable Methane Detector (PMD) tool because it had proven itself with our sister utility company Intermountain Gas and our employees were familiar with the SENSIT product line. CNGC modified the leak investigation company procedure to allow the use of the PMD so that we could ensure consistent application of the updated process. The $185,972.00 was the cost associated with equipping each CNGC Service Mechanic in the state of OR with the PMD tool.

a.) Benefit is an improvement to the leak investigation process and procedure.

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b.) N/A

c.) N/A

d.) N/A

e.) N/A

f.) In order gain operational efficiencies, the only option was to use the brand and model our sister company has experience and success utilizing.

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UG 347

Request No. 134

Date prepared: November 20, 2018

Preparer: Brett Hudson

Contact: Pamela Archer

Telephone: (509)-734-4591

OPUC DATA REQUEST NO. 134

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b. Evaluation of range of alternative build dates and the impact on reliability and customer rates;
c. Evidence on the likelihood of disruptions based on historical experience;
d. Evidence on the range of possible reliability incidents;
e. Evidence about projected loads and customers in the area; and
f. Consideration of alternatives, including use of interruptibility or increase demand-side measures to improve reliability and system resiliency.

Response:

The family meter change-out project was completed as part of the state required Statistical Sampling Program. Each meter in the Statistical Sample Program will be assigned to a meter group or "family" according to its manufacturer, meter class, and test year. The performance evaluation of each meter family will be based on an evaluation of test results from random sampling of the family. Sample data collected during a given program year will be analyzed, and a decision regarding meter family disposition will be made. In the 2015 meter sampling year, two meter families totaling 21,262 meters failed the sample program. Accordingly, CNG was required to replace all 21,262 meters by end of 2017. The amount recorded in May of 2018 represents an adjustment to the plant account correcting for the actual cost of removal originally posted in 2017. The cost shown in 2018 had a corresponding increase to Accumulated

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Depreciation. As such, no net increase in rate base should be shown. Cascade will remove this project in its final attestation of plant.

a. OAR 860-023-0015 requires meters be periodically tested and meters must test to within plus or minus 2 percent tolerances. If meters fall outside of tolerances the only option is to replace the meter.
b. N/A
c. N/A
d. N/A
e. N/A
f. The only available option is to replace the meter when outside of tolerances during testing.

CASE: UG 347
WITNESSES: MATT MULDOON
JEFFREY WATSON

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 1300

Testimony in Support of Stipulation

January 30, 2019

1 **Q. Please each state your name and occupation.**

2 A1. My name is Matt Muldoon. I am a Senior Economist for the Public Utility
3 Commission of Oregon (Commission or OPUC).

4 A2. My name is Jeffrey Watson. I am an analyst for the OPUC.

5 **Q. What is your common business address?**

6 A. 201 High Street SE, Suite 100, Salem, OR 97301.

7 **Q. Please describe your educational background and work experience.**

8 A. Our educational background and work experience are set forth in our
9 respective Witness Qualification Statements, provided as Exhibits Staff/1301
10 and Staff/1302 updating Staff/901.

11 **Q. What is the purpose of this testimony?**

12 A. We are responsible for the analysis of three Cost of Capital (CoC) issues in
13 Docket No. UG 347 Cascade Natural Gas Corporation (Cascade, CNG or
14 Company):

15 1. Capital Structure;
16 2. Cost of Common Equity, also known as Return on Equity (ROE); and
17 3. Cost of Long-Term (LT) Debt.

18 **Q. What is your summary recommendation?**

19 A. Staff concurs with all Parties in the settlement as shown herein in
20 recommending a balanced capital structure of 50.0 percent equity and 50.0
21 percent LT Debt, a point ROE of 9.40 percent, and a 5.140 percent cost of LT
22 Debt. Parties differed on the best range of reasonable ROEs but converge to
23 recommend said point ROE.

When Staff discusses a range of reasonable ROEs hereafter, it is only to illustrate how Staff's modeling is supportive of said point ROE.

Q. Did you prepare tables showing Cascade's current, Cascade-proposed and the Staff recommended overall CoC?

A. Yes, the following three tables provide that information.

Table 1

CNG Current OPUC Authorized (UG 305 Order No. 16-477, 16-481)			CNG
Component	**Percent of Total**	**Stipulated or Implied Cost**	**Weighted Average**
Long Term Debt	51.00%	**5.250%**	2.678%
Preferred Stock	0.00%		0.000%
Common Stock	49.00%	**9.40%**	4.606%
	100.00%		**7.284%**

Table 2

CNG Requested – UG 347		CNG Direct Testimony		
Component	**Percent of Total**	**Cost**	**Weighted Average**	**ROR vs. Current**
Long Term Debt	**50.00%**	**5.250%**	2.625%	**0.041%**
Preferred Stock	0.00%		0.000%	
Common Stock	**50.00%**	**9.40%**	4.700%	
	100.00%		**7.325%**	

Table 3

Joint Proposed – UE 347		Settlement		
Component	**Percent of Total**	**Cost**	**Weighted Average**	**ROR vs. Current**
Long Term Debt	**50.0%**	**5.140%**	2.570%	**-0.013%**
Preferred Stock	0.00%		0.000%	
Common Stock	**50.0%**	**9.40%**	4.700%	
	100.00%		**7.270%**	

1 **Q. Have you issued data requests (DRs) in this rate case?**

2 A. Yes. Our CoC analysis is informed by Company responses to 75 multipart
3 DRs.

4 **Q. How is your testimony organized?**

5 A. Our testimony is organized as follows:

6 Issue 1 – Capital Structure 3
7 Issue 2 – Cost of Common Equity (ROE) 4
8 What is New in this rate case 7
9 Overview of Staff ROE Position 10
10 Growth Rates 18
11 Peer Screen 22
12 Hamada Equation 24
13 Informed Staff Analysis 25
14 Alternative Models Examined 26
15 Simple Single-Stage Gordon-Growth DCF Model 26
16 Capital Asset Pricing Model (CAPM) 31
17 Issue 3 – Cost OF LT Debt 39
18 Conclusion 42
19

20 **Q. Did you prepare exhibits in support of your opening testimony?**

21 A. Yes. Staff prepared the following exhibits:
22 Staff/1303 .... Staff Three-Stage DCF Peer Screening
23 Staff/1304 .... Staff Three-Stage DCF ROE Modeling
24 Staff/1305 .... Staff Simple Single-Stage DCF ROE Modeling
25 Staff/1306 .... Staff Capital Asset Pricing Model ROE Modeling
26 Staff/1307 ....Long Run 10-30 Year Gross Domestic Product (GDP) Growth
27 Staff/1308 .... Long-Run Real GDP Growth Rates with BEA Data
28 Staff/1309 .... **CONFIDENTIAL** Cost of LT Debt Table & Maturity Profile
29 Staff/1310 .... News that Investors are Seeing

30 **Q. Does Staff support the Stipulated Terms on CoC?**

31 A. Yes. The Stipulated Terms very closely align with Staff's analysis. Therefore,
32 Staff recommends that the Commission adopt the Stipulated Terms on CoC.

1 **ISSUE 1 – CAPITAL STRUCTURE**

2 **Q. What is the basis for your recommendation for a capital structure of**
3 **50.0 percent Common Equity and 50.0 percent LT Debt?**
4 A. Staff has examined actual and projected information provided by Cascade in
5 Attachment A in response to Staff DR 135, on the one hand, and on the other
6 industry trends. Staff finds this consistent with a balanced capital structure.[1]
7 **Q. How has the Commission viewed capital structure?**
8 A. The Commission has generally accepted that a capital structure with 50
9 percent common equity and 50 percent LT Debt balances the lower cost of
10 borrowing against the credit enhancement represented by equity.[2]
11 Given that the actual and projected values for capital structure are
12 consistent with Commission precedent, Staff recommends that the
13 Commission find a 50 percent common equity capital structure reasonable.

14 **ISSUE 2 – COST OF COMMON EQUITY (ROE)**

15 **Q. What point ROE within what range of reasonable ROEs does Staff**
16 **recommend?**
17 A. Staff recommends, as do the other Parties, a point ROE of 9.40 percent at the
18 top of a range of reasonable ROEs of 8.66 to 9.33 percent. The upper limit

---

1 *See* as an example Commission discussion of equity structure in the floatation of PGE Stock after the Enron Bankruptcy.

2 Moody's announced this sweeping change of Outlooks to Negative from Stable for 25 utilities on January 19, 2018. See "For Spire Missouri, State Regulator's Rate Case Order is Credit Positive" by Jeffrey Casella, VP and Senior Analyst of Moody's released by Moody's on March 1, 2018, explaining how Moody's expects the effect from the recent changes in US tax laws will reduce the ratio of cash flow from operations pre-working capital to debt.

1 rounded up will support a 9.40 percent ROE in the broader context of this rate
2 case, considering other factors addressed simultaneously.
3 **Q. Does your recommended ROE meet appropriate standards?**
4 A. Yes. The 9.40 percent ROE Staff recommends meets the *Hope* and *Bluefield*
5 standards, as well as the requirements of Oregon Revised Statute
6 (ORS) 756.040.[3] Staff recommendations are consistent with establishing "fair
7 and reasonable rates" that are both "commensurate with the return on
8 investments in other enterprises having corresponding risks" and "sufficient to
9 ensure confidence in the financial integrity of the utility, allowing the utility to
10 maintain its credit and attract capital."[4]
11 **Q. Do Staff and the Company agree in this regard?**
12 A. Yes. Staff and the Company apply the same legal standards. While the
13 Company and Staff may disagree on what range of ROEs is reasonable, the
14 Parties agree that the 9.40 percent point ROE is appropriate. Staff finds this
15 ROE commensurate with that of other peer utilities and other investment
16 opportunities with risk exposure similar to Cascade's. When investors'
17 expected rate of return is measured using a reasonable expectation of long-
18 term growth and when risk is measured using an appropriate peer group of
19 utilities, the resulting 9.40 percent ROE can be supported. Here, the 9.40

[3] *See Federal Power Commission v. Hope Natural Gas Co*., 320 U.S. 591 (1944) and *Bluefield* Water *Works & Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923).
[4] *See* ORS 756.040(1)(a) and (b).

1 percent ROE is supported by Staff, the Company, and other stipulating
2 Parties.
3 **Q. What is the primary contributing modeling that supports Staff's**
4 **recommended 9.40 percent point ROE?**
5 A. Staff's two different three-stage discounted cash flow (DCF) models are the
6 foundation for Staff's recommended point ROE.
7 **Q. Did you perform indicator modeling as a general check on this**
8 **recommendation?**
9 A. Yes. Staff used Single-Stage DCF Modeling, and Capital Asset Pricing
10 Modeling (CAPM) as general indicators that the proposed 9.40 percent ROE
11 is neither excessively generous nor impairing of the Company's access to
12 financial markets. The Commission has, in the past, given no weight to the
13 CAPM and preferred analyses using the multi-stage DCF modeling.[5] Staff
14 uses results of models other than Three-Stage DCF just as a check of
15 reasonableness on the results obtained from the two different three-stage
16 models that we employed.
17 Staff's testimony provides additional background on each of Single-
18 Stage DCF Modeling and CAPM to ensure this testimony is informative and
19 provides incremental value to readers.

[5] *In the Matter of Portland General Electric's Proposal to Restructure and Reprice its Services in Accordance with the Provisions of SB 1149, Docket UE 115, Order No. 01-777, p. 32 (August 31, 2001); In the Matter of Northwest Natural Gas Company, dba NW Natural, Request for General Rate Revision, Docket UG 221, Order No. 12-437, p. 6 (November 16, 2012).*

WHAT IS NEW IN THIS RATE CASE

Q. What is new in the financial landscape since the Company's last general rate case?

A. **Volatility**: The key financial story in 2018 may be the return of volatility to financial markets. Interestingly, trends are not particularly good or bad if one looks at the ends of recent calendar years one year apart. A possibly helpful analogy is one having an exciting roller-coaster ride, who enters and leaves by the same level passenger loading gate. Similarly, much of the excitement and volatility in this past year's financial markets is muted by comparison of periodic market closing values, which on their unchanged face belie the wild ride.[6]

Population, Productivity, and GDP Growth: There is still considerable worry about families deciding to delay having children as working people age. That trend has been possibly exacerbated by uncertain immigration policies. Over the next 20 years, those children and immigrants not now present will not be working.

Federal Tax Cut: The Tax Cuts and Jobs Act enacted December 22, 2018, put pressure on utility credit ratings. It slightly increased required ROE, but this effect is rolled into Staff's 9.40 percent point ROE recommendation.

Productivity: Of perhaps greater interest for the long run is whether companies will use the tax break to invest in new plant, equipment, software,

6 *See* Exhibit No. Staff/1310 for news elaborating on this topic.

1 and processes making each U.S. worker more productive and more
2 competitive globally, as opposed to other uses such as stock buybacks.
3 Decisions of individual families and companies will drive future potential GDP
4 growth rates.
5 **U.S. Federal Reserve (Fed) Rate Increases:** Central banks of the world are
6 slowing the flow of easy-to-borrow money at historically low interest rates and
7 reducing the rollover of maturing securities on central bank balance sheets
8 into more purchases of treasuries, bonds, and other securities. The Fed has
9 decided that the neutral or natural equilibrium rate to target for a balanced
10 economy should now be lower than targeted by the Fed before the 2009
11 financial crisis. The Fed would like to continue gradually stepping up interest
12 rates to be better able to respond to the next economic downturn. U.S.
13 Treasury (UST) yields have both risen – pricing in Fed increases, and fallen in
14 2018, impacted by global uncertainties that make safer (less variable) U.S.
15 investments more attractive.
16 **Q. What are the implications of recent market trends for utilities?**
17 A. Contrary to what one might expect, the biggest risk to utility prosperity comes
18 not from global uncertainties, but rather from other parts of the economy (that
19 carry greater risks but offer greater returns) starting to do better and
20 appearing to have sustainable momentum toward higher returns. Global
21 uncertainties see investors rush back into safe havens like UST and their (in
22 many ways more attractive) proxy Investor Owned Utility (IOU) stocks with
23 dividend yields higher than UST. While sectors of the S&P 500 Stock Index

1 most associated with growth have seen falling stock prices, utilities without
2 extraordinary company specific challenges have positive returns for 2018.

3 **Q. Are interest rates, dividends and ROE's certain to rise?**

4 A. No. One of the joys of active markets is that divergent investors with different
5 views shape a consensus with their transactions. The increase in volatility
6 after a calmer than usual trend across most of a decade is the result of many
7 views and forces pushing and pulling markets in different directions. In any
8 given day, the markets can lurch toward a temporary consensus that can
9 change with any new information. Individual investors though may have
10 preferred gradually rising security prices of several years back. 2018 is a
11 reminder that security prices can fall as well as rise.

12 The corollary is that a financially healthy utility looking to attract investors
13 for the long-run must provide consistent gradually growing dividends. This
14 allows insurance companies, fund managers, and those who hope to retire
15 one day, a high certainty of future cash flows from dividends and stock price
16 appreciation over the long-run. The 2018 reduction in forward-looking
17 earnings-per-share (EPS) and more importantly forward-looking free-cash
18 flow-to-the-firm better justifies a higher utility stock price appreciation in the
19 long-run. That does not mean stocks are cheap, just not as dearly priced in
20 comparison to long-run trends as they were recently.

21 **Q. What is the implication for the Commission?**

22 A. Since about 1990, the Commission has seen a long decline to authorized
23 ROEs with substantial lag both due to some utilities delaying coming in for a

1 rate case and a possible preference by regulatory commissions for a gradual
2 and smooth process. Nationally that downward trend will continue until most
3 utilities have come in for rate cases.[7] Staff's proposed 9.40 percent point
4 ROE is consistent with this national trending.

5 In addition, utilities fare quite well in times with modest global
6 uncertainties. In 2018, utilities without material incremental company specific
7 risk exposure have weathered the return to greater market volatility better
8 than other market sectors.

9 **OVERVIEW OF STAFF ROE POSITION**

10 **Q. Describe the analysis underlying Staff's ROE recommendation.**

11 A. Staff continues to rely primarily on two different three-stage DCF models[8]
12 applied using a cohort group of peer utilities to estimate the expected return
13 on common equity required by the Company's investors. We compare the
14 results of our three-stage DCF analysis with national recently-decided gas
15 utilities' authorized ROE values as a check on the reasonableness of our
16 ROE estimates. We rely on Simple DCF and CAPM models as directional
17 vectors for a rough check on the results from our two separate three-stage
18 DCF models.

19 **Q. What are the results of your multistage DCF models?**

---

[7] This trend is visually depicted in Figure 2 of Staff Opening Testimony in the most recent Northwest Natural Gas Company rate case. In the Matter of Northwest Natural Gas Company, d/b/a NW Natural, Request for a General Rate Revision Docket No. UG 344, Exhibit Staff/200 Muldoon/15 (April 20, 2018).

[8] *See* the Commission's discussion of multistage versus single-stage DCF models in Order No. 01-777 at page 27.

1 A. Please see Table 4 below drawn from Exhibit Staff/1304 Muldoon, Watson/1

2 **Table 4[9]**

3 **Results of Staff's 3-Stage DCF Modeling**

4 **(See Exhibit No. Staff/203 for more detail)**

Common Stock Flotation Costs Adjustment Shifts Range of Reasonable ROE's Upward by :					12.5	bps
Range of Modeled Results		8.22%	to	9.33%	ROE	
Best Fit Range of Reasonable ROEs		8.66%	to	9.33%	ROE	
(Best fit is Staff's Hamada adjusted screened gas utilities that have most similar characteristics to NWN regulated gas operations in Oregon)						
Midpoint of Best Fit Modeling Results			9.0%	ROE		
(Staff's informed judgement excludes some of the lower range of modeling results depicted above)						
Staff Point ROE Recommendation:						
Staff notes that its upper limit rounded up will support a			9.4%	ROE		
in the broader context of this general rate case, considering other factors addressed simultaneously.						

5

6 **Q. How do these estimated ROE values compare with gas utilities'**

7 **national ROE values for 2018 General Rate Cases?**

8 A. These estimated ROEs are low compared with average 9.62 percent and

9 median 9.55 percent ROE for U.S. regulated natural gas utilities' authorized

10 return on equity capital decided in the first three quarters in 2018 as reported

11 by Regulatory Research Associates (RRA) an affiliate of S&P Global Market

12 Intelligence.[10]

13 Much of the country including all of the Greater Northwest, including

14 Oregon, Washington, Idaho, Montana, Utah, and Wyoming, is in line with

15 Staff's recommended 9.40 percent point ROE for Cascade.[11] Please see

16 Map 1 below showing the last gas ROE authorized by state commission.

17

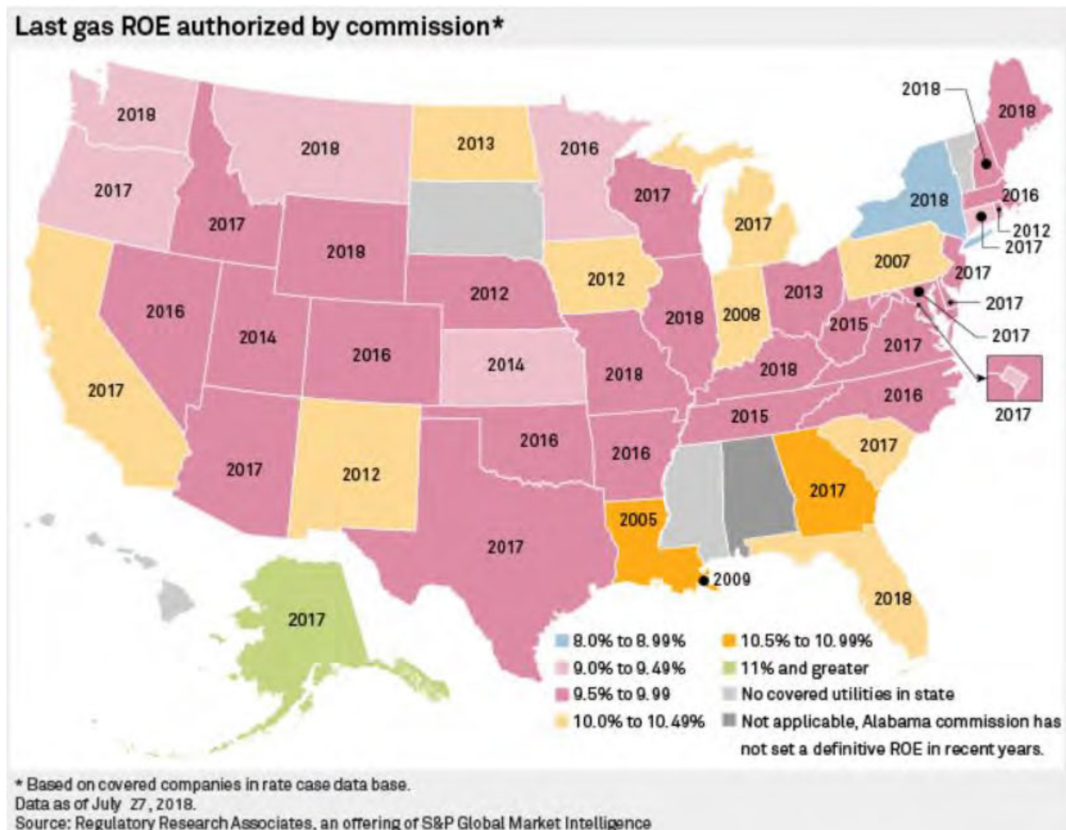
---

9 U.S. Treasury Inflation-Protected Securities is abbreviated as "TIPS".

10 *See* Average Electric, Gas ROE Authorizations Continue Downward Trend from 2017, Exhibit Staff/1310 Muldoon Watson/136.

11 *See* Exhibit Staff/205 in Docket No. UG 344 Northwest Natural general rate case.

Map 1



Q. Did your analysis reflect a synthetic forward curve?

A. Yes, for consistency, Staff utilized synthetic forward curve using UST Treasury Inflation Protected Securities (TIPS) break-even points that Staff developed for the recent Northwest Natural General Rate Case.[12] This reflects implied market-based inflationary expectations. Staff's recommendations are consistent with market activity indicating investor expectations of future inflation.

[12] Staff recently presented this modeling as NWN Docket No. UG 344, Exhibit No. 204 in NW Natural's general rate case, and so does not reproduce it here. In the Matter of Northwest Natural Gas Company d/b/a NW Natural Request for General Rate Revision Docket UG 344 Exhibit Staff/204 Muldoon Watson (April 20, 2018).

1 Staff assumes for purposes of its three-stage DCF modeling that Local
2 Gas Distribution Company (LDC) utility growth is bounded by the growth of
3 the US economy and more specifically impacted by challenges regarding U.S.
4 population and productivity in the long-run (20-year) modeling period.

5 **Q. Assume one presumed that future U.S. GDP growth would look like**
6 **the past 30 years. Would a ROE based on that assumption still fall**
7 **within Staff's recommended range?**

8 A. Yes, Staff extracted and ran regression on data from U.S. Bureau of
9 Economic Analysis (BEA) to generate the annual real historical GDP growth
10 rate shown in Table 4 above. Staff recommended range of ROEs includes
11 values that presume GDP growth over the next 30 years would look like that
12 of the past 30 years informed by other federal projections.

13 **Q. Do you show this analysis in your exhibits?**

14 A. Yes. Exhibit Staff/1308 shows our analysis in support of this finding.

15 **Q. How do your methods employed in this case differ from those utilized**
16 **by Staff in recent general rate cases, including the most recent**
17 **Northwest Natural Gas Company rate case, Docket UG 344?**

18 A. Staff's methods and modeling parallel those employed by Staff in recent
19 general rate cases.

20 **Q. Describe the two DCF models on which you primarily rely.**

21 A. Staff's first model is a conventional three-stage discounted dividend model,
22 which Staff denotes as a "30-year Three-stage Discounted Dividend Model
23 with Terminal Valuation based on Growing Perpetuity" (referred to as

1 "Model X"). This model captures the thinking of a money manager at a
2 pension fund or insurance company, or other institutional investor, who
3 expects to keep the Company's stock indefinitely and use the dividend cash
4 flow to meet future obligations.

5 Staff's second model is the "30-year Three-stage Discounted Dividend
6 Model with Terminal Valuation Based on P/E Ratio" (referred to as
7 "Model Y"). This model best fits the investor who has a goal they are working
8 towards. In addition to the income stream from dividends, this investor
9 intends to sell the stock as the goal is reached.

10 Both models require, for each proxy company analyzed by Staff, a
11 "current" market price per share of common stock, estimates of dividends per
12 share to be received over the next five years calculated from information
13 provided by Value Line, and a long-term growth rate applicable to dividends
14 10- to 30-years out. On this last point, Staff always recommends the
15 Commission be particularly vigilant for any substitution of a short-term growth
16 rate for a long-term 20- to 30-year growth rate. Some growth rates labeled
17 "long" may be supported by information looking at the next ten years or less
18 into the future.

19 For a smooth transition, Staff steps the rate of dividend growth between
20 the near-term, (the next five years), and that of long-run expectations.

21 **Q. How does Model X calculate the terminal value of dividends as a**
22 **perpetual cash flow into the future?**

1 A. Model X includes a terminal value calculation, in which Staff assumes
2 dividends per share grow indefinitely at the rate of growth in Stage 3
3 ("growing perpetuity"). In contrast, Model Y terminates in a sale of stock
4 where the price is determined by our escalated price/earnings (P/E) ratio.

5 **Q. Why is thirty years the primary horizon for financial decision-making?**

6 A. Investors focus on the 30-year U.S. Treasury (UST) Bond against alternate
7 investment opportunities. Thirty years is a generally accepted period for
8 economists to ascribe to one generation. It is a common length of time for
9 mortgages of plants, equipment, and homes. Many institutional holders of
10 utility securities match the cash flows from utility dividends to future
11 obligations such as the payout of life insurance, preparing to meet future
12 pension and post-retirement obligations, and interest service for borrowing.
13 Individuals plan for the education of their children, ownership of their home,
14 and provision for their retirement on this same multi-decade timeframe.

15 Staff uses five years for Stage One as that is the timeframe for which
16 Value Line estimates of future dividends are available. This is as far as Value
17 Line projects near-future trends. We use five years for Stage Two as a
18 reasonable length of time for individual companies' dividend growth rates that
19 are materially different from the growth rate used in Stage Three (and
20 common to all companies) to converge to a LT dividend growth rate more
21 representative of all gas utilities.

22 **Q. How do you address dividend timing?**

1 A. Each model uses two sets of calculations that differ in the assumed timing of
2 dividend receipt. One set of calculations is based on the standard
3 assumption that the investor receives dividends at the end of each period.
4 The second set of calculations assumes the investor receives dividends
5 at the beginning of each period. Each model averages the unadjusted ROE
6 values to generate an Internal Rate of Return (IRR) produced with each set
7 of calculations for each peer utility. This approach accounts for the time value
8 of money, closely replicating actual quarterly receipt of dividends by investors.
9 **Q. What accounts for differences in peer capital structures?**
10 A. Each model employs the Hamada equation[13] to calculate an adjustment for
11 differences in capital structure between each peer utility and the Cascade-
12 proposed and Staff-assumed capital structure for the Company.[14] When few
13 peer utilities are available, the Hamada equation ensures Staff's analysis
14 addresses differences in peer utility capital structures.
15 **Q. Did recent tax changes impact Hamada adjustments?**
16 A. Yes. However, Staff relies on the 2018 prevailing 21 percent corporate tax
17 rate causing our point ROE recommendation of 9.4 percent to roll-in slightly
18 upward tax effects.
19 **Q. What price do you use for each peer utility's stock?**

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[13] Dr. Robert Hamada's Equation as used in Staff/1303, Muldoon Watson/3 separates the financial risk of a levered firm, represented by its mix of common stock, preferred stock, and debt, from its fundamental business risk. Staff corrects its ROE modeling for divergent amounts of debt, also referred to as leverage, between the Company and its peers.

[14] Staff has described this adjustment in recent cost of capital testimony. *See*, as an example, Staff's description in the Matter of Idaho Power Company, Request for General Rate Revision Docket UE 233 Exhibit Staff/800, Storm/54-57 (December 7, 2011).

A. Staff used the average of closing prices for each utility from the first trading day in April, May, and June 2018, to represent a reasonable snapshot of utility stock prices.

Q. How do Staff's two DCF models differ?

A. Model X uses the calculation of a growing perpetuity as part of the terminal valuation. This may be the most common approach used in multistage DCF models.

Model Y uses the current price-earnings (P/E) ratio[15] multiplied by the estimated "earnings per share" (EPS), which establishes the stock's "selling price" for terminal valuation. Staff estimates the terminal EPS analogously with methods used to estimate the final dividend in both models; i.e., based on Value Line (VL) estimates to which multiple growth rates are sequentially applied.

Q. What is the purpose of Model Y?

A. Staff includes this model as a method by which to incorporate the fact that most companies have estimates of future EPS and future dividends growing at different rates. Utilizing EPS that grows on a separate trajectory than dividends is the foundation for an alternative means of terminal valuation.[16]

Q. To recap, do you capture both the perspective of a buy and hold investor and an investor who plans to sell in the future?

[15] "Current" in this context means the price obtained, as previously described, divided by VL's estimated EPS; i.e., it is a forward P/E, not an historical P/E.

[16] Please note that the approach used in this second model is not the same as using a singular estimate of the growth rate in EPS as the growth rate in dividends.

1 A. Yes. The stipulated 9.40 percent point ROE is consistent with findings
2 modeling the perspectives of both types of investors through Staff's two
3 different three-stage DCF models.

4 **GROWTH RATES**

5 **Q. Please explain the use of growth rates in the estimation of ROE.**
6 A. The estimated rate of growth of future dividends is a very important input.
7 Staff refer specifically to the singular growth rate for constant growth DCF
8 models and the long-term growth rate for multistage DCF models such as
9 Staff's two types of three-stage DCF modeling.

10 **Q. What long-term growth rates did you use in Staff's two three-stage**
11 **DCF models?**[17]
12 A. Staff used three different long-term growth rates, with different methods
13 employed in developing each.
14 The first method uses the U.S. Congressional Budget Office's (CBO)
15 4.0 percent nominal 20-year GDP growth rate estimate.[18]
16 Staff's second Composite Growth Rate applies a 50 percent weight to
17 the average annual growth rate resulting from estimates of long-term GDP by
18 the U.S. Energy Information Administration (EIA), the U.S. Social Security
19 Administration, PricewaterhouseCoopers estimate for long-run (10- to 30-

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[17] Methods used here related to GDP-based growth rates are similar, if not identical to methods Staff has used in past proceedings. *See*, as an example, Staff's discussion of these methods and, to a limited extent, their conceptual underpinnings in Docket. UE 233, Exhibit Staff/800, Storm/46 – 52.

[18] *See* Staff/1307, Muldoon Watson/1 for these growth rates.

1 years from now), and the CBO, with each receiving one-quarter of that 50
2 percent weight.[19] The remaining 50 percent is the average annual historical
3 real GDP growth rate, established using regression analysis, for the period
4 1980 through 2017 calculated as shown in Staff/1308, Muldoon Watson/1, to
5 which we apply the TIPS inflation forecast discussed above.

6 Staff's third "Near Historical" Stage 3 annual growth rate, is an equal
7 weighted average of the earlier described U.S. Bureau of Economic Analysis
8 (BEA) derived projection which presumes the future will look much like the
9 past on the one hand, and on the other hand, the Social Security
10 Administration's long-run projection, which is informed by the "baby problem"
11 or drop in working-age Americans 20 years from now. Table 5 below
12 captures LT GDP growth rates Staff used.

[19] The EIA is the Energy Information Administration within the U.S. Department of Energy (DOE), OMB is the Office of Management and Budget, and CBO is the Congressional Budget Office. EIA and OMB's estimates are of nominal GDP. We applied to CBO's estimate of real GDP as an inflation rate for the relevant timeframe developed using the Treasury Inflation-Protected Securities (TIPS) method described by Staff in testimony in multiple recent general rate case proceedings.

1
2

Table 5 – Long-Run GDP Growth Rates Used in Staff's ROE Modeling

Stage 3 – Long-Term Annual Dividend and EPS Growth Rates					
Component	Real Rate	TIPS Inflation Forecast	20-Yr Nominal Rate	Weight	Weighted Rate
Energy Information Administration	2.00%	1.99%	4.03%	12.50%	0.50%
PricewaterhouseCooper	1.80%	1.99%	3.83%	12.50%	0.48%
Social Security Administration	2.20%	1.99%	4.23%	12.50%	0.53%
Congressional Budget Office			4.00%	12.50%	0.50%
BEA Nominal Historical,1980 Q1 – 2017 Q4	2.76%	1.99%	4.80%	50.0%	2.40%
Composite				100%	4.41%
Congressional Budget Office Long-Term 20-Year Budget Outlook			4.00%	100.0%	4.00%
BEA Nominal Historical,1980 Q1 – 2017 Q4	2.76%	1.99%	4.80%	50.0%	2.40%
Social Security Administration	2.20%	1.99%	4.23%	50.0%	2.12%
Near Historical				100%	4.52%

Note: Near Historical assumes that various federal initiatives will have greater long-run positive impact than the Congressional Budget Office expects.

3

4 **Q. Does this approach capture a reasonable set of investor expectations**
5 **similar to Staff's analysis in other recent general rate cases?**
6 A. Yes, Staff modeling captures the expectations of investors who think
7 variously that: A) the non-partisan CBO is reliable, B) blended federal agency
8 expert analysis also informs the historical track record, and C) one should be
9 optimistic about the economy's long-run growth, provided there are still
10 enough non-retired adult Americans to make it happen.
11 **Q. Is it appropriate to use estimates of long-term GDP growth rates to**
12 **estimate future dividends for gas utilities?**
13 A. Yes. In many of the Company's prior rate cases, Staff has shared plots of
14 U.S. gas demand growth since 1950 on a three-year moving average. This
15 downward trending consumption curve allows GDP growth to be a
16 conservative proxy for both gas sales and dividend growth rates.
17 **Q. Can relying on a long-term GDP growth rate overstate required ROE?**

1 A. Yes. It is possible that Staff modeling anticipates greater growth than may be
2 realized and so overstates required ROE to attract investors. Our highest
3 growth rate presumes return to near historical U.S. GDP growth rates.
4 **Q. Is it important to distinguish between long-run 20- to 30-year rates**
5 **and rates over the next five years?**
6 A. Yes. Over-extrapolating a snapshot of short-term data undermines
7 confidence in modeling results. For example, Value Line, Blue Chip, and a
8 variety of other financial resources focus most on the next five years. The
9 next five years may be affected by recent events. We have had a tax cut,
10 rising interest rates that prompted many companies to raise dividends more
11 than usual, and we are coming out of a market downturn wherein one might
12 expect a bit of a jump. But that jump or boost does not happen every year
13 forever. Over the long run, <u>people and productivity</u> are key drivers of
14 economic growth.
15 **Q. Is Cascade growing faster or slower than the rate of the overall**
16 **economy?**
17 A. Nationally, there is a persistent increase in energy efficiency and a durable
18 downward slope or decline in usage of both electricity and natural gas per
19 residential customer. Giving the Company benefit of doubt, Staff presumes
20 that Cascade may be growing as fast as, but no faster than the U.S.
21 economy.
22 **Q. In Staff's two different three-stage DCF models, Staff is looking for**
23 **growth rates for a period between 10 and 30 years in the future, or an**

1 **average of 20-years out. Why can't Staff just use a 5- or 10-year**
2 **projection?**
3 A. Staff could, but there is better information available. If a primary concern is
4 whether enough Americans are both working and highly productive 20 years
5 from now to support a robustly growing economy, 10-year data is not yet
6 impacted by retirement of persons born in 1960 or persons not immigrating
7 and not being born to U.S. families now. A better solution is to use data that
8 is projected with those difficulties in mind.

9 **PEER SCREEN**

10 **Q. How did you select comparable companies (peers) to estimate NW**
11 **Natural's ROE?**
12 A. Staff used companies that met the following criteria as peer utilities to the
13 regulated gas utility activities of Cascade:

1. Covered by Value Line (VL) as a gas utility;
2. Forecasted by VL to have positive dividend growth;
3. LT Issuer Credit Rating equal to or better than BBB- from S&P, or Baa3 from Moody's;
4. No decline in annual dividend in last four years based on VL;
5. Has heavily regulated gas LDC revenue;
6. Has LT Debt under 56 percent in VL Capital Structure; and
7. Has no recent merger and acquisition activity.

14 **Q. What cohort of companies resulted from your screens?**
15 A. Please see Exhibit Staff/1303, Muldoon Watson/2 for detailed Staff screens
16 and also for a table that shows the list of peer utilities obtained from Staff

1 screens. Exhibit Staff/1303 also shows straw Company peer utilities used to
2 model the Company's position.
3 **Q. Why do you eliminate companies that are not forecasted to have**
4 **positive dividend growth?**
5 A. Our screening is consistent with Staff past practice. There is evidence that
6 investors find common stock of dividend-cutting utilities much less attractive.
7 General Electric Co. (GE) is the latest example of why a company does not
8 cut long standing gradually growing quarterly dividends.[20] GE lost about half
9 of its stock value while the S&P 500 rose sharply.
10 **Q. Why does Staff exclude utilities engaged in merger activities?**
11 A. Mergers can mean great change in both the acquiring and the acquired
12 companies over time. Before the merger both the target and the purchasing
13 companies may have had regular patterns of management and performance,
14 in part reflective of employees, executives, and board members acting
15 consistent with a given corporate culture and identity. A merger can be a
16 break from those prior patterns.
17 Merger uncertainties can involve changes to computer systems, changes
18 in management focus, changes in staffing, different attitudes about risk, and
19 many new initiatives that may or may not succeed. Even when the acquiring
20 company announces it intends to preserve continuity, mergers can bring

[20] *See* Exhibit Staff/1310 Muldoon Watson/60 for more about the precipitous GE stock plunge after cutting dividends.

1 material changes as different corporate cultures collide in ways that are hard
2 to accurately assess in the moment.
3 Staff excludes from its sample of peer utilities those engaged in merger
4 activities for which the current and near-term (five-year) Value Line
5 projections are possibly reflective of the potential for merger rather than
6 typical utility operations. Staff also excludes utilities whose operations are
7 substantially unregulated as they are not representative of Cascade's local
8 natural gas distribution company (LDC) operations.
9 **Q. Did Staff's peer group for three-stage DCF modeling reasonably**
10 **address peer utility capitalization size?**
11 A. Yes. Most of Staff's peer group is the small to mid-cap market capitalization
12 size like Cascade.[21] Staff therefore makes no adjustments for capitalization
13 size in its three-stage DCF modeling.

14 **HAMADA EQUATION**

15 **Q. Your application of the Hamada Equation to un-lever peer utility**
16 **capital structures and to re-lever at Cascade's target capital structure**
17 **increases required ROE. Why is this adjustment reasonable?**
18 A. Staff employs the Hamada Equation as a check on the reasonableness of its
19 modeling results. This allows Staff to better compare companies with
20 different capital structures driven by differing amounts of outstanding debt.
21 As earlier discussed, our screening criteria already identify peers that have a

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[21] *See* Exhibit No. Staff/1303.

very close capital structure to the Company. Use of the Hamada adjusted results helps ensure that Staff has captured all material risk in our analysis because it captures additional risk associated with varying capital structure.

Within the confines of Staff's testimony, one can see the steps to un-lever and re-lever a peer company's capital structure as the equivalent of removing debt of peer companies with varying capital structures, and then adding enough debt back to equal Cascade's balanced target capital structure in this general rate case.

INFORMED STAFF ANALYSIS

Q. Did Staff take into account information from other models?

A. Yes. Staff performed CAPM modeling and Simple DCF modeling, and reviewed the Company's testimony, which informed Staff's recommendations.

Q. Do you monitor and analyze current and projected market conditions?

A. Yes. Staff's analysis includes analysis of the current economic climate and its impact on our estimates of long-term growth. We also rely heavily on feeds from SNL Financial LC (SNL), Bloomberg, Moody's, S&P, WSJ, and other sources to make sure that our financial understandings are reflective of investor expectations. Please see a cross section of recent financial market news in Exhibit Staff/1310.

Q. Did you develop your recommendations while informed by authorized ROEs in other parts of the country?

1 A. Yes. Staff examined 2018 authorized ROEs across the nation in comparison
2 with 2015 ROE decisions published by Regulated Research Associates
3 (RRA), an offering of S&P Global Market Intelligence, as discussed earlier.
4 **Q. Did you use robust and proven analytical methodologies?**
5 A. Yes. Staff's methods are robust, proven, and parallel Staff's work over the
6 last decade.
7 **Q. Describe how you performed your analysis.**
8 A. Using the cohort of proxy companies that met our screens, Staff ran each of
9 Staff's two three-stage DCF models three times, each time using a different
10 long-term growth rate.

11 **ALTERNATIVE MODELS EXAMINED**

12 **Q. What control modeling did you perform to corroborate your three-**
13 **Stage DCF results?**
14 A. Staff performed Simple DCF and CAPM modeling that supports Staff three-
15 stage Model X and Model Y DCF modeling. While Staff does not recommend
16 that any alternate approach should replace the Commission's reliance on
17 three-stage DCF modeling, such alternate models may offer a check on the
18 reasonableness of our recommendation or provide a directional vector that
19 helps the Commission select a point within Staff's range of reasonable ROEs
20 as best point ROE.

21 **SIMPLE SINGLE-STAGE GORDON-GROWTH DCF MODEL**

22 **Q. What is the Single-Stage DCF Model?**

A. One of the preliminary methods used by financial analysts in valuation is the Discounted Cash Flow (DCF) model. In simple terms, the DCF model is based on the idea that a company's value is equal to the net present value (NPV) of all of its future cash flows. The analyst determines which cash flows to measure such as: cash from operating activities, free cash flow to equity, net change in cash, etc., and then applies a discount rate for each of the operating periods the analyst is projecting. Adding those up provides an estimate for the value of a company. Dividing that corporate value by the number of common shares outstanding also provides a very rough estimate of value-based target share price.

Q. Please explain further.

A. The Single-Stage DCF – known variously as a stable growth rate model, simple DCF, or the Gordon Growth Model – uses the same time-value of money principles as a standard Three-Stage DCF but makes two simplifying assumptions. First, using dividend payments as the sole cash flow, it assumes that the growth rate will continue, unchanged, into perpetuity (forever). This hugely simplifies the standard Three-Stage DCF by removing the need for an analyst to determine different discount rates for different time periods, and the need to estimate different growth rates across the time horizon. Additionally, by limiting cash flow inputs to dividend payments, the analyst avoids myriad complexities when attempting to account for each possible flow. This simplification comes at the expense of not accounting for

1 stock price appreciation, which is the second component of income an
2 investor derives from holding common stock.

3 **Q. What formula is used in the Single-Stage DCF Model?**

4 A. The Simple DCF as used to roughly estimate the cost of equity capital, is
5 commonly written as follows:

6 **$r = D_1/P_0 + g$, where:**
7 r = Cost of equity capital;
8 D_1 = Quarterly dividend expected in the next quarter;
9 P_0 = Current stock price, and;
10 g = Perpetual growth rate.

11 Thus, with no need for complex inputs or analysis beyond selecting a
12 trusted source for the next quarter's expected dividend, an analyst armed with
13 algebra and current stock information can conduct a very rudimentary cost of
14 equity valuation using the Simple DCF. This simplicity is why the Single
15 Stage DCF is one of the first valuation concepts taught in many university
16 finance courses.

17 **Q. Can the Simple DCF be modified to be as informative as more**
18 **complex models?**

19 A. When considering the value of such a simple method, it's important to keep in
20 mind that Simple DCF analysis is only as good as the judgement of the
21 analyst making it. It is based on simple principles as a rough finger in the
22 wind estimation of investor required ROE. That simplicity guarantees that the
23 result cannot incorporate known, measurable and material information about
24 the future usually built into Three-Stage DCF analysis.

1 **Q. Are there risks in the Single-Stage DCF Model's limited inputs?**
2 A. Three-Stage DCF is a valuable financial industry standard because its inputs
3 are based on intrinsic value of the company and of the economy in which the
4 company operates. Caution and discretion must be used when calculating
5 the cash flows to be used in a given version of the model. Inputs such as
6 growth should be based on well vetted and reliable sources as opposed to
7 sell-side marketing information used to entice new investors. Reliance on
8 overly optimistic inputs or use of outboard after-the-fact adjustments can have
9 a large impact on the model output. The more adjustments an analyst uses,
10 the more likely predictions will be over-stated or under-stated.
11 **Q. How has the Commission viewed the Single-Stage DCF Model?**
12 A. The Commission traditionally favors a Three-Stage DCF analysis, noting in
13 Docket No. UG 132 that the multi-stage DCF improves on the implicit
14 assumption in the single-stage version that dividends grow indefinitely at the
15 same rate.[22] The Commission affirmed its preference for the multi-stage
16 model in Docket No. UE 115, stating, "We conclude that the parties' single-
17 stage DCF analyses provide no information not already contained in their
18 complex DCF analyses."[23]
19 For Staff purposes, the Single Stage DCF functions best as a supporting
20 check on the estimates provided by more robust methods of analysis.

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[22] In the Matter of Northwest Natural Gas Company, Application for a General Rate Revision, Docket UG 132, Order No. 99-697 at 23 (November 12, 1999).

[23] Docket UE 115, Order No. 01-777 at 27.

Dividends that are gradually increasing and never decreasing are essential for Single-Stage DCF to offer any reliability. Well managed utilities satisfy investors looking for a higher returning alternative to stable fixed income investments by maintaining this gradual year over year increase to dividends. If dividends are erratic or fall, Simple DCF loses all predictive value. For example, the Simple DCF cannot make a prediction for future fair value of a high-tech growth stock that pays no dividends. The high tech stock is valued in the market, but the Simple DCF predicts a future value of $0 based on the NPV of future dividends.

Q. Is anything lost by over simplifying?

A. One of more famous quotes attributed to Albert Einstein was, “Everything should be made as simple as possible, but not simpler.” Observation of market investment results irrefutably validates that reading Value Line’s predicted next quarter dividend for a company’s common stock does not guarantee investment success.

Staff acknowledges the limitations of the Single Stage DCF by using it only as a check on primary analysis. While acknowledging the Commission’s preference for Three-Stage analysis, Staff maintains that the volatility inherent to valuation models is reasonably aligned by using simple models like single stage DCF and CAPM to orient the more powerful and more informed modeling. As a primary model for determining return on equity, Single-Stage DCF is insufficient. But used like a spotter telescope attached to a more powerful but more sensitive observatory optical system, Single-Stage DCF

can be used as a useful check or vector for calibrating more informative methods for calculating ROE.

Q. What are Staff's Simple DCF results?

A. Staff's simple DCF shows an average of 9.03 percent ROE in a range of 8.52 percent to 9.70 percent. As a directional vector, the Simple DCF is supportive of Staff's point 9.40 percent at the top of Staff's reasonable range of ROEs, but recommending of caution in that the average for the peer group is markedly lower. Please see Staff Exhibit 1305 for this modeling.

CAPITAL ASSET PRICING MODEL (CAPM)

Q. What is the CAPM)?

A. The CAPM is a model used by analysts to project an asset's return on equity by measuring its non-diversifiable risk (also known as systematic or market risk). While certain risks can be avoided through diversification, other risks are unavoidable and investors who accept these risks – as opposed to investors who purchase treasury bonds or other low-risk securities - expect to be compensated accordingly with a higher return on equity. CAPM calculates this return by determining a risk premium for the market in general, then modifying that premium based on a measurement of the security's individual risk, known as its beta.

Q. How does the CAPM function?

A. CAPM assumes that an individual security's risk can be given as a measurement in relation to the risk of the market as a whole. This model

values a stock as a function of its beta[24] (again, riskiness), alongside the general market return (typically using the S&P 500 returns as a market proxy) and a no- or low-risk investment (such as the yield on a 10-year UST note or a 30-year UST bond). In the case of utilities, Staff finds the best fit, considering long lived utility assets and long-term 30-year utility debt, is the 30-year UST bond. Within the CAPM, this long bond can be referred to as the Risk Free Rate represented by the symbol R_f.

The model itself is shown as:

$$R_s = R_f + \beta_s(R_m - R_f)$$

Where:

R_s= the stock's expected return (and the company's cost of equity capital).

R_f= the risk-free rate; widely accepted to be the yield on the 30 year UST bond.

R_m= the expected return on the stock market as a whole; generally represented variously by Bloomberg as the Standard and Poor's (S&P) 500 stock index or the New York Stock Exchange (NYSE) composite index.

β_s= the stock's beta.

Q. How did Staff determine the stock's beta for use in CAPM?

A. A stock's beta can be calculated individually by one examining the volatility of returns on an individual security compared to market returns. However, there is broad reliance by cost-of-capital analysts on Value Line (VL) for beta calculations. Staff uses VL as well. Standardizing on the use of VL beta

[24] Beta in this context is a measure of whether a stock is more or less volatile than the market. A beta less than one is less volatile, and a beta over one is more volatile than the market, where the market is defined to have a beta value of one.

1 simplifies our discussion regarding referent index, data time frame, calculation
2 method, and historical vs. fundamental methodologies. Further VL calculation
3 of beta has different adjustments for reversion to mean than do other sources
4 like Bloomberg and Yahoo Finance.

5 **Q. What is the Commission's historical treatment of CAPM results?**

6 A. In the past, the Commission used CAPM regularly to determine ROE, but
7 several orders issued in the 1990s noted growing concern with the model's
8 reliability. In 2001, the Commission addressed the issue in two dockets:

9-13
- In Docket No. UE 115, Order No. 01-777, the Commission acknowledged it had relied on CAPM for over 20 years, but gave the results no weight in the case before it. The Commission noted, however, that CAPM may provide a useful and reliable addition to multi-stage DCF results for cost of equity.[25]

14-22
- In Docket No. UE 116, Order No. 01-787, the Commission noted that Staff's CAPM analyses were producing results below the utility's current cost of new, long-term debt, and Staff's adjustments did not fully address the CAPM deficiencies. The Commission gave the CAPM results no weight. The Commission again found that, "While the results in this case cast further doubt on the validity of Staff's CAPM methodology, we do not believe that CAPM should be rejected in its entirety. We continue to believe that, in certain cases, CAPM analyses may provide a useful and reliable addition to the DCF results for determining cost of equity.".”[26]

23 In 2007, the Commission affirmed this approach, stating, "…For the
24 reasons given in docket UE 115, we reject the risk positioning model. *See id*.

[25] *In the Matter of Portland General Electric's Proposal to Restructure and Reprice Its Services in Accordance with the* Provisions *of SB 1149*, Docket No. UE 115, Order No. 01-777, p. 32 (August 31, 2001).

[26] *In the Matter of* PacifiCorp's *Proposal to Restructure and Reprice Its Services in Accordance with the Provisions of SB 1149*, Docket No. UE 116, Order No. 01-787, p. 31 (September 7, 2001).

at 33. We find, based on the evidence in the record that the reasoning expressed in that order remains sound."[27]

Q. Why has Staff chosen to use CAPM in this proceeding?

A. Analysts regularly utilize CAPM to supplement a range of ROE measurements. For Staff's purposes, CAPM serves best as a check on other, more robust analyses. By providing an estimate of risk and the recommended ROE, we are more confident in the recommended range of ROE.

Staff's use of the CAPM in this general rate proceeding is therefore a check on the reasonableness of the two other primary three-stage DCF models prepared by Staff. Within this context, our CAPM calculations are providing supporting and not foundational recommendations to the Commission. This use is consistent with Commission orders to date.

Q. Did Staff modify CAPM to determine ROE?

A. No.

Q. Please explain why not.

A. As described above, the unmodified CAPM is useful as a verification of other more robust methods of calculating ROE. Adders and adjustments applied to its inputs do not necessarily serve to make CAPM more accurate and can reduce the usefulness of the model. Since the model is relatively simple,

[27] *In the Matter of* Portland *General Electric Company*, Docket Nos. UE 180, 181, 184, Order No. 07-015, p. 47 (April 2, 2007).

1 even a small adjustment to one of its inputs can cause a wide swing in its
2 result.
3 One method commonly used to modify a company's beta is the Hamada
4 method, (also known as the Hamada adjustment procedure or Hamada
5 equation). Named for Professor Robert S. Hamada, who contributed to its
6 development, this method provides a process to de-lever and re-lever a
7 company's beta for use in analysis (including CAPM) to show the positive
8 relationship between financial leverage and a firm's overall risk.
9 Staff explains above the reasonableness of applying the Hamada
10 method as a check on Staff's multi-stage DCF analyses. Below, we explain
11 why this method is an unnecessary complication in a simple CAPM
12 verification to check the results of Staff's multi-stage DCF analysis.
13 The equation compares the firm's theoretical unlevered beta (one that
14 assume the company is financed only by equity) with a more realistic levered
15 beta, reflecting the company being financed by both debt and equity.
16 Variations of the Hamada method also allow analysts to make adjustments for
17 corporate tax deduction, providing further opportunities for tailoring the results
18 of the CAPM.
19 The process of de-levering and re-levering the beta can certainly serve
20 to increase a company's beta, but it suggests that a company's financial risk
21 is the only relevant component of its beta. Beta, as
22 calculated by Value Line and other resources, is a
23 function of how a company's stock responds to the rise

1 and fall of the market as a whole. It's safe to assume this reflects an
2 investor's understanding of a firm's overall riskiness, including financial
3 leverage.

4 **Q. Can't one just shift the modeling on a pivot point to remedy**
5 **deficiencies?**

6 A. No. Use of a large outboard weighting in a simple model causes the
7 assumptions in the weighting to overwhelm the informative results of the
8 model. By modifying the risk variable in a way that gives more weight to its
9 financial leverage, the outcome will be flawed. For example, the assumption
10 that financial leverage is the most important component of a firm's risk ignores
11 many factors that are already efficiently reflected in a firm's stock price and its
12 relationship with the market: Cost of LT Debt, regulatory conditions that
13 support or restrict the generation of cash for the utility, debt maturity
14 concentration, and other liquidity factors. Staff believes use of the Hamada
15 method is an unnecessary complication to an otherwise simple CAPM
16 verification check.

17 Besides using the Hamada method to offset a given variable in CAPM,
18 analysts can alter other variables simply by using alternate benchmarks. In
19 Staff's analysis, the yield of a 30 year UST bond is used to represent the risk-
20 free rate available to an investor. Some analysts choose to employ the less-
21 frequently traded 20 year UST bond as their risk-free rate, but Staff believes
22 this is a flawed approach.

1 The slope of the increase in UST yields as the time horizon of an
2 investment increases is non-linear, with most of the increase occurring in the
3 first 10 years, and slower increase for the remaining years. The 30 year rate
4 not only reflects an investment horizon similar to common stock, but it is more
5 commonly traded than the 20 year, leading to higher liquidity of the
6 investment.

7 **Q. Could the modeling simply be adjusted for error?**

8 A. Another common method of altering the CAPM is by modifying the ROE with
9 an adder that accounts for the after-tax weighted average cost of capital
10 (ATWACC). Staff does not believe an after-tax modifier is necessary, as the
11 purpose of CAPM is to provide a simple estimate of ROE. To determine an
12 ATWACC modification would require a full breakdown of the cost of a
13 company's long-term debt in addition to the spread of financing between
14 equity and debt. This would require a consensus on appropriate cost of LT
15 Debt, but that value is usually contested in general rate cases.

16 To describe it more generally, CAPM should not be made to bear the
17 weight of the adders and modifications discussed above. CAPM is based on
18 logic, investment philosophy, and simple inputs. The more adjustments an
19 analyst makes to a simple model, the less likely it is to act as a check on
20 other analysis and the more likely it is to inject new errors driven by outboard
21 adjustments.

22 **Q. What are the results of Staff's CAPM analysis?**

23 A. The results of Staff's CAPM analysis are summarized in the table below.

CAPM Results	
High	**8.24**
Low	6.18
Average	7.13

1
2 Staff began by compiling a wide range of inputs for this model. Staff
3 calculated the beta by using an average of the betas provided by Value Line
4 for the peer group used for cost of capital modeling in this case, which was
5 0.72.
6 For the risk-free rate, Staff gathered a range of estimated yields for the
7 30 year UST bond as given by resources such as Bloomberg, MarketWatch,
8 and Yahoo! Finance. These ranged from a low of 2.94 percent to a high of
9 3.7 percent, with an average of 3.10 percent.
10 The Market Risk Premium was given directly by Ibbotson[28] as 4.5
11 percent, as opposed to 6 percent by Morningstar. While Morningstar's
12 calculation includes the average market returns from 1926 to 2015, the
13 Ibbotson model was calculated using market returns from 1980. This reflects
14 a shift toward a lower forward-looking market risk premium since 1980.
15 **Q. What other risk premiums did Staff calculate?**
16 A. Staff calculated a third market risk premium by gathering a long-run range of
17 market returns similar to Morningstar's market risk premium, which showed

[28] Roger G. Ibbotson is a Professor of Finance at Yale School of Management who has written extensively on capital market returns, cost of capital and investment strategies. He founded Ibbotson Associates a financial research firm.

1 an average S&P 500 return of 9.40 percent. Subtracting the above risk-free
2 rate average of 3.10 percent gives a market risk premium of 6.3 percent.
3 Using these inputs, the CAPM projects an expected return on equity of
4 between 6.18 percent and 8.24 percent for the company, with an average
5 ROE of 7.13 percent. In general, the CAPM results suggest that the 9.40
6 point recommendation derived from Staff's Three Stage DCF Modeling is not
7 excessively generous, and not requiring upward adjustment.
8 Staff's recommendation is also consistent with a recent stipulation
9 containing a 9.40 percent ROE recommendation submitted by parties in an
10 MDU Resources Group, Inc. gas distribution case before the North Dakota
11 Public Service Commission.[29] While Staff does not rely on said findings, Staff
12 notes that this consistency is supportive of Staff's overall recommendation of
13 a 9.40 percent point ROE in Oregon for Cascade.
14 It is possible that a substantially lower ROE would adequately
15 compensate investors for holding the Company's stock, but it is very unlikely
16 that Staff's point ROE recommendation of 9.4 percent would be insufficient to
17 attract equity investors looking to hold utility stock.

18 **ISSUE 3 – COST OF LT DEBT**

19 **Q. Have you compiled a summary table illustrating your calculation of**
20 **Cascade's Cost of LT Debt?**

[29] See Exhibit Staff/1310.

1 A. Yes, please see Confidential Exhibit Staff/1309, Muldoon Watson/4
2 supporting our recommendation for a 5.140 percent Cost of LT Debt.
3 **Q. Is that table updated to reflect the Company's test year planned debt**
4 **issuance(s) and pro forma replacement of the current portion of LT**
5 **Debt maturing in the test period?**
6 A. Yes. This table remains confidential until the Company informs the public of
7 issuance detail.
8 **Q. What is Staff's approach to constructing reasonable forward coupon**
9 **rates?**
10 A. Staff looks at referent underlying UST very-near-term forward market trends
11 for various maturities going out about 18 months. Staff then applies the
12 prevailing spreads over UST informed by Moody's about trends in spreads in
13 the very-near term. Staff compares the sum of the UST forward for the target
14 issuance date and maturity against indicative recent bond issuances of like
15 rated and situated utilities. This generates a reasonable constructed forward
16 bond coupon rate.
17 **Q. Were bond series that mature before the test year removed from your**
18 **table of outstanding LT Debt in the test year?**
19 A. Yes. Staff's methods herein are consistent with other recent general rate
20 cases.[30] Again, some concerns linger for Staff in this settlement position, and

---

[30] Staff's approach to Cost of LT Debt is consistent with Staff's work and the resulting Commission decisions in recent gas utility general rate cases, namely: OPUC Order No. 14-015 in Docket. UG 246, Order No. 15-109 in Docket. UG 284, and OrderNos.16-076 and 16-109 in Docket. UG 288.

1 may well linger for other parties. Those concerns are well-founded in that
2 UST yields have both risen and fallen again this year.
3 Despite any differences in forward perspectives, Staff finds that a 5.140
4 percent cost of LT Debt reasonably balances three divergent perspectives:
5 flight to safety in response to trade and other global uncertainties, certain
6 positive news that might let the Fed continue to step up interest rates at about
7 a 25 bps rate per quarter, and caution by senior economists of Moody's and
8 other analytic entities that suggested peak yields on UST experienced in 2018
9 were unsustainable.
10 **Q. Did you prepare a debt maturity profile for Cascade?**
11 A. Yes, in Exhibit Staff/1309, Muldoon Watson/3, we have provided a debt
12 maturity profile for reflecting Staff's proposed Cost of LT Debt table in
13 Staff/1308, Muldoon/2. There are no overly concerning debt maturity
14 concentrations. Staff accepts the Company's heavier reliance on 30-year
15 rather than 10-year debt due to the current relative flat UST yield curve. In
16 recent months, the costs of shorter maturity UST have risen much faster than
17 rates on 30-year UST. Ratepayers get a relatively better deal in the issuance
18 of 30-year or longer utility bonds, provided there is good utility purpose for
19 that maturity.
20 **Q. Does Staff's analysis alone on this topic capture all Parties'**
21 **perspectives leading to the recommended 5.140 percent Cost of LT**
22 **Debt?**

1 A. No. However, Staff's work shows that due diligence and careful analysis was
2 applied and that differences were narrow and able to be bridged among
3 Parties. Essentially, the differences were within the bounds of uncertainty
4 around each party's position such that the compromise value was not
5 unreasonable for any Party.
6 **Q. Are these findings On Cost of LT Debt consistent with the Company's**
7 **response to DRs and with S&P, Moody's Bloomberg and other**
8 **resources brought to bear?**
9 A. Yes, the 5.140 percent Cost of LT Debt recommended by Staff and all Other
10 Parties is consistent both with the Company's response to DRs and the
11 Company request, as well as with Staff's usual methodologies and
12 calculations.
13 **Q. What is Staff's recommendation in this testimony for Cost of LT**
14 **Debt?**
15 A. Staff accepts that in this instance a small compromise is consistent with
16 divergent perspectives that for portions of this year each dominated UST
17 yields and spreads for like rated utilities there over. Staff recommends that
18 the Commission adopt a 5.140 percent Cost of LT Debt.

19 **CONCLUSION**

20 **Q. What is Staff's recommendation regarding Capital Structure?**
21 A. Staff recommends a 50.0 percent Equity and 50.0 percent LT Debt Capital
22 Structure, reflecting best available information at this time and the

1 considerations earlier articulated.[31]

2 **Q. What is Staff's recommendation regarding ROE?**

3 A. Staff recommend that the Commission adopt a point ROE of 9.40 percent
4 consistent both with the findings herein and with national trends.

5 **Q. What is Staff's recommendation regarding LT Debt?**

6 A. Staff recommends a Cost of LT Debt of 5.140 percent, which is beneficial to
7 customers and a reasonable compromise between perspectives on forward
8 markets.

9 **Q. What Rate of Return (ROR) is generated by the above**
10 **recommendations?**

11 A. Staff's recommendations generate a 7.270 percent Rate of Return.

12 **Q. Does that conclude your testimony?**

13 A. Yes.

[31] This capital structure is consistent with Figure 16-1 of Chapter 16, Relationship between Capital Structure and the Cost of Capital, in the earlier mentioned text, "New Regulatory Finance" by Dr. Roger A Morin, Ph.D., when a finance practitioner seeks to balance minimization of the Cost of Capital against credit and liquidity cost and risk.

CASE: UG 347
WITNESS: MATT MULDOON

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 1301

Witness Qualification Statement

January 30, 2019

WITNESS QUALIFICATION STATEMENT

NAME: Matthew J. Muldoon

EMPLOYER: PUBLIC UTIILTY COMMISSION OF OREGON

TITLE: Senior Economist
Energy – Rates Finance and Audit Division

ADDRESS: 201 High Street SE, Suite 100
Salem, OR 97301

EDUCATION: In 1981, I received a Bachelor of Arts Degree in Political Science from the University of Chicago. In 2007, I received a Masters of Business Administration from Portland State University with a certificate in Finance.

EXPERIENCE: From April of 2008 to the present, I have been employed by the OPUC. My current responsibilities include financial and rate analysis with an emphasis on Cost of Capital. I have worked on Cost of Capital in the following general rate case dockets: AVA UG 186; UG 201, UG 246, UG 284, UG 288, UG 325, and UG 344 current; NWN UG 221, and UG 344; PAC UE 246, and UE 263; PGE UE 262, UE 283, UE 294, and UE 335; and CNG UG 287 and UG 305.

From 2002 to 2008 I was Executive Director of the Acceleration Transportation Rate Bureau, Inc. where I developed new rate structures for surface transportation and created metrics to insure program success within regulated processes.

I was the Vice President of Operations for Willamette Traffic Bureau, Inc. from 1993 to 2002. There I managed tariff rate compilation and analysis. I also developed new information systems and did sensitivity analysis for rate modeling.

OTHER: I have prepared, and defended formal testimony in contested hearings before the OPUC, ICC, STB, WUTC and ODOT. I have also prepared OPUC Staff testimony in BPA rate cases.

Abbreviations: AVA – Avista Corp., CNG – Cascade Natural Gas Company, IPC – Idaho Power Company, NWN – Northwest Natural Gas Company, PAC – PacifiCorp, PGE – Portland General Electric Company

CASE: UG 347
WITNESS: JEFFREY WATSON

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 1302

Witness Qualification Statement

January 30, 2019

WITNESS QUALIFICATION STATEMENT

NAME:	Jeffrey Watson
EMPLOYER:	Public Utility Commission of Oregon (Commission)
TITLE:	Consumer Specialist, Consumer Services; Analyst, E-RFA
ADDRESS:	201 High Street SE, Suite 100, Salem, OR 97301
EDUCATION:	Bachelor of Science, Economics Oregon State University, Corvallis, OR Associate of Arts Chemeketa Community College, Salem, OR
EXPERIENCE:	I have been employed by the Commission since January of 2016 as a Consumer Specialist in the Consumer Services Division (Consumer Services), and as an analyst in the Energy Rates, Finance and Audit (E-RFA) Division. For Consumer Services, I investigate and resolve customer claims of inappropriate action by regulated utilities and other service providers. For E-RFA, I support audits and Cost of Capital modeling. My analysis also covers a variety of other financial and general rate case topics as reflected in the current general rate cases of Northwest Natural Gas Company (NWN UG 344), Portland General Electric Company (PGE UE 335) and Cascade Natural Gas Corporation (CNG UG 347).

Prior to my work at the Commission, I was employed by T-Mobile for six years. First I developed and led continuing education courses, both as a trainer and subject matter expert for 600+ representatives and leaders on customer service and sales operations topics.

Next at T-Mobile, I managed a specialized team of customer service representatives to resolve escalated, executive level, and outside-of-policy customer issues. I reviewed call center operations and developed policies based on my analysis of the issues tracked by my team. I presented and defended my analysis and recommendations to site and regional leadership. My recommendations set performance goals to confirm successful resolution of issues and ensured ongoing service quality.

CASE: UG 347
WITNESSES: MATT MULDOON
JEFFREY WATSON

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 1303

Staff Peer Screening

Exhibits in Furtherance of Testimony in Support of Stipulation

January 30, 2019

STAFF EXHIBIT 1303

PROVIDED IN ELECTRONIC FORMAT ONLY

CASE: UG 347
WITNESSES: MATT MULDOON
JEFFREY WATSON

PUBLIC UTILITY COMMISSION OF OREGON

STAFF EXHIBIT 1304

Staff Three-Stage DCF Modeling

Exhibits in Furtherance of Testimony in Support of Stipulation

January 30, 2019

STAFF EXHIBIT 1304

PROVIDED IN ELECTRONIC FORMAT ONLY

Acronyms and Abbreviations Used

CIK	SEC Central Index Key
EDGAR	SEC Electronic Data Gathering, Analysis and Retrieval System
EEI	Edison Electric Institute
EIN	IRS Employer Identification Number
IRS	U.S. Internal Revenue Service
SEC	U.S. Securities and Exchange Commission
SIC	Standard Industrial Code
SNL	SNL Financial, LC – A financial Information gathering firm
U.S.	United States of America
VL	Value Line Investment Survey, The

Moody's		S&P		Fitch		DBRS		
Long-term	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	Short-term	
Aaa	P-1	AAA	A-1+	AAA	F1+	AAA	R-1H	High Grade
Aa1		AA+		AA+		AA(high)		High grade
Aa2		AA		AA		AA	R-1M	
Aa3		AA-		AA-		AA(low)		
A1		A+	A-1	A+	F1	A(high)	R-1L	Upper medium grade
A2		A		A		A		
A3	P-2	A-	A-2	A-	F2	A(low)		
Baa1		BBB+		BBB+		BBB(high)	R-2H	Lower medium grade
Baa2	P-3	BBB	A-3	BBB	F3	BBB	R-2M	
Baa3		BBB-		BBB-		BBB(low)	R-2L, R-3	
Ba1	Not prime	BB+	B	BB+	B	BB(high)	R-4	Non-investment grade speculative
Ba2		BB		BB		BB		
Ba3		BB-		BB-		BB(low)		
B1		B+		B+		B(high)		Highly speculative
B2		B		B		B	R-5	
B3		B-		B-		B(low)		
Caa1		CCC+				CCC(high)		Substantial risks
Caa2		CCC				CCC		
Caa3		CCC-				CCC(low)		
						CC(high)		
		CC	C	CCC	C	CC		

Source: http://en.wikipedia.org/wiki/Credit_rating

Cascade
Peer Screen

Natural Gas
CNG UG 347

Screen:	1	VL Gas Utilities passing Staff Peer Screen	80% Mid Cap
Sensitivities:	2	VL Gas Utilities passing Control. Screen	
	3	VL Gas Utilities " Co. " w/o M&A	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
		Gas Group															Either / Or		
#	Abbreviated Utility	UG 347 Control Group	UG 347 Staff	VL Corporate Name Gas Utility	Ticker	VL Cap Small Mid Large	S&P Global Market Intelligence MI Key	SPCIQ Key	IRS EIN	SEC File	VL 7/28/2018 Beta	Yahoo Fin. 7/28/2018 Beta	Yahoo Fin. 7/28/2018 Mkt Cap $ Billions	VL 7/28/2018 Mkt Cap $ Billions	Value Line N-Gas Utility w VL Beta < 1 7/28/2018	SNL or VL No Div Declines 5 years	S&P Local LT 7/28/2018 Rating ≥ BBB-	Moody's Local LT 7/28/2018 Rating ≥ Baa3	Last 10-K Highly Regulated LDC Revenue
1	Atmos	Yes	Yes	Atmos Energy Corporation	ATO	L	4057157	252684	75-1743247	1-10042	0.70	-0.01	9.16	9.50	Yes	Pass	A	A2	R
2	Chesapeake	Yes	No	Chesapeake Utilities Corporation	CPK	M	4057113	260346	51-0064146	1-11590	0.70	-0.55	1.13	1.30	Yes	Pass	A-	N/A	M
3	New Jersey	Yes	No	New Jersey Resources Corporation	NJR	M	4057128	291335	22-2376465	1-08359	0.80	0.07	3.47	3.80	Yes	Pass	A	Aa2	M
4	NiSource	No	No	NiSource Inc.	NI	L	4057051	292092	35-1719974	1-09779	0.80	0.09	7.96	9.10	Yes	Pass	BBB+	Baa2	Fail
5	Northwest Natural	Yes	Yes	Northwest Natural Gas Company	NWN	M	4057132	292047	93-0256722	1-15973	0.70	0.09	1.62	1.90	Yes	Pass	A+	A3	R
6	ONE Gas	Yes	Yes	ONE Gas, Inc.	OGS	M	4427129	243685856	46-3561936	1-36108	0.70	-0.06	4.00	3.51	Yes	Pass	A	A2	R
7	South Jersey	Yes	No	South Jersey Industries, Inc.	SJI	M	4057145	303963	22-1901645	1-06364	0.85	0.25	2.15	2.60	Yes	Pass	BBB+	A2	M
8	Southwest Gas	Yes	Yes	Southwest Gas Holdings, Inc.	SWX	M	4884928	304227	81-3881866	1-37976	0.80	0.10	3.30	3.90	Yes	Pass	BBB+	A3	R
9	Spire	Yes	Yes	Spire, Inc. (Formerly: The Laclede Group, Inc.)	SR	M	4002506	284847	74-2976504	1-16681	0.70	-0.06	3.30	3.80	Yes	Pass	A-	Baa2	R
10	UGI	No	No	UGI Corporation (Propane Focus / VL)	UGI	L	4057537	190756	23-2668356	1-11071	0.90	0.40	7.64	8.30	Propane	Pass	Fail	W	Fail
11	WGL	Yes	No	WGL Holdings, Inc.	WGL	M	4007261	313220	52-2210912	1-16163	0.80	0.28	4.276	4.30	Yes	Pass	A	A3	R
	TOTAL PEERS	9 all	5																
		6 w/o M&A	80% Mid Cap																

When Value Line (VL) Beta ratio exceeds 99.9 or earnings are negative, Vl shows "NMF" for 'no meaningful figure'.

R 80% or more of assets are regulated
M 50% - 79% of assets are regulated
W Ratings Withdrawn

Cascade
Peer Screen

Natural Gas

CNG UG 347

Screen:	1
Sensitivities:	2
	3

1	2	3	4	21	22	23	24	25	26	27	28
		Gas Group		VL 2018 LT Debt < 56% of Capital	VL 2020-2022 LT Debt % of Capital	VL 2018 Common Equity % of Capital	VL Preferred Stock of Capital	VL Div. Growth Rate > 0%	Major M&A in Last 4 Years	M&A Activity and General Notes re: Last 4 Years	
#	Abbreviated Utility	UG 347 Control Group	UG 347 Staff								#
1	Atmos	Yes	Yes	44.0%	45.0%	56.0%	0.0%	Pass	Pass	Completed Sale Atmos Marketing to CenterPoint Energy Jan. 4, 2017 leaving Atmos Energy 100% Regulated.	1
2	Chesapeake	Yes	No	30.0%	30.0%	70.0%	0.0%	Pass	Pass	VL indicates this utility is 40% unregulated energy operations.	2
3	New Jersey	Yes	No	45.5%	43.0%	54.5%	0.0%	Pass	Fail	New Jersey Resources / South Jersey Industries Proposed Merger Announced Apr 4, 2017	3
4	NiSource	No	No	61.0%	63.0%	39.0%	0.0%	Fail	Pass	$1.8 B infrastrucutre spend planned for 2018 / VL	4
5	Northwest Natural	Yes	Yes	45.0%	45.5%	55.0%	0.0%	Pass	Pass	HoldCo Formation - Purchase of Salmon Valley Water OR & Falls Water ID pending.	5
6	ONE Gas	Yes	Yes	38.0%	38.0%	62.0%	0.0%	Pass	Pass	ONE Gas, Inc was created in 2014 as a spinoff of ONEOK's natural gas distribution operations.	6
7	South Jersey	Yes	No	47.5%	46.0%	52.5%	0.0%	Pass	Fail	Purchasing Elizabethtown Gas and Elkton Gas from Southern Company for $1.7 B - NJR/SJI Merger	7
8	Southwest Gas	Yes	Yes	48.0%	44.5%	52.0%	0.0%	Pass	Pass	Reorganized under holding company.	8
9	Spire	Yes	Yes	49.5%	49.0%	50.5%	0.0%	Pass	Pass	About $0.5B STL Pipeline spend.	9
10	UGI	No	No	55.5%	51.0%	44.5%	0.0%	Pass	Pass	Very Heavy Propane Position	10
11	WGL	Yes	No	46.0%	44.0%	53.0%	1.0%	Pass	Fail	Canada's AltaGas announced its intent to buy WGL as of Jan 12, 2017	11
	TOTAL PEERS	9 all 6 w/o M&A	5 80% Mid Cap								

CNG - Gas Peer Dividends

UG 347

Value Line Dividends

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
	#	Abbreviated Utility	UG 347 Control Group	UG 347 Staff	Ticker	2014 Q1	2014 Q2	2014 Q3	2014 Q4	2014 Yr	2015 Q1	2015 Q2	2015 Q3	2015 Q4	2015 Yr	2016 Q1	2016 Q2	2016 Q3	2016 Q4	2016 Yr	2014-16 Average	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 Yr
1	1	Atmos	Yes	Yes	ATO	0.37	0.37	0.37	0.39	1.50	0.39	0.39	0.39	0.42	1.59	0.42	0.42	0.42	0.45	1.71	1.60	0.45	0.45	0.45	0.485	1.84
2	2	Chesapeake	Yes	No	CPK	0.257	0.257	0.27	0.27	1.05	0.27	0.27	0.288	0.288	1.12	0.288	0.288	0.305	0.305	1.19	1.12	0.305	0.305	0.325	0.325	1.26
3	3	New Jersey	Yes	No	NJR	0.21	0.21	0.21	0.23	0.86	0.23	0.23	0.23	0.24	0.93	0.24	0.24	0.24	0.255	0.98	0.92	0.255	0.255	0.255	0.273	1.04
4	5	Northwest Natural	Yes	Yes	NWN	0.46	0.46	0.46	0.465	1.85	0.465	0.465	0.465	0.4675	1.86	0.4675	0.4675	0.4675	0.47	1.87	1.86	0.47	0.47	0.47	0.4725	1.88
5	6	ONE Gas	Yes	Yes	OGS	0.00	0.28	0.28	0.28	0.84	0.30	0.30	0.30	0.30	1.20	0.35	0.35	0.35	0.35	1.40	1.15	0.42	0.42	0.42	0.42	1.68
6	7	South Jersey	Yes	No	SJI	0.00	0.237	0.237	0.488	0.96	0.00	0.251	0.251	0.515	1.02	0.00	0.264	0.264	0.536	1.06	1.01	0.00	0.273	0.273	0.553	1.10
7	8	Southwest Gas	Yes	Yes	SWX	0.33	0.365	0.365	0.365	1.43	0.365	0.405	0.405	0.405	1.58	0.405	0.45	0.45	0.45	1.76	1.59	0.45	0.495	0.495	0.495	1.94
8	9	Spire	Yes	Yes	SR	0.44	0.44	0.44	0.44	1.76	0.46	0.46	0.46	0.46	1.84	0.49	0.49	0.49	0.49	1.96	1.85	0.525	0.525	0.525	0.525	2.10
9	11	WGL	Yes	No	WGL	0.42	0.44	0.44	0.44	1.74	0.44	0.463	0.463	0.463	1.83	0.463	0.488	0.488	0.488	1.93	1.83	0.488	0.51	0.51	0.51	2.02
		TOTAL PEERS	9 all	5																						
			6 w/o M&A	80% Mid Cap																						

CNG- Gas Peer EPS

Value Line Earnings per Share (EPS)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
	#	Abbreviated Utility	UG 347 Control Group	UG 347 Staff	Ticker	2014 Q1	2014 Q2	2014 Q3	2014 Q4	2014 Yr	2015 Q1	2015 Q2	2015 Q3	2015 Q4	2015 Yr	2016 Q1	2016 Q2	2016 Q3	2016 Q4	2016 Yr	2014-16 Average	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 Yr
1	1	Atmos	Yes	Yes	ATO	0.95	1.38	0.45	0.23	3.01	0.96	1.35	0.55	0.23	3.09	1.00	1.38	0.69	0.33	3.40	3.17	1.08	1.52	0.67	0.34	3.61
2	2	Chesapeake	Yes	No	CPK	1.21	0.35	0.22	0.69	2.47	1.44	0.35	0.33	0.56	2.68	1.33	0.52	0.29	0.73	2.87	2.67	1.17	0.37	0.42	0.69	2.65
3	3	New Jersey	Yes	No	NJR	0.47	1.79	0.05	(0.23)	2.08	0.65	1.16	0.03	(0.06)	1.78	0.58	0.91	0.13	(0.02)	1.60	1.82	0.47	1.21	0.20	(0.14)	1.74
4	5	Northwest Natural	Yes	Yes	NWN	1.40	0.04	(0.32)	1.04	2.16	1.04	0.08	(0.24)	1.08	1.96	1.33	0.07	(0.29)	1.00	2.11	2.08	1.40	0.10	(0.30)	1.05	2.25
5	6	ONE Gas	Yes	Yes	OGS	1.13	0.18	0.09	0.67	2.07	1.13	0.23	0.14	0.74	2.24	1.22	0.38	0.25	0.80	2.65	2.32	1.34	0.39	0.36	0.86	2.95
6	7	South Jersey	Yes	No	SJI	1.01	0.15	(0.05)	0.47	1.58	0.86	0.03	(0.07)	0.62	1.44	0.75	0.12	0.05	0.42	1.34	1.45	0.72	0.06	(0.05)	0.42	1.15
7	8	Southwest Gas	Yes	Yes	SWX	1.51	0.21	0.04	1.25	3.01	1.53	0.10	(0.10)	1.38	2.91	1.58	0.19	0.05	1.36	3.18	3.03	1.45	0.37	0.21	1.52	3.55
8	9	Spire	Yes	Yes	SR	1.09	1.59	0.33	(0.35)	2.66	1.09	2.18	0.32	(0.43)	3.16	0.99	2.36	0.45	(0.28)	3.52	3.11	1.10	2.55	0.40	(0.25)	3.80
9	11	WGL	Yes	No	WGL	0.99	1.84	0.02	(0.17)	2.68	1.16	2.02	0.22	(0.23)	3.17	1.18	1.78	0.33	(0.01)	3.28	3.04	1.15	1.87	0.26	(0.17)	3.11
		TOTAL PEERS	9 all	5																						
			6 w/o M&A	80% Mid Cap																						

Historical and Near Term VL Dividends, and VL Earnings per Share

CNG - Gas Peer Dividends

	1	2	3	4	5	27	28	29	30	31	32	33	34	
		UG 347				Value Line Estimated Near Future Dividends					VL Avg.	Div Growth		
	#	Abbreviated Utility	UG 347 Control Group	UG 347 Staff	Ticker	2018 Yr	2019 Yr	2020 Yr	2021 Yr	2022 Yr	2020 - 22 / Yr	2020-22 vs. 2014-16	#	
1	1	Atmos	Yes	Yes	ATO	1.94	2.05	2.17	2.30	2.43	2.30	6.2%	1	1
2	2	Chesapeake	Yes	No	CPK	1.33	1.40	1.47	1.55	1.63	1.55	5.6%	2	2
3	3	New Jersey	Yes	No	NJR	1.09	1.10	1.11	1.12	1.13	1.12	3.3%	3	3
4	5	Northwest Natural	Yes	Yes	NWN	1.89	1.93	1.96	2.00	2.04	2.00	1.2%	5	4
5	6	ONE Gas	Yes	Yes	OGS	1.88	2.05	2.24	2.45	2.66	2.45	13.5%	6	5
6	7	South Jersey	Yes	No	SJI	1.15	1.20	1.25	1.30	1.35	1.30	4.2%	7	6
7	8	Southwest Gas	Yes	Yes	SWX	2.08	2.21	2.35	2.50	2.65	2.50	7.9%	8	7
8	9	Spire	Yes	Yes	SR	2.25	2.33	2.41	2.50	2.59	2.50	5.1%	9	8
9	11	WGL	Yes	No	WGL	2.08	2.12	2.16	2.20	2.24	2.20	3.1%	11	9
		TOTAL PEERS	9 all	5						Staff Gas Screen		6.8%	Mean	
			6 w/o M&A	80% Mid Cap						Company Peer Screen		5.6%		
										Company Peer Screen - w/o M&A		6.6%		

CNG- Gas Peer EPS

	1	2	3	4	5	27	28	29	30	31	32	33	34	35	36	37	38	
						Value Line Estimated Near Future Earnings per Share in Blue									VL Avg	EPS Growth VL Avg		
	#	Abbreviated Utility	UG 347 Control Group	UG 347 Staff	Ticker	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2018 Yr	2019 Yr	2020 Yr	2021 Yr	2022 Yr	2020- 22 / Yr	2020-22 vs. 2014-16	#	
1	1	Atmos	Yes	Yes	ATO	1.15	1.51	0.75	0.39	3.80	4.02	4.25	4.50	4.75	4.50	6.0%	1	1
2	2	Chesapeake	Yes	No	CPK	1.37	0.44	0.42	0.72	2.95	3.32	3.73	4.20	4.67	4.20	7.8%	2	2
3	3	New Jersey	Yes	No	NJR	0.51	1.25	0.24	(0.10)	1.90	1.95	2.00	2.05	2.10	2.05	2.0%	3	3
4	5	Northwest Natural	Yes	Yes	NWN	1.45	0.10	(0.25)	1.15	2.45	2.66	2.90	3.15	3.40	3.15	7.2%	5	4
5	6	ONE Gas	Yes	Yes	OGS	1.42	0.48	0.41	0.94	3.25	3.48	3.73	4.00	4.27	4.00	9.5%	6	5
6	7	South Jersey	Yes	No	SJI	0.78	0.10	0.03	0.54	1.45	1.61	1.80	2.00	2.20	2.00	5.5%	7	6
7	8	Southwest Gas	Yes	Yes	SWX	1.52	0.40	0.20	1.58	3.70	4.04	4.40	4.80	5.20	4.80	7.9%	8	7
8	9	Spire	Yes	Yes	SR	0.82	0.12	0.00	0.56	1.50	2.19	3.19	4.65	6.11	4.65	6.9%	9	8
9	11	WGL	Yes	No	WGL	1.25	1.95	0.40	(0.10)	3.50	3.48	3.47	3.45	3.43	3.45	2.1%	11	9
		TOTAL PEERS	9 all	5											Staff Gas Screen	7.5%	Mean	
			6 w/o M&A	80% Mid Cap											Company Peer Screen	6.1%		
															Company Peer Screen - w/o M&A	7.6%		

CNG GRC
UG 347 Staff Hamada Adjustments

* Tax Cut and Jobs Act Impact

	1	2	3	4	5	6	7	8	9	10	11	#	13	14	15	16	17	18	#	20	21	22	
						Yahoo Finance $ Stock Closing Price 1st Trading Day of Month							VL 2018 Cap Structure			*							
	#	Abbreviated Utility	UG 347 Control Group	UG 347 Staff	Ticker	Apr. 4/1/2018	May. 5/1/2018	Jun. 6/1/2018	*3-Day Avg $ Stock Price*	*Div Yield at Recent Price*	*VL 2018 Return on Common Equity*		% Long Term Debt	% Common Equity	VL Beta	2018 21% Tax Rate	Hamada Unlevered Beta	*Relevered Beta Equity at 50.0%*		Equity Risk Premium	*Hamada Adjustment Equity At 50.0%*	#	
1	1	Atmos	Yes	Yes	ATO	86.89	89.21	90.88	88.99	2.1%	10.5%		44.0	56.0	0.70	21.0%	0.43	0.77		4.20%	0.31%	1	1
2	2	Chesapeake	Yes	No	CPK	76.00	79.85	79.95	78.60	1.6%	9.5%		30.0	70.0	0.70	21.0%	0.52	0.94		4.20%	0.99%	2	2
3	3	New Jersey	Yes	No	NJR	41.35	44.40	44.75	43.50	2.4%	12.5%		45.5	54.5	0.80	21.0%	0.48	0.86		4.20%	0.26%	3	3
4	5	Northwest Natural	Yes	Yes	NWN	61.30	59.80	63.80	61.63	3.1%	8.0%		45.0	55.0	0.70	21.0%	0.43	0.76		4.20%	0.26%	4	4
5	6	ONE Gas	Yes	Yes	OGS	69.72	75.05	74.74	73.17	2.3%	8.5%		38.0	62.0	0.70	21.0%	0.47	0.84		4.20%	0.61%	5	5
6	7	South Jersey	Yes	No	SJI	30.90	33.12	33.47	32.50	3.4%	8.5%		47.5	52.5	0.85	21.0%	0.50	0.89		4.20%	0.16%	6	6
7	8	Southwest Gas	Yes	Yes	SWX	72.99	75.70	76.27	74.99	2.6%	9.5%		48.0	52.0	0.80	21.0%	0.46	0.83		4.20%	0.12%	7	7
8	9	Spire	Yes	Yes	SR	72.15	71.25	70.65	71.35	2.9%	8.5%		49.5	50.5	0.70	21.0%	0.39	0.71		4.20%	0.03%	8	8
9	11	WGL	Yes	No	WGL	85.10	88.20	88.75	87.35	2.3%	11.0%		46.0	54.0	0.80	21.0%	0.48	0.86		4.20%	0.24%	9	9
		TOTAL PEERS	9 all	5																Staff Gas Screen	0.26%	Mean	
			6 w/o M&A	80% Mid Cap																Company Peer Screen	0.33%		
																				Company Peer Screen - w/o M&A	0.38%		

Dividend Yield = (Annual Dividends per Share) / Price per Share

When Value Line (VL) Beta ratio exceeds 99.9 or earnings are negative, Vl shows "NMF" for 'no meaningful figure'.

4.52% Annual Growth Rate - Stage 3

Dividend Growth with Terminal Value as Perpetuity

E.O.Y. Cash Flows   Staff   UG 347   Model   X

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
									Initial Stage					Transition Stage					Final Stage																							
	#	Abbreviated Utility	UG 347 Control Group	UG 347 Staff	IRR	Terminal Value as % of NPV_{DIV}	NPV @ IRR	Recent Price*	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2046 Terminal Value	2047 Div	2047 Perpetuity	#	
1	1	Atmos	Yes	Yes	7.0%	51.8%	0.00	(88.99)	1.94	2.05	2.17	2.30	2.43	2.58	2.75	2.92	3.10	3.29	3.44	3.60	3.76	3.93	4.11	4.29	4.49	4.69	4.90	5.12	5.35	5.60	5.85	6.11	6.39	6.68	6.98	7.29	7.62	348.02	7.97	340.05	1	1
2	2	Chesapeake	Yes	No	6.3%	61.0%	0.00	(78.60)	1.33	1.40	1.47	1.55	1.63	1.72	1.82	1.92	2.03	2.14	2.24	2.34	2.45	2.56	2.67	2.79	2.92	3.05	3.19	3.33	3.48	3.64	3.81	3.98	4.16	4.34	4.54	4.75	4.96	303.30	5.19	298.12	2	2
3	3	New Jersey	Yes	No	6.6%	55.4%	0.00	(43.50)	1.09	1.10	1.11	1.12	1.13	1.17	1.21	1.25	1.29	1.33	1.40	1.46	1.52	1.59	1.66	1.74	1.82	1.90	1.99	2.08	2.17	2.27	2.37	2.48	2.59	2.71	2.83	2.96	3.09	164.71	3.23	161.48	3	3
4	5	Northwest Natural	Yes	Yes	7.0%	49.6%	0.00	(61.63)	1.89	1.93	1.96	2.00	2.04	2.06	2.09	2.12	2.14	2.17	2.27	2.37	2.48	2.59	2.71	2.83	2.96	3.09	3.23	3.38	3.53	3.69	3.85	4.03	4.21	4.40	4.60	4.81	5.02	230.17	5.25	224.92	5	4
5	6	ONE Gas	Yes	Yes	8.6%	35.7%	0.00	(73.17)	1.88	2.05	2.24	2.45	2.66	3.02	3.43	3.88	4.37	4.91	5.13	5.37	5.61	5.86	6.13	6.40	6.69	7.00	7.31	7.64	7.99	8.35	8.73	9.12	9.53	9.96	10.41	10.88	11.38	313.78	11.89	301.89	6	5
6	7	South Jersey	Yes	No	8.0%	38.7%	0.00	(32.50)	1.15	1.20	1.25	1.30	1.35	1.41	1.47	1.54	1.60	1.67	1.74	1.82	1.91	1.99	2.08	2.18	2.27	2.38	2.48	2.60	2.71	2.84	2.97	3.10	3.24	3.39	3.54	3.70	3.87	126.03	4.04	121.99	7	6
7	8	Southwest Gas	Yes	Yes	7.9%	41.4%	0.00	(74.99)	2.08	2.21	2.35	2.50	2.65	2.86	3.09	3.33	3.59	3.87	4.04	4.22	4.42	4.62	4.82	5.04	5.27	5.51	5.76	6.02	6.29	6.57	6.87	7.18	7.51	7.85	8.20	8.57	8.96	301.37	9.36	292.01	8	7
8	9	Spire	Yes	Yes	7.6%	42.7%	0.00	(71.35)	2.25	2.33	2.41	2.50	2.59	2.72	2.87	3.01	3.17	3.33	3.48	3.64	3.80	3.97	4.15	4.34	4.54	4.74	4.96	5.18	5.42	5.66	5.92	6.18	6.46	6.76	7.06	7.38	7.71	277.66	8.06	269.60	9	8
9	11	WGL	Yes	No	6.6%	56.3%	(0.00)	(87.35)	2.08	2.12	2.16	2.20	2.24	2.31	2.39	2.46	2.54	2.62	2.74	2.86	2.99	3.13	3.27	3.42	3.57	3.73	3.90	4.08	4.26	4.45	4.66	4.87	5.09	5.32	5.56	5.81	6.07	330.89	6.34	324.54	11	9
		TOTAL PEERS	9 all	5	Mean																																					
			6 w/o M&A	80% Mid Cap	7.38%	44.23%	0.00	Staff Gas Screen																																		
					7.29%	48.07%	0.00	Company Peer Screen																																		
					7.40%	47.03%	0.00	Company Peer Screen - w/o M&A																																		

B.O.Y. Cash Flows   Staff   UG 347   Model   X

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
									Initial Stage					Transition Stage					Final Stage																							
	#	Abbreviated Utility	UG 347 Control Group	UG 347 Staff	IRR	Terminal Value as % of NPV_{DIV}	NPV @ IRR	Recent Price*	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2046 Terminal Value	2047 Div	2047 Perpetuity	#	
1	1	Atmos	Yes	Yes	7.1%	50.1%	0.00	(88.99)	2.05	2.17	2.30	2.43	2.58	2.75	2.92	3.10	3.29	3.44	3.60	3.76	3.93	4.11	4.29	4.49	4.69	4.90	5.12	5.35	5.60	5.85	6.11	6.39	6.68	6.98	7.29	7.62	7.97	347.68	8.33	339.36	1	1
2	2	Chesapeake	Yes	No	6.4%	59.6%	0.00	(78.60)	1.40	1.47	1.55	1.63	1.72	1.82	1.92	2.03	2.14	2.24	2.34	2.45	2.56	2.67	2.79	2.92	3.05	3.19	3.33	3.48	3.64	3.81	3.98	4.16	4.34	4.54	4.75	4.96	5.19	303.25	5.42	297.83	2	2
3	3	New Jersey	Yes	No	6.7%	54.3%	(0.00)	(43.50)	1.10	1.11	1.12	1.13	1.17	1.21	1.25	1.29	1.33	1.40	1.46	1.52	1.59	1.66	1.74	1.82	1.90	1.99	2.08	2.17	2.27	2.37	2.48	2.59	2.71	2.83	2.96	3.09	3.23	165.42	3.38	162.04	3	3
4	5	Northwest Natural	Yes	Yes	7.1%	48.5%	0.00	(61.63)	1.93	1.96	2.00	2.04	2.06	2.09	2.12	2.14	2.17	2.27	2.37	2.48	2.59	2.71	2.83	2.96	3.09	3.23	3.38	3.53	3.69	3.85	4.03	4.21	4.40	4.60	4.81	5.02	5.25	231.55	5.49	226.06	5	4
5	6	ONE Gas	Yes	Yes	8.9%	33.2%	0.00	(73.17)	2.05	2.24	2.45	2.66	3.02	3.43	3.88	4.37	4.91	5.13	5.37	5.61	5.86	6.13	6.40	6.69	7.00	7.31	7.64	7.99	8.35	8.73	9.12	9.53	9.96	10.41	10.88	11.38	11.89	311.08	12.43	298.65	6	5
6	7	South Jersey	Yes	No	8.1%	37.2%	(0.00)	(32.50)	1.20	1.25	1.30	1.35	1.41	1.47	1.54	1.60	1.67	1.74	1.82	1.91	1.99	2.08	2.18	2.27	2.38	2.48	2.60	2.71	2.84	2.97	3.10	3.24	3.39	3.54	3.70	3.87	4.04	126.29	4.22	122.07	7	6
7	8	Southwest Gas	Yes	Yes	8.0%	39.4%	0.00	(74.99)	2.21	2.35	2.50	2.65	2.86	3.09	3.33	3.59	3.87	4.04	4.22	4.42	4.62	4.82	5.04	5.27	5.51	5.76	6.02	6.29	6.57	6.87	7.18	7.51	7.85	8.20	8.57	8.96	9.36	300.55	9.79	290.77	8	7
8	9	Spire	Yes	Yes	7.8%	41.1%	0.00	(71.35)	2.33	2.41	2.50	2.59	2.72	2.87	3.01	3.17	3.33	3.48	3.64	3.80	3.97	4.15	4.34	4.54	4.74	4.96	5.18	5.42	5.66	5.92	6.18	6.46	6.76	7.06	7.38	7.71	8.06	278.13	8.43	269.70	9	8
9	11	WGL	Yes	No	6.6%	55.1%	(0.00)	(87.35)	2.12	2.16	2.20	2.24	2.31	2.39	2.46	2.54	2.62	2.74	2.86	2.99	3.13	3.27	3.42	3.57	3.73	3.90	4.08	4.26	4.45	4.66	4.87	5.09	5.32	5.56	5.81	6.07	6.34	332.10	6.63	325.47	11	9
		TOTAL PEERS	9 all	5	Mean																																					
			6 w/o M&A	80% Mid Cap	7.77%	42.47%	0.00	Staff Gas Screen																																		
					7.42%	46.51%	(0.00)	Company Peer Screen																																		
					7.54%	45.33%	0.00	Company Peer Screen - w/o M&A																																		

Average B.O.Y. & E.O.Y. Cash Flows   Model   X

	1	2	3	4	5	6	7	8	9		
							Average 2016 - 2020 Dividend Growth Rates				
	#	Abbreviated Utility	UG 347 Control Group	UG 347 Staff	Average IRR	Terminal Value as % of NPV_{DIV}	EOY	BOY	Average	#	
1	1	Atmos	Yes	Yes	7.0%	51.0%	5.8%	5.9%	5.8%	1	1
2	2	Chesapeake	Yes	No	6.4%	60.3%	5.2%	5.3%	5.2%	2	2
3	3	New Jersey	Yes	No	6.7%	54.9%	0.9%	1.5%	1.2%	3	3
4	5	Northwest Natural	Yes	Yes	7.0%	49.1%	1.9%	1.7%	1.8%	5	4
5	6	ONE Gas	Yes	Yes	8.8%	34.5%	9.0%	10.1%	9.6%	6	5
6	7	South Jersey	Yes	No	8.1%	37.9%	4.1%	4.2%	4.2%	7	6
7	8	Southwest Gas	Yes	Yes	8.0%	40.4%	6.2%	6.7%	6.4%	8	7
8	9	Spire	Yes	Yes	7.7%	41.9%	3.5%	4.0%	3.8%	9	8
9	11	WGL	Yes	No	6.6%	55.7%	1.9%	2.2%	2.0%	11	9
		TOTAL PEERS	9 all	5	Mean						
			6 w/o M&A	80% Mid Cap	7.69%	43.35%	5.5%	Staff Gas Screen			
					7.35%	47.29%	4.5%	Company Peer Screen			
					7.47%	46.18%	5.4%	Company Peer Screen - w/o M&A			

4.52% Annual Growth Rate - Stage 3

EPS Growth to Determine a Sale Terminal V EPS Growth

E.O.Y. Cash Flows

Staff UG 347 Model Y

	#	Abbreviated Utility	UG 347 Control Group	UG 347 Staff	IRR	Terminal Value as % of NPV_{DIV}	NPV @ IRR	Recent Price*	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
									Initial Stage					Transition Stage				
1	1	Atmos	Yes	Yes	7.2%	53.4%	0.00	(88.99)	1.94	2.05	2.17	2.30	2.43	2.58	2.75	2.92	3.10	3.29
				e					3.80	4.02	4.25	4.50	4.75	5.04	5.35	5.68	6.02	6.38
2	2	Chesapeake	Yes	No	7.5%	66.6%	0.00	(78.60)	1.33	1.40	1.47	1.55	1.63	1.72	1.82	1.92	2.03	2.14
				e					2.95	3.32	3.73	4.20	4.67	5.04	5.44	5.87	6.32	6.80
3	3	New Jersey	Yes	No	6.2%	52.8%	0.00	(43.50)	1.09	1.10	1.11	1.12	1.13	1.17	1.21	1.25	1.29	1.33
				e					1.90	1.95	2.00	2.05	2.10	2.15	2.19	2.23	2.28	2.33
4	5	Northwest Natural	Yes	Yes	7.7%	54.0%	0.00	(61.63)	1.89	1.93	1.96	2.00	2.04	2.06	2.09	2.12	2.14	2.17
				e					2.45	2.66	2.90	3.15	3.40	3.66	3.92	4.21	4.50	4.82
5	6	ONE Gas	Yes	Yes	9.1%	39.3%	0.00	(73.17)	1.88	2.05	2.24	2.45	2.66	3.02	3.43	3.88	4.37	4.91
				e					3.25	3.48	3.73	4.00	4.27	4.68	5.13	5.62	6.13	6.69
6	7	South Jersey	Yes	No	8.6%	43.1%	0.00	(32.50)	1.15	1.20	1.25	1.30	1.35	1.41	1.47	1.54	1.60	1.67
				e					1.45	1.61	1.80	2.00	2.20	2.33	2.46	2.59	2.74	2.88
7	8	Southwest Gas	Yes	Yes	8.5%	45.8%	0.00	(74.99)	2.08	2.21	2.35	2.50	2.65	2.86	3.09	3.33	3.59	3.87
				e					3.70	4.04	4.40	4.80	5.20	5.62	6.08	6.56	7.07	7.62
8	9	Spire	Yes	Yes	11.2%	60.9%	0.00	(71.35)	2.25	2.33	2.41	2.50	2.59	2.72	2.87	3.01	3.17	3.33
				e					1.50	2.19	3.19	4.65	6.11	6.55	7.01	7.49	8.01	8.55
9	11	WGL	Yes	No	5.8%	51.9%	0.00	(87.35)	2.08	2.12	2.16	2.20	2.24	2.31	2.39	2.46	2.54	2.62
				e					3.50	3.48	3.47	3.45	3.43	3.51	3.59	3.66	3.74	3.82
		TOTAL PEERS	9 all	5	Mean													
			6 w/o M&A	30% Mid Ca	8.75%	51.91%	0.00	Staff Gas Screen										
					7.99%	51.99%	0.00	Company Peer Screen										
					8.55%	53.34%	0.00	Company Peer Screen - w/o M&A										

	#	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2046 Terminal Value	2047 Div	2047 Sale	2048	#	
	1	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	
		Final Stage																								
1	1	3.44	3.60	3.76	3.93	4.11	4.29	4.49	4.69	4.90	5.12	5.35	5.60	5.85	6.11	6.39	6.68	6.98	7.29	7.62	385.94	7.97	377.97		1	1
		6.67	6.97	7.28	7.61	7.96	8.32	8.69	9.08	9.49	9.92	10.37	10.84	11.33	11.84	12.38	12.94	13.52	14.13	14.77		15.44		16.14		
2	2	2.24	2.34	2.45	2.56	2.67	2.79	2.92	3.05	3.19	3.33	3.48	3.64	3.81	3.98	4.16	4.34	4.54	4.75	4.96	463.50	5.19	458.32		2	2
		7.11	7.43	7.76	8.11	8.48	8.86	9.26	9.68	10.12	10.58	11.06	11.55	12.08	12.62	13.19	13.79	14.41	15.06	15.75		16.46		17.20		
3	3	1.40	1.46	1.52	1.59	1.66	1.74	1.82	1.90	1.99	2.08	2.17	2.27	2.37	2.48	2.59	2.71	2.83	2.96	3.09	138.09	3.23	134.86		3	3
		2.43	2.54	2.66	2.78	2.90	3.03	3.17	3.32	3.47	3.62	3.79	3.96	4.14	4.32	4.52	4.72	4.94	5.16	5.39		5.64		5.89		
4	5	2.27	2.37	2.48	2.59	2.71	2.83	2.96	3.09	3.23	3.38	3.53	3.69	3.85	4.03	4.21	4.40	4.60	4.81	5.02	312.08	5.25	306.83		5	4
		5.04	5.27	5.50	5.75	6.01	6.28	6.57	6.87	7.18	7.50	7.84	8.19	8.56	8.95	9.36	9.78	10.22	10.68	11.16		11.67		12.20		
5	6	5.13	5.37	5.61	5.86	6.13	6.40	6.69	7.00	7.31	7.64	7.99	8.35	8.73	9.12	9.53	9.96	10.41	10.88	11.38	393.03	11.89	381.14		6	5
		6.99	7.31	7.64	7.98	8.35	8.72	9.12	9.53	9.96	10.41	10.88	11.37	11.89	12.42	12.98	13.57	14.19	14.83	15.50		16.20		16.93		
6	7	1.74	1.82	1.91	1.99	2.08	2.18	2.27	2.38	2.48	2.60	2.71	2.84	2.97	3.10	3.24	3.39	3.54	3.70	3.87	167.61	4.04	163.56		7	6
		3.01	3.15	3.29	3.44	3.60	3.76	3.93	4.11	4.29	4.49	4.69	4.90	5.12	5.36	5.60	5.85	6.12	6.39	6.68		6.98		7.30		
7	8	4.04	4.22	4.42	4.62	4.82	5.04	5.27	5.51	5.76	6.02	6.29	6.57	6.87	7.18	7.51	7.85	8.20	8.57	8.96	399.98	9.36	390.61		8	7
		7.96	8.32	8.70	9.09	9.50	9.93	10.38	10.85	11.34	11.85	12.39	12.95	13.53	14.14	14.78	15.45	16.15	16.88	17.64		18.44		19.27		
8	9	3.48	3.64	3.80	3.97	4.15	4.34	4.54	4.74	4.96	5.18	5.42	5.66	5.92	6.18	6.46	6.76	7.06	7.38	7.71	1,036.99	8.06	1,028.93		9	8
		8.93	9.34	9.76	10.20	10.66	11.15	11.65	12.18	12.73	13.30	13.90	14.53	15.19	15.87	16.59	17.34	18.13	18.94	19.80		20.70		21.63		
9	11	2.74	2.86	2.99	3.13	3.27	3.42	3.57	3.73	3.90	4.08	4.26	4.45	4.66	4.87	5.09	5.32	5.56	5.81	6.07	247.86	6.34	241.52		11	9
		4.00	4.18	4.37	4.56	4.77	4.99	5.21	5.45	5.69	5.95	6.22	6.50	6.79	7.10	7.42	7.76	8.11	8.48	8.86		9.26		9.68		

B.O.Y. Cash Flows

Staff Model Y EPS Growth

	#	Abbreviated Utility	UG 347 Control Group	UG 347 Staff	IRR	Terminal Value as % of NPV_{DIV}	NPV @ IRR	Recent Price*	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
									Initial Stage					Transition Stage				
1	1	Atmos	Yes	Yes	7.3%	51.7%	0.00	(88.99)	2.05	2.17	2.30	2.43	2.58	2.75	2.92	3.10	3.29	3.44
				e					3.80	4.02	4.25	4.50	4.75	5.04	5.35	5.68	6.02	6.38
2	2	Chesapeake	Yes	No	7.6%	65.3%	0.00	(78.60)	1.40	1.47	1.55	1.63	1.72	1.82	1.92	2.03	2.14	2.24
				e					2.95	3.32	3.73	4.20	4.67	5.04	5.44	5.87	6.32	6.80
3	3	New Jersey	Yes	No	6.2%	51.6%	0.00	(43.50)	1.10	1.11	1.12	1.13	1.17	1.21	1.25	1.29	1.33	1.40
				e					1.90	1.95	2.00	2.05	2.10	2.15	2.19	2.23	2.28	2.33
4	5	Northwest Natural	Yes	Yes	7.8%	52.9%	0.00	(61.63)	1.93	1.96	2.00	2.04	2.06	2.09	2.12	2.14	2.17	2.27
				e					2.45	2.66	2.90	3.15	3.40	3.66	3.92	4.21	4.50	4.82
5	6	ONE Gas	Yes	Yes	9.3%	36.9%	0.00	(73.17)	2.05	2.24	2.45	2.66	3.02	3.43	3.88	4.37	4.91	5.13
				e					3.25	3.48	3.73	4.00	4.27	4.68	5.13	5.62	6.13	6.69
6	7	South Jersey	Yes	No	8.8%	41.5%	0.00	(32.50)	1.20	1.25	1.30	1.35	1.41	1.47	1.54	1.60	1.67	1.74
				e					1.45	1.61	1.80	2.00	2.20	2.33	2.46	2.59	2.74	2.88
7	8	Southwest Gas	Yes	Yes	8.7%	43.9%	0.00	(74.99)	2.21	2.35	2.50	2.65	2.86	3.09	3.33	3.59	3.87	4.04
				e					3.70	4.04	4.40	4.80	5.20	5.62	6.08	6.56	7.07	7.62
8	9	Spire	Yes	Yes	11.2%	59.5%	0.00	(71.35)	2.33	2.41	2.50	2.59	2.72	2.87	3.01	3.17	3.33	3.48
				e					1.50	2.19	3.19	4.65	6.11	6.55	7.01	7.49	8.01	8.55
9	11	WGL	Yes	No	5.9%	50.7%	0.00	(87.35)	2.12	2.16	2.20	2.24	2.31	2.39	2.46	2.54	2.62	2.74
				e					3.50	3.48	3.47	3.45	3.43	3.51	3.59	3.66	3.74	3.82
		TOTAL PEERS	9 all	5	Mean													
			6 w/o M&A	30% Mid Ca	8.89%	49.00%	0.00	Staff Gas Screen										
					8.11%	50.45%	0.00	Company Peer Screen										
					8.67%	51.71%	0.00	Company Peer Screen - w/o M&A										

	#	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2046 Terminal Value	2047 Div	2047 Sale	2048	#	
	1	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	
		Final Stage																								
1	1	3.60	3.76	3.93	4.11	4.29	4.49	4.69	4.90	5.12	5.35	5.60	5.85	6.11	6.39	6.68	6.98	7.29	7.62	7.97	386.30	8.33	377.97		1	1
		6.67	6.97	7.28	7.61	7.96	8.32	8.69	9.08	9.49	9.92	10.37	10.84	11.33	11.84	12.38	12.94	13.52	14.13	14.77		15.44		16.14		
2	2	2.34	2.45	2.56	2.67	2.79	2.92	3.05	3.19	3.33	3.48	3.64	3.81	3.98	4.16	4.34	4.54	4.75	4.96	5.19	463.73	5.42	458.32		2	2
		7.11	7.43	7.76	8.11	8.48	8.86	9.26	9.68	10.12	10.58	11.06	11.55	12.08	12.62	13.19	13.79	14.41	15.06	15.75		16.46		17.20		
3	3	1.46	1.52	1.59	1.66	1.74	1.82	1.90	1.99	2.08	2.17	2.27	2.37	2.48	2.59	2.71	2.83	2.96	3.09	3.23	138.23	3.38	134.86		3	3
		2.43	2.54	2.66	2.78	2.90	3.03	3.17	3.32	3.47	3.62	3.79	3.96	4.14	4.32	4.52	4.72	4.94	5.16	5.39		5.64		5.89		
4	5	2.37	2.48	2.59	2.71	2.83	2.96	3.09	3.23	3.38	3.53	3.69	3.85	4.03	4.21	4.40	4.60	4.81	5.02	5.25	312.32	5.49	306.83		5	4
		5.04	5.27	5.50	5.75	6.01	6.28	6.57	6.87	7.18	7.50	7.84	8.19	8.56	8.95	9.36	9.78	10.22	10.68	11.16		11.67		12.20		
5	6	5.37	5.61	5.86	6.13	6.40	6.69	7.00	7.31	7.64	7.99	8.35	8.73	9.12	9.53	9.96	10.41	10.88	11.38	11.89	393.57	12.43	381.14		6	5
		6.99	7.31	7.64	7.98	8.35	8.72	9.12	9.53	9.96	10.41	10.88	11.37	11.89	12.42	12.98	13.57	14.19	14.83	15.50		16.20		16.93		
6	7	1.82	1.91	1.99	2.08	2.18	2.27	2.38	2.48	2.60	2.71	2.84	2.97	3.10	3.24	3.39	3.54	3.70	3.87	4.04	167.79	4.22	163.56		7	6
		3.01	3.15	3.29	3.44	3.60	3.76	3.93	4.11	4.29	4.49	4.69	4.90	5.12	5.36	5.60	5.85	6.12	6.39	6.68		6.98		7.30		
7	8	4.22	4.42	4.62	4.82	5.04	5.27	5.51	5.76	6.02	6.29	6.57	6.87	7.18	7.51	7.85	8.20	8.57	8.96	9.36	400.40	9.79	390.61		8	7
		7.96	8.32	8.70	9.09	9.50	9.93	10.38	10.85	11.34	11.85	12.39	12.95	13.53	14.14	14.78	15.45	16.15	16.88	17.64		18.44		19.27		
8	9	3.64	3.80	3.97	4.15	4.34	4.54	4.74	4.96	5.18	5.42	5.66	5.92	6.18	6.46	6.76	7.06	7.38	7.71	8.06	1,037.36	8.43	1,028.93		9	8
		8.93	9.34	9.76	10.20	10.66	11.15	11.65	12.18	12.73	13.30	13.90	14.53	15.19	15.87	16.59	17.34	18.13	18.94	19.80		20.70		21.63		
9	11	2.86	2.99	3.13	3.27	3.42	3.57	3.73	3.90	4.08	4.26	4.45	4.66	4.87	5.09	5.32	5.56	5.81	6.07	6.34	248.15	6.63	241.52		11	9
		4.00	4.18	4.37	4.56	4.77	4.99	5.21	5.45	5.69	5.95	6.22	6.50	6.79	7.10	7.42	7.76	8.11	8.48	8.86		9.26		9.68		

Average B.O.Y. & E.O.Y. Cash Flows

Model Y EPS Growth

	#	Abbreviated Utility	UG 347 Control Group	UG 347 Staff	Average IRR	Terminal Value as % of NPV_{DIV}	Average 2018 - 2022 Dividend Growth Rates: EOY	BOY	Average	#	
	1	2	3	4	5	6	7	8	9	10	
1	1	Atmos	Yes	Yes	7.3%	52.6%	5.8%	5.9%	5.8%	1	1
2	2	Chesapeake	Yes	No	7.6%	65.9%	5.2%	5.3%	5.2%	2	2
3	3	New Jersey	Yes	No	6.2%	52.2%	0.9%	1.5%	1.2%	3	3
4	5	Northwest Natural	Yes	Yes	7.8%	53.5%	1.9%	1.7%	1.8%	5	4
5	6	ONE Gas	Yes	Yes	9.2%	38.1%	9.0%	10.1%	9.6%	6	5
6	7	South Jersey	Yes	No	8.7%	42.3%	4.1%	4.2%	4.2%	7	6
7	8	Southwest Gas	Yes	Yes	8.6%	44.9%	6.2%	6.7%	6.4%	8	7
8	9	Spire	Yes	Yes	11.2%	60.2%	3.5%	4.0%	3.8%	9	8
9	11	WGL	Yes	No	5.9%	51.3%	1.9%	2.2%	2.0%	11	9
		TOTAL PEERS	9 all	5	Mean						
			6 w/o M&A	30% Mid Ca	8.82%	41.54%	5.45%	Staff Gas Screen			
					8.05%	51.22%	4.46%	Company Peer Screen			
					8.61%	52.53%	5.45%	Company Peer Screen - w/o M&A			

UG 347 Staff ROE Summary

Stage 3 – Long-Term Annual Dividend and EPS Growth Rates					
Component	Real Rate	TIPS Inflation Forecast	20-Yr Nominal Rate	Weight	Weighted Rate
Energy Information Administration	2.00%	1.99%	4.03%	12.50%	0.50%
PricewaterhouseCooper	1.80%	1.99%	3.83%	12.50%	0.48%
Social Security Administration	2.20%	1.99%	4.23%	12.50%	0.53%
Congressional Budget Office			4.00%	12.50%	0.50%
BEA Nominal Historical,1980 Q1 – 2017 Q4	2.76%	1.99%	4.80%	50.0%	2.40%
Composite				100%	4.41%
Congressional Budget Office Long-Term 20-Year Budget Outlook			4.00%	100.0%	4.00%
BEA Nominal Historical,1980 Q1 – 2017 Q4	2.76%	1.99%	4.80%	50.0%	2.40%
Social Security Administration	2.20%	1.99%	4.23%	50.0%	2.12%
Near Historical				100%	4.52%

Note: Near Historical assumes that various federal initiatives will have greater long-run positive impact than the Congressional Budget Office expects.

	Model X: 3 Stage DCF - Dividend Growth with Terminal Value as Perpetuity						
	X	CBO	4.00%	Composite	4.41%	Near Historical	4.52%
1	Staff Gas Screen	7.43%		7.74%		7.83%	
2	Company Peer Screen	7.11%		7.44%		7.52%	
3	Company Peer Screen - w/o M&A	7.20%		7.52%		7.61%	

Hamada to Right →

Model X: 3 Stage DCF - Dividend Growth with Terminal Value as Perpetuity (Hamada Adjusted)							
X	CBO	4.00%	Composite	4.41%	Near Historical	4.52%	
Staff Gas Screen	7.69%		8.00%		8.09%		1
Company Peer Screen	7.44%		7.77%		7.85%		2
Company Peer Screen - w/o M&A	7.58%		7.90%		7.99%		3

	Model Y: 3 Stage DCF - Dividend Growth with Terminal Value as Sales based upon EPS Growth and Terminal Stock Sale						
	Y	CBO	4.00%	Composite	4.41%	Near Historical	4.52%
1	Staff Gas Screen	8.61%		8.87%		8.94%	
2	Company Peer Screen	7.87%		8.14%		8.21%	
3	Company Peer Screen - w/o M&A	8.39%		8.66%		8.73%	

Hamada to Right →

Model Y: 3 Stage DCF - Dividend & EPS Growth with Terminal Value as Stock Sale (Hamada Adjusted)							
Y	CBO	4.00%	Composite	4.41%	Near Historical	4.52%	
Staff Gas Screen	8.87%		9.13%		9.20%		1
Company Peer Screen	8.20%		8.47%		8.54%		2
Company Peer Screen - w/o M&A	8.77%		9.04%		9.11%		3

Common Stock Flotation Costs Adjustment Shifts Range of Reasonable ROE's Upward by : 12.5 bps

Range of Modeled Results 8.22% to 9.33% ROE

Best Fit Range of Reasonable ROEs 8.66% to 9.33% ROE

(Best fit is Staff's Hamada adjusted screened gas utilities that have most similar characteristics to NWN regulated gas operations in Oregon)

Midpoint of Best Fit Modeling Results 9.0% ROE

(Staff's informed judgement excludes some of the lower range of modeling results depicted above)

Staff Point ROE Recommendation:

Staff notes that its upper limit rounded up will support a 9.4% ROE
in the broader context of this general rate case, considering other factors addressed simultaneously.

	A	B	C	D	E	F	G	H	I	
					$(1+D)^{1/4}-1$		$(F/C)*(1+E)$	$(1+G+E)^4-1$		
	Utility	Ticker	* Recent Stock Price	Company Growth Rate	Quarterly Growth Rate	2018 VL "Last" Q-2 $ Quarterly Dividend	t+1 Dividend Yield Co. Growth Rate	ROE Staff Peers	Utility	
1	**Atmos**	ATO	88.99	6.2%	1.5%	0.4850	0.55%	8.53%	**Atmos**	1
4	**Northwest Natural**	NWN	61.63	6.4%	1.6%	0.4725	0.78%	9.70%	**Northwest Natural**	4
5	**ONE Gas**	OGS	73.17	6.3%	1.5%	0.4600	0.64%	9.00%	**ONE Gas**	5
7	**Southwest Gas**	SWX	74.99	6.4%	1.6%	0.5200	0.70%	9.38%	**Southwest Gas**	7
8	**Spire**	SR	71.35	4.8%	1.2%	0.6250	0.89%	8.52%	**Spire**	8
							Average	**9.03%**		

This Simple DCF tool is used as a vector in the interpretation of Staff's more comprehensive Three-Stage DCF Modeling.

If one assumed dividends were to grow at a steady rate forever, regardless of changing market conditions,

then: $P_0 = D_1 / (r - g)$

where:
- P_0 The current stock price
- D_1 The quarterly dividend expected in the next quarter
- r The cost of equity capital
- g The perpetual growth rate

* Average of 1st Day of Month Stock Price Close for 3 Mo. (April, May, June) Q2, 2018 per Yahoo Finance

CASE: UG 347
WITNESSES: MATT MULDOON
JEFFREY WATSON

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 1305

Staff Simple DCF Modeling

Exhibits in Furtherance
of Testimony in Support of Stipulation

January 30, 2019

STAFF EXHIBIT 1305

PROVIDED IN ELECTRONIC FORMAT ONLY

CASE: UG 347
WITNESSES: MATT MULDOON
JEFFREY WATSON

PUBLIC UTILITY COMMISSION OF OREGON

STAFF EXHIBIT 1306

Staff CAPM Modeling
Capital Asset Pricing Model

Exhibits in Furtherance of Testimony in Support of Stipulation

January 30, 2019

STAFF EXHIBIT 1306

PROVIDED IN ELECTRONIC FORMAT ONLY

Capital Asset Pricing Model (CAPM) Results and Inputs

$$(R_s = R_f + \beta_s(R_m - R_f))$$

CAPM Results	
CAPM High	**8.24**
CAPM Low	6.18
CAPM Avg	7.13

CAPM Inputs	
Risk Free High (Rf)	**3.70**
Risk Free Low (Rf)	2.94
Risk Free Average (Rf)	3.10
MRP High (Rm– Rf)	**6.30**
MRP Low (Rm– Rf)	4.50
MRP Average (Rm– Rf)	5.60
Beta (βs)	**0.72**

(Rm) - Expected Market Return Inputs		
Source	Returns	Period
CNBC	9.8	1928-2016
SeekingAlpha	9.5	1928-2015
Moneychimp	8.9	1926-2016
Average	**9.4**	

(Rf) - Risk Free-Rate Inputs		
Source	Est. Yield	Date Accessed
Trading Economics	2.94	7/16/2018
Financial Forecast Center	3.05	7/16/2018
Bloomberg	2.96	7/16/2018
MarketWatch	2.96	7/16/2018
Yahoo! Finance	2.97	7/16/2018
Blue Chip Financial Forecasts	3.70	3/1/2018
Average	**3.10**	

(Rm - Rf) - Market Risk Premium (MRP) Inputs	
Source	MRP
Ibbotson Market Risk Premium (Since 1980)	4.50
Morningstar 2015 Classic Yearbook (Since 1926)	6.00
Staff Calculated (Avg Return-Average Risk Free)	6.30
Average	**5.60**

(βs) Beta Inputs	
Company	Beta
Atmos Energy Corporation	0.70
Northwest Natural Gas	0.70
One Gas, Inc.	0.70
Southwest Gas	0.80
Spire Inc.	0.70
Average	**0.72**

CAPM Modeling
Data Sources

Expected Market Return Inputs (Estimated S&P 500 Returns)	
Source	**URL**
CNBC	https://www.cnbc.com/2017/06/18/the-sp-500-has-already-met-its-average-return-for-a-full-year.html
SeekingAlpha	https://seekingalpha.com/instablog/605212-robert-allan-schwartz/4831186-annual-returns-s-and-p-500-1928-2015
Moneychimp	http://www.moneychimp.com/features/market_cagr.htm

Risk Free-Rate Inputs (Estimated 30 Year UST Bond Yields)	
Source	**URL**
Trading Economics	https://tradingeconomics.com/united-states/30-year-bond-yield/forecast
Financial Forecast Center	https://www.forecasts.org/30yrT.htm
Bloomberg	https://www.bloomberg.com/quote/USGG30YR:IND
MarketWatch	https://www.marketwatch.com/investing/bond/tmubmusd30y?countrycode=bx
Yahoo! Finance	https://finance.yahoo.com/quote/%5ETYX/

CASE: UG 347
WITNESSES: MATT MULDOON
JEFFREY WATSON

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 1307

Long Run 10- to 30-Year Growth Rates

Exhibits in Furtherance
of Testimony in Support of Stipulation

January 30, 2019

STAFF EXHIBIT 1307 Part A

PROVIDED IN ELECTRONIC FORMAT ONLY

Long-Run GDP Growth Rates

ECONOMIC ASSUMPTIONS AND INTERACTIONS WITH THE BUDGET

Long-Run GDP Growth Rates

Table 2–1. ECONOMIC ASSUMPTIONS [1]

(Calendar Years, Dollar Amounts in Billions)

	Actual	Projections											
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Gross Domestic Product (GDP):													
Levels, Dollar Amounts in Billions:													
Current Dollars	18,624	19,372	20,262	21,263	22,345	23,482	24,672	25,923	27,234	28,598	30,001	31,461	32,991
Real, Chained (2009) Dollars	16,716	17,090	17,601	18,157	18,727	19,296	19,875	20,471	21,085	21,705	22,320	22,945	23,588
Chained Price Index (2009=100), Annual Average	111.4	113.4	115.1	117.1	119.3	121.7	124.1	126.6	129.2	131.8	134.4	137.1	139.9
Percent Change, Fourth Quarter over Fourth Quarter:													
Current Dollars	3.4	4.1	4.7	5.1	5.1	5.1	5.1	5.1	5.1	5.0	4.9	4.9	4.9
Real, Chained (2009) Dollars	1.8	2.5	3.1	3.2	3.1	3.0	3.0	3.0	3.0	2.9	2.8	2.8	2.8
Chained Price Index (2009=100)	1.5	1.6	1.6	1.8	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Percent Change, Year over Year:													
Current Dollars	2.8	4.0	4.6	4.9	5.1	5.1	5.1	5.1	5.1	5.0	4.9	4.9	4.9
Real, Chained (2009) Dollars	1.5	2.2	3.0	3.2	3.1	3.0	3.0	3.0	3.0	2.9	2.8	2.8	2.8
Chained Price Index (2009=100)	1.3	1.7	1.6	1.7	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Incomes, Billions of Current Dollars:													
Domestic Corporate Profits	1,679	1,753	1,893	1,985	2,050	2,060	2,047	2,035	2,043	2,048	2,041	2,049	2,046
Employee Compensation	9,979	10,320	10,750	11,225	11,774	12,408	13,104	13,843	14,622	15,438	16,291	17,160	18,092
Wages and Salaries	8,085	8,365	8,713	9,094	9,550	10,058	10,620	11,217	11,844	12,506	13,195	13,902	14,642
Other Taxable Income [2]	4,427	4,576	4,793	5,068	5,386	5,704	6,053	6,398	6,738	7,072	7,360	7,683	7,943
Consumer Price Index (All Urban):[3]													
Level (1982–1984 = 100), Annual Average	240.0	245.1	250.2	255.1	260.7	266.7	272.7	278.9	285.2	291.7	298.3	305.1	312.0
Percent Change, Fourth Quarter over Fourth Quarter	1.8	2.1	1.9	2.0	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Percent Change, Year over Year	1.3	2.1	2.1	2.0	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Unemployment Rate, Civilian, Percent:													
Fourth Quarter Level	4.7	4.1	3.8	3.7	3.8	3.9	4.1	4.2	4.4	4.5	4.8	4.8	4.8
Annual Average	4.9	4.4	3.9	3.7	3.8	3.9	4.0	4.2	4.3	4.5	4.7	4.8	4.8
Federal Pay Raises, January, Percent:													
Military [4]	1.3	2.1	2.4	2.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Civilian [5]	1.3	2.1	1.9	0.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Interest Rates, Percent:													
91-Day Treasury Bills [6]	0.3	0.9	1.5	2.3	2.9	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9
10-Year Treasury Notes	1.8	2.3	2.6	3.1	3.4	3.6	3.7	3.7	3.6	3.6	3.6	3.6	3.6

N/A=Not Available

[1] Based on information available as of mid-November 2017.

[2] Rent, interest, dividend, and proprietors' income components of personal income.

[3] Seasonally adjusted CPI for all urban consumers.

[4] Percentages apply to basic pay only; percentages to be proposed for years after 2019 have not yet been determined.

[5] Overall average increase, including locality pay adjustments. Percentages to be proposed for years after 2019 have not yet been determined.

[6] Average rate, secondary market (bank discount basis).

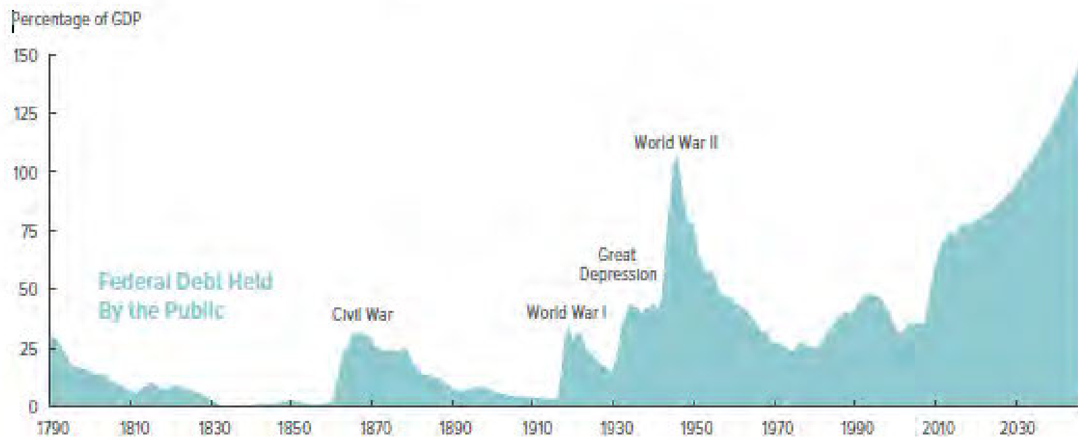
* 0.05 percent or less.

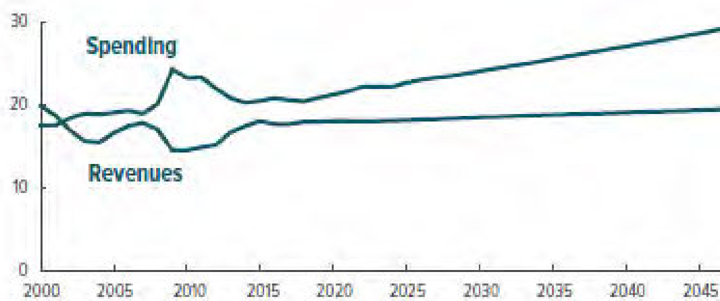
Long-Run GDP Growth Rates

CONGRESS OF THE UNITED STATES
CONGRESSIONAL BUDGET OFFICE

CBO

The 2017 Long-Term Budget Outlook





Under current law, spending growth—driven by outlays for Social Security, the major health care programs, and net interest—is projected to outpace revenue growth.

MARCH 2017

Long-Run GDP Growth Rates

Table A-1.

Average Annual Values for Demographic and Economic Variables That Underlie CBO's Extended Baseline

	1987–2016	2017–2027	2028–2037	2038–2047	Overall, 2017–2047
			Demographic Variables		
Growth of the Population (Percent)	0.9	0.7	0.6	0.4	0.6
Fertility Rate (Children per woman)	2.0	1.9	1.9	1.9	1.9
Immigration Rate (Per 1,000 people in the U.S. population)	3.8	3.2	3.2	3.2	3.2
Life Expectancy at Birth, End of Period (Years)[a]	79.1	80.5	81.6	82.8	82.8
Life Expectancy at Age 65, End of Period (Years)[a]	19.3	20.1	20.8	21.5	21.5
			Economic Variables (Percent)		
Growth of GDP					
Real GDP	2.5	1.9	2.0	1.9	1.9
Nominal GDP	4.8	3.9	4.0	4.0	4.0
Growth of the Labor Force	1.0	0.6	0.4	0.4	0.5
Labor Force Participation Rate	65.7	62.0	60.2	59.4	60.6
Unemployment					
Unemployment rate	6.0	4.8	4.9	4.8	4.8
Natural rate of unemployment	5.2	4.7	4.6	4.6	4.6
Growth of Average Hours Worked	-0.1	-0.1	-0.1	-0.1	-0.1
Growth of Total Hours Worked	1.0	0.4	0.3	0.4	0.3
Earnings as a Share of Compensation	81	81	81	80	81
Growth of Real Earnings per Worker	1.0	1.1	1.2	1.1	1.1
Share of Earnings Below the Taxable Maximum	85	81	79	79	80
Growth of Productivity					
Total factor productivity	1.2	1.1	1.2	1.2	1.2
Labor productivity	1.5	1.5	1.6	1.6	1.6
Inflation					
Growth of the CPI-U	2.6	2.4	2.4	2.4	2.4
Growth of the GDP price index	2.2	2.0	2.0	2.0	2.0
Interest Rates					
Real rates					
On 10-year Treasury notes and Social Security bonds	2.5	0.9	1.5	2.1	1.5
Nominal rates					
On 10-year Treasury notes and Social Security bonds	5.1	3.2	3.9	4.5	3.8
On all federal debt held by the public[b]	5.2	2.7	3.6	4.1	3.4

Source: Congressional Budget Office.

The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2027 and then extending most of the concepts underlying those baseline projections for the rest of the long-term projection period.

CPI-U = consumer price index for all urban consumers; GDP = gross domestic product.

a. Life expectancy as used here is period life expectancy, which is the amount of time that a person in a given year would expect to survive beyond his or her current age on the basis of that year's mortality rates for various ages.

b. The interest rate on all federal debt held by the public equals net interest payments in the current fiscal year divided by debt held by the public at the end of the previous fiscal year.

Long-Run GDP Growth Rates

THE 2017 ANNUAL REPORT OF THE BOARD OF TRUSTEES OF THE FEDERAL OLD-AGE AND SURVIVORS INSURANCE AND FEDERAL DISABILITY INSURANCE TRUST FUNDS

COMMUNICATION

FROM

THE BOARD OF TRUSTEES, FEDERAL OLD-AGE AND SURVIVORS INSURANCE AND FEDERAL DISABILITY INSURANCE TRUST FUNDS

TRANSMITTING

THE 2017 ANNUAL REPORT OF THE BOARD OF TRUSTEES OF THE FEDERAL OLD-AGE AND SURVIVORS INSURANCE AND FEDERAL DISABILITY INSURANCE TRUST FUNDS

Long-Run GDP Growth Rates

Assumptions and Methods

Table V.B2.—Additional Economic Factors (Cont.)

Calendar year	Average annual unemployment rate[a]	Annual percentage change[b] in—			Average annual interest rate	
		Labor force[c]	Total employment[d]	Real GDP[e]	Nominal[f]	Real[g]
Intermediate:						
2017	5.0	1.2	1.1	2.9	2.7	-0.3
2018	5.3	1.5	1.1	3.0	3.7	-.3
2019	5.5	1.3	1.1	3.0	4.3	1.1
2020	5.5	1.0	1.0	2.9	4.6	1.7
2021	5.5	.9	.9	2.7	4.8	2.0
2022	5.5	.7	.7	2.4	5.0	2.2
2023	5.5	.6	.5	2.2	5.0	2.4
2024	5.6	.6	.6	2.2	5.2	2.4
2025	5.6	.6	.6	2.2	5.3	2.6
2026	5.6	.5	.5	2.1	5.3	2.7
2030	5.5	.5	.5	2.1	5.3	2.7
2035	5.5	.5	.5	2.1	5.3	2.7
2040	5.5	.6	.6	2.2	5.3	2.7
2045	5.5	.6	.6	2.2	5.3	2.7
2050	5.5	.5	.5	2.2	5.3	2.7
2055	5.5	.5	.5	2.1	5.3	2.7
2060	5.5	.4	.4	2.1	5.3	2.7
2065	5.5	.4	.4	2.1	5.3	2.7
2070	5.5	.5	.5	2.1	5.3	2.7
2075	5.5	.5	.5	2.1	5.3	2.7
2080	5.5	.5	.5	2.1	5.3	2.7
2085	5.5	.4	.4	2.1	5.3	2.7
2090	5.5	.4	.4	2.0	5.3	2.7
2095	5.5	.4	.4	2.0	5.3	2.7
Low-cost:						
2017	4.6	1.2	1.5	3.8	3.5	-.9
2018	4.6	1.7	1.7	4.4	5.1	-.3
2019	4.6	1.6	1.6	4.2	5.7	1.7
2020	4.6	1.2	1.2	3.6	5.7	2.5
2021	4.6	.9	.9	3.0	5.8	2.5
2022	4.6	.8	.7	2.8	5.9	2.6
2023	4.6	.8	.7	2.8	6.1	2.7
2024	4.6	.8	.8	2.9	6.3	2.9
2025	4.6	.8	.8	2.9	6.4	3.1
2026	4.6	.7	.7	2.7	6.4	3.2
2030	4.5	.6	.6	2.6	6.4	3.2
2035	4.5	.6	.6	2.7	6.4	3.2
2040	4.5	.8	.7	2.8	6.4	3.2
2045	4.5	.8	.8	2.8	6.4	3.2
2050	4.5	.8	.8	2.8	6.4	3.2
2055	4.5	.7	.7	2.7	6.4	3.2
2060	4.5	.7	.7	2.7	6.4	3.2
2065	4.5	.7	.7	2.7	6.4	3.2
2070	4.5	.8	.7	2.8	6.4	3.2
2075	4.5	.8	.8	2.8	6.4	3.2
2080	4.5	.8	.8	2.8	6.4	3.2
2085	4.5	.7	.7	2.8	6.4	3.2
2090	4.5	.7	.7	2.7	6.4	3.2
2095	4.5	.7	.7	2.7	6.4	3.2

Long-Run GDP Growth Rates

Independent Statistics & Analysis
U.S. Energy Information Administration

Assumptions to the Annual Energy Outlook 2017

July 2017

Independent Statistics & Analysis
www.eia.gov

U.S. Department of Energy
Washington, DC 20585

Long-Run GDP Growth Rates

Table 3.2. Average annual real gross domestic product rates, 2010-40

2010 purchasing power parity weights and prices

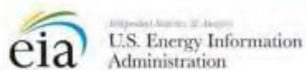
Region	Average Annual Percentage Change
OECD	2.0%
OECD Americas	2.5%
OECD Europe	1.8%
OECD Asia	1.3%
Non-OECD	4.2%
Non-OECD Europe and Eurasia	3.0%
Non-OECD Asia	4.5%
Middle East	3.8%
Africa	5.0%
Non-OECD Americas	2.8%
Total World	3.3%

Source: U.S. Energy Information Administration, Derived from Oxford Economic Model (February 2014).

Long-Run GDP Growth Rates

Annual Energy Outlook 2018

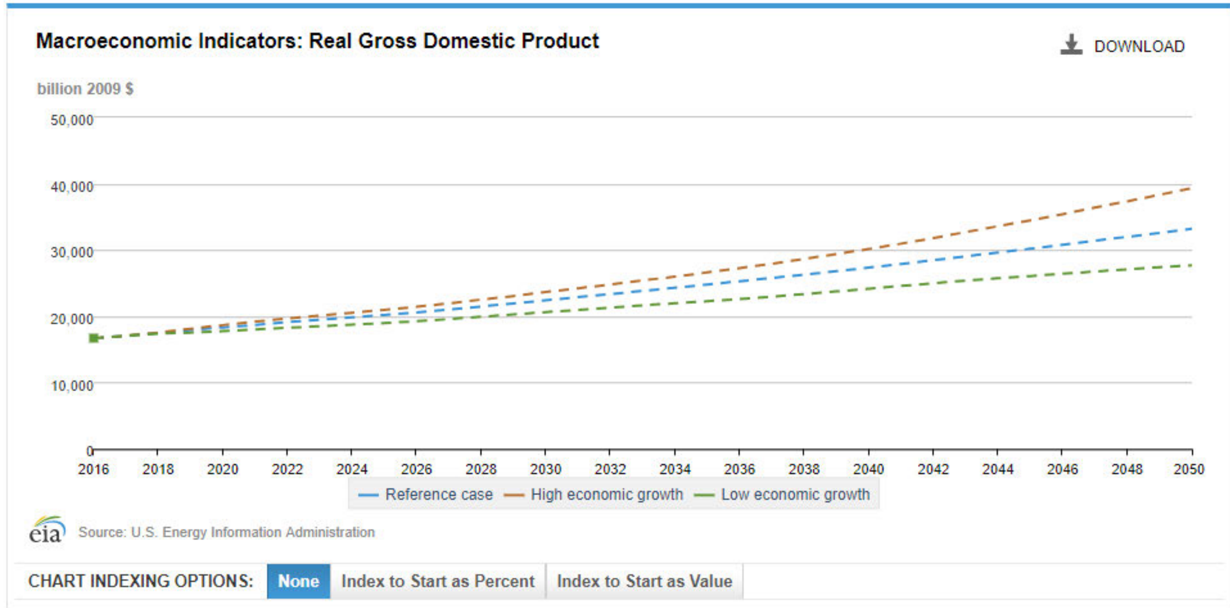
with projections to 2050



#AEO2018

February 6, 2018
www.eia.gov/aeo

Long-Run GDP Growth Rates



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Time-series | Map | Annual | Every 5th Year | 2016 | 2050

PIN | API

	6	2047	2048	2049	2050	Growth (2017-2050)
Real Gross Domestic Product						
Reference case (billion 2009 $)	5	31,404	31,998	32,584	33,205	2.0%
High economic growth (billion 2009 $)	7	36,408	37,352	38,338	39,348	2.6%
Low economic growth (billion 2009 $)	2	26,764	27,096	27,413	27,710	1.5%

Long-Run GDP Growth Rates

October 2017

ERRATA Corrections to this article were made on January 30, 2018. Specifically, table 2 and figures 12–15 and related text were revised to include corrected estimates of self-employed workers. For more detailed information, see the errata notice at https://www.bls.gov/bls/errata/employment-projections-2016-26-corrections.htm.

Projections overview and highlights, 2016–26

Figure 5. GDP, 10-year compound average annual rate, 1966-2016 and projected 2016-26

Years	GDP (percent)
1966-76	3.0
1976-86	3.3
1986-96	3.0
1996-2006	3.3
2006-16	1.4
Projected 2016-26	2.0

Note: GDP = gross domestic product.

Source: U.S. Bureau of Labor Statistics.

Long-Run GDP Growth Rates

The Long View
How will the global economic order change by 2050?

February 2017

pwc

Long-Run GDP Growth Rates

Table B2: Breakdown of components of average real growth in GDP at MERs (2016-2050)

Country	Average Pop Growth p.a %	Average Real Growth per capita p.a %	% of growth due to MER	Average GDP growth p.a. (in USD)
India	0.7%	4.1%	2.8%	7.7%
Vietnam	0.5%	4.5%	2.4%	7.4%
Bangladesh	0.6%	4.1%	2.2%	7.0%
Pakistan	1.4%	2.9%	2.6%	7.0%
Egypt	1.4%	2.6%	2.5%	6.6%
Philippines	1.1%	3.1%	2.1%	6.3%
Nigeria	2.3%	1.9%	2.1%	6.2%
Indonesia	0.6%	3.1%	2.5%	6.2%
South Africa	0.5%	3.2%	2.1%	5.8%
Malaysia	0.8%	2.7%	2.3%	5.8%
Iran	0.4%	2.5%	2.6%	5.5%
Colombia	0.4%	2.9%	2.0%	5.3%
Saudi Arabia	1.1%	1.9%	2.2%	5.1%
Mexico	0.7%	2.5%	1.7%	5.0%
Thailand	-0.3%	2.9%	2.3%	4.9%
Turkey	0.5%	2.4%	1.8%	4.8%
Poland	-0.4%	2.5%	2.5%	4.5%
China	-0.1%	3.1%	1.4%	4.4%
Russia	-0.3%	2.2%	2.3%	4.2%
Argentina	0.7%	2.2%	1.1%	4.1%
Brazil	0.4%	2.2%	1.3%	3.9%
South Korea	0.0%	1.8%	1.0%	2.8%
Spain	-0.1%	1.5%	0.9%	2.3%
Australia	0.9%	1.3%	-0.2%	2.1%
United Kingdom	0.4%	1.5%	0.2%	2.1%
Canada	0.6%	1.2%	0.3%	2.1%
Netherlands	0.1%	1.5%	0.4%	2.0%
France	0.3%	1.3%	0.3%	1.9%
United States	0.5%	1.3%	0.0%	1.8%
Germany	-0.2%	1.5%	0.4%	1.7%
Italy	-0.2%	1.2%	0.5%	1.5%
Japan	-0.5%	1.4%	0.1%	1.1%

Source: PwC analysis

Resource	10-Year GDP Projection	20-Year GDP Projection	30-Year GDP Projection	Date Accessed	Last Updated	Page
White House Budget, FY 2019, Table 2-1, Economic Assumptions	4.9 (N), 2.8 (Real)	N/A	N/A	3/7/2018	2/1/2018	11
URL https://www.whitehouse.gov/wp-content/uploads/2018/02/ap_2_assumptions-fy2019.pdf						
CBO, 2017 LT Budget Outlook, Table A-1, Average Annual Values	3.9 (N), 1.9 (Real)	**4.0** (**N**), 2.0 (Real)	**4.0** (**N**), 1.9 (Real)	3/7/2018	3/1/2017	30
URL https://www.cbo.gov/system/files/115th-congress-2017-2018/reports/52480-ltbo.pdf	Note: CBO to release annual update on 4/9/2018					
SSA OASDI Trustee Report, Table V.B2, Additional Economic Factors	2.1 (Real, FY 2030)	**2.2** (**Real,** FY 2040)	**2.2** (**Real,** FY 2050)	3/7/2018	7/13/2017	112
URL https://www.ssa.gov/oact/TR/2017/tr2017.pdf	Note: Using intermediate measure, low cost and high cost available					
EIA Assumptions to **Annual Energy Outlook**, Table 3.2, Average Annual **Real GDP**, **2010-40**	N/A	2.5 (Real, FY 2040)	N/A	3/8/2018	7/1/2017	24
URL https://www.eia.gov/outlooks/aeo/assumptions/pdf/0554(2017).pdf	Note: Measure is for OECD - **Americas,** not US individually					
EIA Annual Energy Outlook 2018, **Macroeconomic Indicators**	N/A	N/A	1.5%, **2.0%**, 2.6% (Real, FY 2050)	3/8/2018	8/1/2017	N/A
URL https://www.eia.gov/outlooks/aeo/pdf/AEO2018.pdf	Note: Measures shown are for Low economic growth, **Reference** case, and High economic growth (respectively)					
BLS, Projections Overview and Highlights, **2016-26**, Figure 5	2.0 (Real, FY 2026)	N/A	N/A	3/8/2018	10/1/2017	N/A
URL https://www.bls.gov/opub/mlr/2017/article/projections-overview-and-highlights-2016-26.htm						
PwC, The Long View, Table B2, Breakdown of…average real growth in GPD at MERs (**2016-2050**)	N/A	N/A	**1.8%** (**Real,** FY 2050)	3/8/2018	2/1/2017	69
URL https://www.pwc.com/gx/en/world-2050/assets/pwc-the-world-in-2050-full-report-feb-2017.pdf						

Acronyms Used	
BLS	Bureau of Labor Statistics
CBO	Congressional Budget Office
EIA	Energy Information Administration
FY	Fiscal Year
GDP	Gross Domestic Product
MERs	Market Exchange Rates
N	Nominal
N/A	Not Available
OASDI	Old Age Survivors Disability Insurance (Socal Security)
PwC	PricewaterhouseCooper
R	Real
SSA	Social Security Administration

CASE: UG 347
WITNESSES: MATT MULDOON
JEFFREY WATSON

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 1308

Staff GDP Analysis with BEA Historical Data

Exhibits in Furtherance
of Testimony in Support of Stipulation

January 30, 2019

STAFF EXHIBIT 1308

PROVIDED IN ELECTRONIC FORMAT ONLY

Bureau of Economic Analysis (BEA)

Current-Dollar and "Real" Gross Domestic Product (GDP)

Staff Accessed March 6, 2018

Data Recompiled by BEA on Feb. 28, 2018

Annual — http://www.bea.gov/national/index.htm

Quarterly — (Seasonally adjusted annual rates)

1980 through 2017 Q4

Yr	GDP in billions of current dollars	GDP in billions of chained 2009 dollars	Quarter	GDP in billions of current dollars	GDP in billions of chained 2009 dollars	Qtr#	Average	2.67%	Real
1929	104.6	1,056.6	1947Q1	243.1	1,934.5	1	1	8.783381	1980
1930	92.2	966.7	1947Q2	246.3	1,932.3	2	2	8.762896	
1931	77.4	904.8	1947Q3	250.1	1,930.3	3	3	8.761378	
1932	59.5	788.2	1947Q4	260.3	1,960.7	4	4	8.779742	
1933	57.2	778.3	1948Q1	266.2	1,989.5	5	5	8.800219	1981
1934	66.8	862.2	1948Q2	272.9	2,021.9	6	6	8.792899	
1935	74.3	939.0	1948Q3	279.5	2,033.2	7	7	8.804310	
1936	84.9	1,060.5	1948Q4	280.7	2,035.3	8	8	8.792565	
1937	93.0	1,114.6	1949Q1	275.4	2,007.5	9	9	8.775704	1982
1938	87.4	1,077.7	1949Q2	271.7	2,000.8	10	10	8.781125	
1939	93.5	1,163.6	1949Q3	273.3	2,022.8	11	11	8.777525	
1940	102.9	1,266.1	1949Q4	271.0	2,004.7	12	12	8.778495	
1941	129.4	1,490.3	1950Q1	281.2	2,084.6	13	13	8.791516	1983
1942	166.0	1,771.8	1950Q2	290.7	2,147.6	14	14	8.814078	
1943	203.1	2,073.7	1950Q3	308.5	2,230.4	15	15	8.833463	
1944	224.6	2,239.4	1950Q4	320.3	2,273.4	16	16	8.853880	
1945	228.2	2,217.8	1951Q1	336.4	2,304.5	17	17	8.873552	1984
1946	227.8	1,960.9	1951Q2	344.5	2,344.5	18	18	8.890961	
1947	249.9	1,939.4	1951Q3	351.8	2,392.8	19	19	8.900753	
1948	274.8	2,020.0	1951Q4	356.6	2,398.1	20	20	8.908695	
1949	272.8	2,008.9	1952Q1	360.2	2,423.5	21	21	8.918583	1985
1950	300.2	2,184.0	1952Q2	361.4	2,428.5	22	22	8.927699	
1951	347.3	2,360.0	1952Q3	368.1	2,446.1	23	23	8.943140	
1952	367.7	2,456.1	1952Q4	381.2	2,526.4	24	24	8.950611	
1953	389.7	2,571.4	1953Q1	388.5	2,573.4	25	25	8.959838	1986
1954	391.1	2,556.9	1953Q2	392.3	2,593.5	26	26	8.964414	
1955	426.2	2,739.0	1953Q3	391.7	2,578.9	27	27	8.974441	
1956	450.1	2,797.4	1953Q4	386.5	2,539.8	28	28	8.979606	
1957	474.9	2,856.3	1954Q1	385.9	2,528.0	29	29	8.986572	1987
1958	482.0	2,835.3	1954Q2	386.7	2,530.7	30	30	8.997729	
1959	522.5	3,031.0	1954Q3	391.6	2,559.4	31	31	9.006754	
1960	543.3	3,108.7	1954Q4	400.3	2,609.3	32	32	9.023131	
1961	563.3	3,188.1	1955Q1	413.8	2,683.8	33	33	9.028735	1988
1962	605.1	3,383.1	1955Q2	422.2	2,727.5	34	34	9.041863	
1963	638.6	3,530.4	1955Q3	430.9	2,764.1	35	35	9.047621	
1964	685.8	3,734.0	1955Q4	437.8	2,780.8	36	36	9.060784	
1965	743.7	3,976.7	1956Q1	440.5	2,770.0	37	37	9.070814	1989
1966	815.0	4,238.9	1956Q2	446.8	2,792.9	38	38	9.078647	
1967	861.7	4,355.2	1956Q3	452.0	2,790.6	39	39	9.086080	
1968	942.5	4,569.0	1956Q4	461.3	2,836.2	40	40	9.088195	
1969	1,019.9	4,712.5	1957Q1	470.6	2,854.5	41	41	9.099085	1990
1970	1,075.9	4,722.0	1957Q2	472.8	2,848.2	42	42	9.102944	
1971	1,167.8	4,877.6	1957Q3	480.3	2,875.9	43	43	9.103189	
1972	1,282.4	5,134.3	1957Q4	475.7	2,846.4	44	44	9.094638	
1973	1,428.5	5,424.1	1958Q1	468.4	2,772.7	45	45	9.089934	1991
1974	1,548.8	5,396.0	1958Q2	472.8	2,790.9	46	46	9.097664	
1975	1,688.9	5,385.4	1958Q3	486.7	2,855.5	47	47	9.102454	
1976	1,877.6	5,675.4	1958Q4	500.4	2,922.3	48	48	9.106800	
1977	2,086.0	5,937.0	1959Q1	511.1	2,976.6	49	49	9.118554	1992
1978	2,356.6	6,267.2	1959Q2	524.2	3,049.0	50	50	9.129510	
1979	2,632.1	6,466.2	1959Q3	525.2	3,043.1	51	51	9.139188	
1980	2,862.5	6,450.4	1959Q4	529.3	3,055.1	52	52	9.149156	
1981	3,211.0	6,617.7	1960Q1	543.3	3,123.2	53	53	9.151026	1993
1982	3,345.0	6,491.3	1960Q2	542.7	3,111.3	54	54	9.156950	
1983	3,638.1	6,792.0	1960Q3	546.0	3,119.1	55	55	9.161812	
1984	4,040.7	7,285.0	1960Q4	541.1	3,081.3	56	56	9.175076	
1985	4,346.7	7,593.8	1961Q1	545.9	3,102.3	57	57	9.184838	1994
1986	4,590.2	7,860.5	1961Q2	557.4	3,159.9	58	58	9.198409	
1987	4,870.2	8,132.6	1961Q3	568.2	3,212.6	59	59	9.204292	
1988	5,252.6	8,474.5	1961Q4	581.6	3,277.7	60	60	9.215577	
1989	5,657.7	8,786.4	1962Q1	595.2	3,336.8	61	61	9.218993	1995
1990	5,979.6	8,955.0	1962Q2	602.6	3,372.7	62	62	9.222476	
1991	6,174.0	8,948.4	1962Q3	609.6	3,404.8	63	63	9.231005	
1992	6,539.3	9,266.6	1962Q4	613.1	3,418.0	64	64	9.238072	
1993	6,878.7	9,521.0	1963Q1	622.7	3,456.1	65	65	9.244616	1996
1994	7,308.8	9,905.4	1963Q2	631.8	3,501.1	66	66	9.261927	
1995	7,664.1	10,174.8	1963Q3	645.0	3,569.5	67	67	9.271134	
1996	8,100.2	10,561.0	1963Q4	654.8	3,595.0	68	68	9.281647	
1997	8,608.5	11,034.9	1964Q1	671.1	3,672.7	69	69	9.289235	1997
1998	9,089.2	11,525.9	1964Q2	680.8	3,716.4	70	70	9.304213	
1999	9,660.6	12,065.9	1964Q3	692.8	3,766.9	71	71	9.316860	
2000	10,284.8	12,559.7	1964Q4	698.4	3,780.2	72	72	9.324588	
2001	10,621.8	12,682.2	1965Q1	719.2	3,873.5	73	73	9.334432	1998
2002	10,977.5	12,908.8	1965Q2	732.4	3,926.4	74	74	9.344084	
2003	11,510.7	13,271.1	1965Q3	750.2	4,006.2	75	75	9.357087	
2004	12,274.9	13,773.5	1965Q4	773.1	4,100.6	76	76	9.373369	
2005	13,093.7	14,234.2	1966Q1	797.3	4,201.9	77	77	9.381323	1999
2006	13,855.9	14,613.8	1966Q2	807.2	4,219.1	78	78	9.389532	
2007	14,477.6	14,873.7	1966Q3	820.8	4,249.2	79	79	9.402043	
2008	14,718.6	14,830.4	1966Q4	834.9	4,285.6	80	80	9.419247	
2009	14,418.7	14,418.7	1967Q1	846.0	4,324.9	81	81	9.422148	2000
2010	14,964.4	14,783.8	1967Q2	851.1	4,328.7	82	82	9.440857	
2011	15,517.9	15,020.6	1967Q3	866.6	4,366.1	83	83	9.442063	
2012	16,155.3	15,354.6	1967Q4	883.2	4,401.2	84	84	9.447726	
2013	16,691.5	15,612.2	1968Q1	911.1	4,490.6	85	85	9.444883	2001
2014	17,427.6	16,013.3	1968Q2	936.3	4,566.4	86	86	9.450168	
2015	18,120.7	16,471.5	1968Q3	952.3	4,599.3	87	87	9.447000	
2016	18,624.5	16,716.2	1968Q4	970.1	4,619.8	88	88	9.449775	
2017	19,386.2	17,092.5	1969Q1	995.4	4,691.6	89	89	9.458941	2002
			1969Q2	1,011.4	4,706.7	90	90	9.464440	
			1969Q3	1,032.0	4,736.1	91	91	9.469299	
			1969Q4	1,040.7	4,715.5	92	92	9.469932	
			1970Q1	1,053.5	4,707.1	93	93	9.475102	2003
			1970Q2	1,070.1	4,715.4	94	94	9.484337	
			1970Q3	1,088.5	4,757.2	95	95	9.500948	
			1970Q4	1,091.5	4,708.3	96	96	9.512569	
			1971Q1	1,137.8	4,834.3	97	97	9.518303	2004
			1971Q2	1,159.4	4,861.9	98	98	9.525604	
			1971Q3	1,180.3	4,900.0	99	99	9.534653	
			1971Q4	1,193.6	4,914.3	100	100	9.543263	
			1972Q1	1,233.8	5,002.4	101	101	9.553866	2005
			1972Q2	1,270.1	5,118.3	102	102	9.559073	
			1972Q3	1,293.8	5,165.4	103	103	9.567441	
			1972Q4	1,332.0	5,251.2	104	104	9.573135	
			1973Q1	1,380.7	5,380.5	105	105	9.585078	2006
			1973Q2	1,417.6	5,441.5	106	106	9.588064	
			1973Q3	1,436.8	5,411.9	107	107	9.588955	
			1973Q4	1,479.1	5,462.4	108	108	9.596752	
			1974Q1	1,494.7	5,417.0	109	109	9.597370	2007
			1974Q2	1,534.2	5,431.3	110	110	9.604994	
			1974Q3	1,563.4	5,378.7	111	111	9.611697	
			1974Q4	1,603.0	5,357.2	112	112	9.615259	
			1975Q1	1,619.6	5,292.4	113	113	9.608412	2008
			1975Q2	1,656.4	5,333.2	114	114	9.613362	
			1975Q3	1,713.8	5,421.4	115	115	9.608553	
			1975Q4	1,765.9	5,494.4	116	116	9.587200	
			1976Q1	1,824.5	5,618.5	117	117	9.573246	2009
			1976Q2	1,856.9	5,661.0	118	118	9.571895	
			1976Q3	1,890.5	5,689.8	119	119	9.575157	
			1976Q4	1,938.4	5,732.5	120	120	9.584789	
			1977Q1	1,992.5	5,799.2	121	121	9.589106	2010
			1977Q2	2,060.2	5,913.0	122	122	9.598720	
			1977Q3	2,122.4	6,017.6	123	123	9.605452	
			1977Q4	2,168.7	6,018.2	124	124	9.611731	
			1978Q1	2,208.7	6,039.2	125	125	9.607861	2011
			1978Q2	2,336.6	6,274.0	126	126	9.615112	
			1978Q3	2,398.9	6,335.3	127	127	9.617211	
			1978Q4	2,482.2	6,420.3	128	128	9.628412	
			1979Q1	2,531.6	6,433.0	129	129	9.635020	2012
			1979Q2	2,595.9	6,440.8	130	130	9.639678	
			1979Q3	2,670.4	6,487.1	131	131	9.640875	
			1979Q4	2,730.7	6,503.9	132	132	9.641103	
			1980Q1	2,796.5	6,524.9	133	133	9.648073	2013
			1980Q2	2,799.9	6,392.6	134	134	9.649988	
			1980Q3	2,860.0	6,382.9	135	135	9.657670	
			1980Q4	2,993.5	6,501.2	136	136	9.667379	
			1981Q1	3,131.8	6,635.7	137	137	9.665078	2014
			1981Q2	3,167.3	6,587.3	138	138	9.676323	
			1981Q3	3,261.2	6,662.9	139	139	9.689025	
			1981Q4	3,283.5	6,585.1	140	140	9.694013	
			1982Q1	3,273.8	6,475.0	141	141	9.701983	2015
			1982Q2	3,331.3	6,510.2	142	142	9.708743	
			1982Q3	3,367.1	6,486.8	143	143	9.712787	
			1982Q4	3,407.8	6,493.1	144	144	9.713996	
			1983Q1	3,480.3	6,578.2	145	145	9.715446	2016
			1983Q2	3,583.8	6,728.3	146	146	9.720976	
			1983Q3	3,692.3	6,860.0	147	147	9.727830	
			1983Q4	3,796.1	7,001.5	148	148	9.732189	

OLS Regression

Annualized Real LN GPD Q

2.76%

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.987298453
R Square	0.974758234
Adjusted R Square	0.974589956
Standard Error	0.048462262
Observations	152

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	13.60428747	13.60428747	5792.532028	9.4979E-122
Residual	150	0.352288621	0.002348591		
Total	151	13.95657609			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	8.795133966	0.007900568	1113.228024	1.0678E-295	8.779523191	8.810744741	8.779523191	8.810744741
X Variable 1	0.006818244	8.95856E-05	76.10868563	9.4979E-122	0.006641231	0.006995257	0.006641231	0.006995257

GDP is an array of expenditure and income data collected by BEA directly and through other government agencies.

Note July 31, 2013, 14th Comprehensive Significant Revision:
BEA revised its tables back to 1929 in to order to count:
1 Artistic Works
2 Research and Development
as Capital Investments that Depreciate Over Time
rather than one time expenditures

From an Economy based on
(Industry and Manufacturing)
to one based on
(Knowledge and Information)

This comprehensive revision did not cause a large percentage jump.
The relative difference of actual amounts over time changed little.

1984Q1	3,912.8	7,140.6	149	**149**	9.735258	**2017**
1984Q2	4,015.0	7,266.0	150	**150**	9.742796	
1984Q3	4,087.4	7,337.5	151	**151**	9.750564	
1984Q4	4,147.6	7,396.0	152	**152**	9.756825	

1985Q1	4,237.0	7,469.5	153
1985Q2	4,302.3	7,537.9	154
1985Q3	4,394.6	7,655.2	155
1985Q4	4,453.1	7,712.6	156
1986Q1	4,516.3	7,784.1	157
1986Q2	4,555.2	7,819.8	158
1986Q3	4,619.6	7,898.6	159
1986Q4	4,669.4	7,939.5	160
1987Q1	4,736.2	7,995.0	161
1987Q2	4,821.5	8,084.7	162
1987Q3	4,900.5	8,158.0	163
1987Q4	5,022.7	8,292.7	164
1988Q1	5,090.6	8,339.3	165
1988Q2	5,207.7	8,449.5	166
1988Q3	5,299.5	8,498.3	167
1988Q4	5,412.7	8,610.9	168
1989Q1	5,527.4	8,697.7	169
1989Q2	5,628.4	8,766.1	170
1989Q3	5,711.6	8,831.5	171
1989Q4	5,763.4	8,850.2	172
1990Q1	5,890.8	8,947.1	173
1990Q2	5,974.7	8,981.7	174
1990Q3	6,029.5	8,983.9	175
1990Q4	6,023.3	8,907.4	176
1991Q1	6,054.9	8,865.6	177
1991Q2	6,143.6	8,934.4	178
1991Q3	6,218.4	8,977.3	179
1991Q4	6,279.3	9,016.4	180
1992Q1	6,380.8	9,123.0	181
1992Q2	6,492.3	9,223.5	182
1992Q3	6,586.5	9,313.2	183
1992Q4	6,697.6	9,406.5	184
1993Q1	6,748.2	9,424.1	185
1993Q2	6,829.6	9,480.1	186
1993Q3	6,904.2	9,526.3	187
1993Q4	7,032.8	9,653.5	188
1994Q1	7,136.3	9,748.2	189
1994Q2	7,269.8	9,881.4	190
1994Q3	7,352.3	9,939.7	191
1994Q4	7,476.7	10,052.5	192
1995Q1	7,545.3	10,086.9	193
1995Q2	7,604.9	10,122.1	194
1995Q3	7,706.5	10,208.8	195
1995Q4	7,799.5	10,281.2	196
1996Q1	7,893.1	10,348.7	197
1996Q2	8,061.5	10,529.4	198
1996Q3	8,159.0	10,626.8	199
1996Q4	8,287.1	10,739.1	200
1997Q1	8,402.1	10,820.9	201
1997Q2	8,551.9	10,984.2	202
1997Q3	8,691.8	11,124.0	203
1997Q4	8,788.3	11,210.3	204
1998Q1	8,889.7	11,321.2	205
1998Q2	8,994.7	11,431.0	206
1998Q3	9,146.5	11,580.6	207
1998Q4	9,325.7	11,770.7	208
1999Q1	9,447.1	11,864.7	209
1999Q2	9,557.0	11,962.5	210
1999Q3	9,712.3	12,113.1	211
1999Q4	9,926.1	12,323.3	212
2000Q1	##########	12,359.1	213
2000Q2	##########	12,592.5	214
2000Q3	##########	12,607.7	215
2000Q4	##########	12,679.3	216
2001Q1	##########	12,643.3	217
2001Q2	##########	12,710.3	218
2001Q3	##########	12,670.1	219
2001Q4	##########	12,705.3	220
2002Q1	##########	12,822.3	221
2002Q2	##########	12,893.0	222
2002Q3	##########	12,955.8	223
2002Q4	##########	12,964.0	224
2003Q1	##########	13,031.2	225
2003Q2	##########	13,152.1	226
2003Q3	##########	13,372.4	227
2003Q4	##########	13,528.7	228
2004Q1	##########	13,606.5	229
2004Q2	##########	13,706.2	230
2004Q3	##########	13,830.8	231
2004Q4	##########	13,950.4	232
2005Q1	##########	14,099.1	233
2005Q2	##########	14,172.7	234
2005Q3	##########	14,291.8	235
2005Q4	##########	14,373.4	236
2006Q1	##########	14,546.1	237
2006Q2	##########	14,589.6	238
2006Q3	##########	14,602.6	239
2006Q4	##########	14,716.9	240
2007Q1	##########	14,726.0	241
2007Q2	##########	14,838.7	242
2007Q3	##########	14,938.5	243
2007Q4	##########	14,991.8	244
2008Q1	##########	14,889.5	245
2008Q2	##########	14,963.4	246
2008Q3	##########	14,891.6	247
2008Q4	##########	14,577.0	248
2009Q1	##########	14,375.0	249
2009Q2	##########	14,355.6	250
2009Q3	##########	14,402.5	251
2009Q4	##########	14,541.9	252
2010Q1	##########	14,604.8	253
2010Q2	##########	14,745.9	254
2010Q3	##########	14,845.5	255
2010Q4	##########	14,939.0	256
2011Q1	##########	14,881.3	257
2011Q2	##########	14,989.6	258
2011Q3	##########	15,021.1	259
2011Q4	##########	15,190.3	260
2012Q1	##########	15,291.0	261
2012Q2	##########	15,362.4	262
2012Q3	##########	15,380.8	263
2012Q4	##########	15,384.3	264
2013Q1	##########	15,491.9	265
2013Q2	##########	15,521.6	266
2013Q3	##########	15,641.3	267
2013Q4	##########	15,793.9	268
2014Q1	##########	15,757.6	269
2014Q2	##########	15,935.8	270
2014Q3	##########	16,139.5	271
2014Q4	##########	16,220.2	272
2015Q1	##########	16,350.0	273
2015Q2	##########	16,460.9	274
2015Q3	##########	16,527.6	275
2015Q4	##########	16,547.6	276
2016Q1	##########	16,571.6	276
2016Q2	##########	16,663.5	276
2016Q3	##########	16,778.1	276
2016Q4	##########	16,851.4	277
2017Q1	##########	16,903.2	278
2017Q2	##########	17,031.1	279
2017Q3	##########	17,163.9	280
2017Q4	##########	17,271.7	281

CASE: UG 347
WITNESSES: MATT MULDOON
JEFFREY WATSON

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 1309

Cost of Long Term (LT) Debt
CONFIDENTIAL

Exhibits in Furtherance
of Testimony in Support of Stipulation

January 30, 2019

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Security Market News (News Investors Are Seeing)

Exhibits in Furtherance of Testimony in Support of Stipulation

January 30, 2019

Growth Hits 3%; Here's Why It Is Not Yet Sustainable

by Greg Ip, Capital Account Column – WSJ – Oct. 31, 2018

Sustainable' in theory goes on indefinitely. In reality, **finite resources will translate into** a **slowing economy**.

President Trump and his advisers have long argued that their agenda of **tax cuts**, **deregulation** and **new trade deals would deliver sustainable growth of 3%,** far above the sub-2% that independent economists think possible.

Lo and behold, the **economy grew exactly 3% in the 12 months through September**. Mission accomplished?

Not yet. The key word is "**sustainable**," a rate that can in theory go on indefinitely without exhausting finite resources, such as labor, or requiring one-off stimulants. A dissection of what went on in the economy in the past year suggests that the bar **hasn't yet been met**.

Running Out of Workers

If unemployment is falling, then the **supply** of **available workers** is **shrinking** and the economy is running ahead of its long-run sustainable pace, also called potential growth. In the year through September, the unemployment rate dropped half a percentage point to a 49-year low of 3.7%. Mr. Trump justifiably trumpets that milestone as good news, but it runs counter to the claim that 3% growth is sustainable: To keep this up, the unemployment rate would have to go negative in eight years, a mathematical impossibility. In any case, the Federal Reserve would apply the brakes long before to prevent inflation erupting.

To sustain such brisk growth without pushing unemployment lower requires a bigger labor force, which did expand by 844,000 (or 0.5%) in the year through September. But that was far outstripped by nonfarm payrolls, which expanded by 2.5 million, or 1.7%.

The labor-force participation rate (those working or looking for work as a share of the working age population) has hovered at just below 63% since 2014. That is a big improvement over the steady declines in prior years but not good enough: To sustain the current pace of job creation without running out of **workers**, **participation has** to **go up**.

Tax cut demand boost has happened, supply boost elusive

The sweeping personal and **business tax cuts** that Republicans passed last year and took effect in January should show up in two ways. **First**, as take-home **pay goes up**, **people** should **spend** more, generating a **demand stimulus**. **Second**, a lower tax rate on profits and the ability to write off new equipment immediately, instead of over several years, raises the return on new projects. That **should encourage companies** to **invest**, **raising worker productivity**, the **economy's capacity to supply goods and services**, **and** its **growth potential**. Lower taxes might encourage some people to work more too.

The **demand stimulus has happened**. In the first quarter, after-tax incomes jumped 1.8%. At first, Americans saved the tax cut: Saving jumped to 7.2% of disposable personal income in the first quarter of 2018 from 6.3% in the fourth quarter of 2017. Since then, it has fallen back to 6.4%, as **Americans spent their tax cut**.

Eventually this boost will fade. Even without another tax cut Americans could further reduce their saving, but as with unemployment, saving can't fall forever.

Lower tax rates probably will eventually raise investment and potential growth, but it is hard to pinpoint that effect amid countless other forces at work. Capital spending slumped in 2015 and has since reaccelerated in great part because mining, oil and gas investment collapsed then rebounded. That reflects the gyrations of global oil prices and a brief slowdown in China. Excluding mining, oil and gas, business **spending on structures** such as **offices**, **factories** and **stores did jump** in the first quarter, perhaps because of the tax cut, but then cooled. **Spending on equipment doesn't seem to have responded:** It was **solid** from **early 2017** but has **weakened** in **recent months**.

Markets giveth & taketh

Stocks, bonds, interest rates and the dollar all influence economic performance. Rising stocks, for instance, encourage households to spend, while a cheap dollar helps exports and low interest rates boost housing. Economists at Goldman Sachs, who have compiled these financial conditions into a single index, estimate that easier financial conditions helped bolster growth throughout 2017, led by surging stocks. In 2018 that contribution ebbed, as stocks plateaued and then in recent weeks dropped. Combine flat to lower stocks with higher bond yields and a generally firm dollar, and **Goldman estimates financial conditions** are **now subtracting from rather than adding to growth**, and that drag will peak in mid-2019.

There is **good news on long-term growth**, if **not as good as** the **administration hopes**. **Okun's law**, an **economic rule** of thumb that teases out potential growth from changes in output and unemployment, **suggests potential averaged** a little over **1%** from mid-**2009 through mid-2017** and has **since picked up to almost 2%.**

For that, **thank productivity**, or **how much each worker produces in an hour**: It **rose 1.7% in** the **year through September**, according to Macroeconomic Advisers, the best since 2014.

Further improvements may be in store: The oft-promised payoff of robotics, artificial intelligence and other technological breakthroughs is long overdue. Despite worries over tariffs and wobbly stocks, business (especially small-business) confidence remains high, thanks in part to Mr. Trump's pro-business agenda. The Federal Reserve seems to believe unemployment can go somewhat lower without triggering inflation.

So **sustainable growth** may top **2% in coming years**. But absent another tax cut, oil boom, bull market or some other stroke of luck, a slowdown from the last 12 months' 3% pace seems inevitable – no matter the outcome of the next election.

The Eight Best Predictors of the Long-Term Market

by Mark Hulbert – WSJ – Aug. 6, 2018 –Mr. Hulbert is the founder of the Hulbert Financial Digest and a senior columnist for MarketWatch.

Here are the **stock indicators** with enviable track records – and the **cautionary tale** that they tell.

The Stock Market's return over the next decade is likely to be well below historical norms.

That is the unanimous conclusion of eight stock-market indicators with what I consider the most impressive track records over the past six decades. The only real difference between them is the extent of their bearishness, (see chart.)

Of course, it is impossible to say that there aren't other indicators with even better long-term records than these eight. But I'm not aware of any.

To illustrate the **bearish story** told by each of these indicators, consider the projected 10-year returns to which these indicators' current levels translate. The most bearish projection of any of them was that the S&P 500 would produce a 10- year total return of 3.9 percentage points annualized below inflation. The most bullish was 3.6 points above inflation.

Even the **bullish end of** that **range** is more than **3 annualized percentage points below** the **stock market's inflation-adjusted return over** the **past 200 years**.

The most accurate of the indicators I studied was created by the anonymous author of the blog **Philosophical Economics**. It is now as bearish as it was right before the 2008 financial crisis, projecting an inflation-adjusted S&P 500 total return of just 0.8 percentage point above inflation. Ten-year Treasurys can promise you that return with far less risk.

Bubble Flashbacks

The only other time it was more bearish (during the period since 1951 for which data are available) was at the top of the internet-stock bubble.

The blog's **indicator** is based on the **percentage of household financial assets** – stocks, bonds and cash – that is **allocated to stocks**. This proportion tends to be **highest at market tops** and **lowest at market bottoms**.

According to data collected by Ned Davis Research from the Federal Reserve, this percentage currently looks to be at 56.3%, more than 10 percentage points higher than its historical average of 45.3%. At the top of the bull market in 2007, it stood at 56.8%.

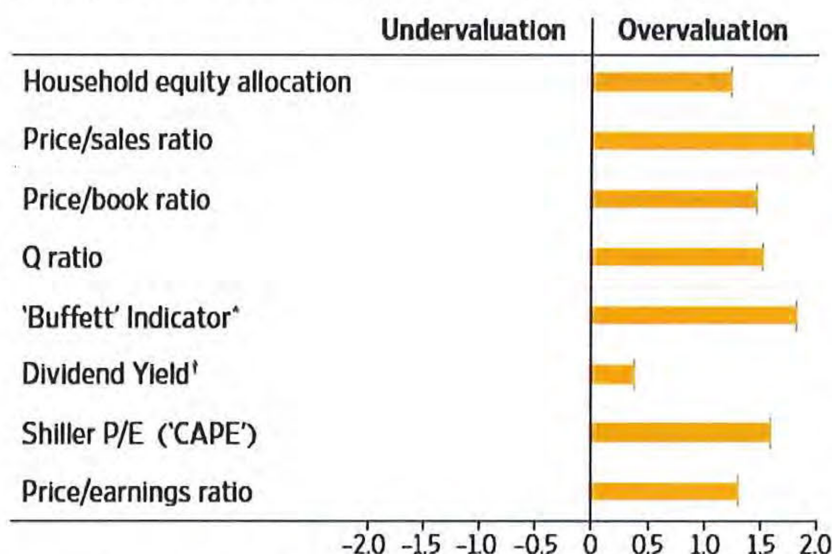
Ned Davis, the eponymous founder of Ned Davis Research, calls the indicator's record "remarkable." I can confirm that its record is superior to seven other well-known valuation indicators analyzed by my firm, Hulbert Ratings.

To figure out how accurate an indicator has been, we calculated a statistic known as the **R-squared**, which **ranges from 0% to 100%** and **measures** the **degree to which one data series explains or predicts another**.

In this case, **zero** means that the indicator has **no meaningful ability to predict the stock market's returns after inflation over the next 10 years**. On the other hand, a reading of **100%** would mean that the indicator is a **perfect predictor**.

Overvalued by Almost Any Measure

Ratio of S&P 500's current reading to average since 1954



*Stocks as percentage of GDP †In case of Dividend Yield, amount by which current reading is below average
Sources: Robert Shiller; Ned Davis Research; www.HulbertRatings.com

THE WALL STREET JOURNAL.

Since **1954**, according to our analysis, the **Philosophical Economics indicator** had an **R-squared** of **61%.** In the messy world of stock-market prognostication, that is statistically significant. Our analysis begins in that year because that is the **earliest date** for which **data** are **available** for **all** of the other **indicators** that we studied.

The Other Seven

So, here's a look at those other indicators back to the 1950s, listed in descending order of their R-squared:

The Q ratio, with an R-squared of **46%.** This ratio – which is calculated by dividing market value by the replacement cost of assets – was the outgrowth of research conducted by the late James **Tobin**, the 1981 Nobel laureate in economics.

The Price/Sales ratio, with an R-squared of **44%,** is calculated by dividing the S&P 500's price by total per-share sales of its 500 component companies.

The Buffett indicator was the next-highest, with an R-squared of **39%.** This indicator, which is the ratio of the total value of equities in the U.S. to gross domestic product, is so named because Berkshire Hathaway Inc.'s Warren Buffett suggested in 2001 that is it "probably the best single measure of where valuations stand at any given moment."

CAPE, the **Cyclically Adjusted Price/Earnings ratio**, came next in the ranking, with an R-squared of 35%. This is also known as the **Shiller** P/E, after Robert Shiller, the **Yale** finance professor and 2012 Nobel laureate in economics, who made it famous in his 1990s book "**Irrational Exuberance**."

The CAPE is similar to the traditional **P/E** except the denominator is based **on 10-year average inflation-adjusted earnings** instead of focusing on trailing one-year earnings.

Dividend yield, the percentage that dividends represent of the S&P 500 index, sports an R-squared of **26%.**

Traditional Price/Earnings Ratio has an R-squared of **24%.**

Price/Book Ratio – calculated by dividing the S& P 500's price by total per-share book value of its 500 component companies – has an R-squared of **21%.**

According to various tests of statistical significance, **each** of these indicators' track records is **significant at** the **95% confidence level** that statisticians often use when assessing whether a pattern is genuine.

However, the **differences between** the **R-squared of the top four or five indicators** I studied **probably aren't statistically significant**, I was **told by Prof. Shiller**. That means you're overreaching if you argue that you should pay more attention to, say, the average household equity allocation than the price/sales ratio

The Bulls' Response

What do the bulls say about all this? To find out, I turned to **Jeremy Siegel**, a **finance professor** at the **Wharton School** of the **University of Pennsylvania**.

Prof. Siegel is perhaps best known as the **author** of "Stocks for the Long Run," in which he argues that buying and holding equities for the long term is the best advice for most investors.

In an interview, Prof. Siegel **questioned** the **strength** of these **indicators' statistical foundation**. He says their historical records contain peculiarities that traditional statistical tests don't adequately correct for. Once corrected, Prof. Siegel suspects that their R-squared would be significantly lower.

Prof. Siegel **also questions whether** these **indicators** are **really as bearish as they seem**. Among the theoretical objections he lodged against these indicators:

Accounting-rule changes in the 1990s. **After** those **changes**, he says, readings from the **traditional P/E** and the **Shiller P/E** were **higher than before**, so their recent levels aren't particularly comparable to those from previous decades.

The **Buffett indicator** has **lost** any **relevance** it may have once had **because of** the **increasing proportion of U.S. corporate sales coming from overseas**. That dynamic also artificially inflates the indicator and makes it appear more bearish than it should be, Prof. Siegel says.

The **Q ratio provided insight** at a time **when our economy** was **dominated by capital-intensive manufacturing companies**, but **not when** it is **dominated by high-tech information-age firms**.

"**What is the replacement cost for a Google or a Facebook**?" **Prof. Siegel asks rhetorically**.

It can't be determined, however, whether correcting for these issues would transform the message of any of these indicators from bearish to outright bullish. Prof. **Shiller of Yale**, for one, says he **isn't aware of any indicator that currently is forecasting above-average returns over the next decade and sports a statistically significant record back to at least the 1950s**.

Regardless, it is important to emphasize that, no matter how impressive the **statistics** underlying the indicators may be, they **don't** amount to a **guarantee** that the **stock market will struggle over** the **next decade**.

After all, as **Prof. Siegel reminds us**, **most of these indicators have been bearish for years now**, **even as stocks** have **enjoyed** one of the most **powerful bull markets** in history.

Furthermore, **even if stocks turn out** to be **lower in a decade's time**, **none of these indicators tells us anything about the path** that the **market takes along the way**. It might immediately head south from here, or it could enter a blowoff phase of sharply higher prices before succumbing to a severe bear market.

A Leaf in a Hurricane

Calling short-term trends is difficult, if not **impossible**. For instance, when it comes to calling one-year returns, **Prof. Shiller said** in an interview that he doesn't know of any valuation indicator with a record extending as far back as the 1950s whose predictive power is significantly better than zero.

Ben Inker, co-head of the **asset-allocatio**n team at **GMO**, draws an analogy to a leaf in a hurricane: "You have **no idea where** the **leaf will be** a **minute or** an **hour from now**. **But eventually gravity will win out**, **and** it **will land on** the **ground**."

Job-Skills Gap May Curb Growth, Report Warns

by Eric Morath – WSJ – Jul. 18, 2018

White House economists have **identified** a potential **stumbling block to maintaining** the **U.S. economy's momentum**: a **lack of well-trained workers**.

The economy appears poised to expand this year at the fastest clip since the recession ended in 2009. That has allowed employers to extend their streak of consistent hiring, which began in 2010, and push the unemployment rate to nearly its lowest level in 50 years.

But there also is a **growing gap between** the **rising number of job openings and** the **number of workers equipped to fill them**, and this **could limit growth in the long run**, **according to** a **paper from** President Donald Trump's **Council of Economic Advisers** released Tuesday.

"There simply aren't enough unemployed workers in the current pool of those looking for work to match the growth in demand for new workers," the paper said.

One problem is the overall size of the pool. A smaller share of adults between 25 and 54 years old are working or looking for jobs than before the recession began in 2007, even though the unemployment rate is lower, at 4% in June.

Another problem, the economists wrote, is many Americans on the sidelines of the labor market need more education or other skills to fill the types of jobs that are being created. The paper found a disproportionate share of those not seeking or holding jobs don't have college degrees, an indication they don't have the advanced skills needed to fill many job openings.

A lack of skills, however, is only one reason many Americans are out of the workforce. Other economists have pointed to other reasons, including the rising cost of child care, the need to care for elderly parents and the opioid crisis.

The White House paper suggests that helping some of those adults who are out of the workforce improve their skills would enable them to seek and get jobs.

Spending on education and training in the **U.S.** is focused **almost entirely on people younger than 25 years old and in school**, the **paper said**. **Relatively little** is **spent during** a person's **working life by employers or** the **government**, potentially leaving them without the ideal skill set for modern jobs, according to the paper.

Many employers are **reluctant** to **provide** that **training**, **fearing** they will **bear** the **cost**, **only to see** their **competitors reap** the **benefits by hiring away** their **skilled workers**, **White House economists said**.

To address the reluctance, Mr. Trump will host an event at the White House on Thursday with large employers and have them sign "a pledge to the American worker" to make significant new investments in training their current and future workers.

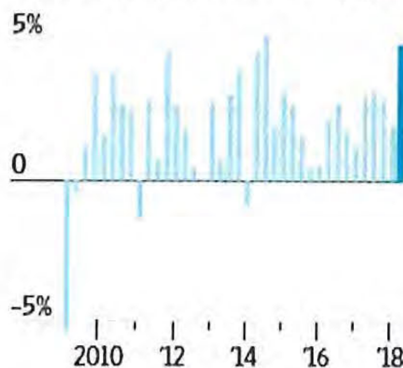
As Economy Grows Strongly, Some Fear Slowdown

by Paul Kiernan – WSJ – Jul. 2, 2018
Harriet Torry and Nick Timiraos contributed to this article.

Heating Up

The second quarter may have been the strongest for the U.S. economy in years. But previous spurts of GDP growth in excess of 4% haven't been sustained.

Annual quarterly GDP growth



Note: 2018 Q1 figures are a projection
Source: Macroeconomic Advisers estimate
THE WALL STREET JOURNAL

The **U.S. economy** has **just completed one of its strongest quarters of this expansion**, **bouncing back from** a **modest first quarter while** the **rest** of the **world appeared to stumble**.

Several closely watched models that track economic output point to the fastest growth since the third quarter of 2014, when the economy expanded at a 5.2% annualized rate.

The **Federal Reserve Bank of Atlanta's** GDPNow model **estimates** a **seasonally adjusted annual growth rate of 3.8%**, while forecasting firm Macroeconomic Advisers' projection says gross domestic product looks to have expanded at a 4.8% rate. Only once in the 35 quarters since the recession ended has GDP growth exceeded the latter pace.

Spending by consumers, businesses and the **government appeared solid in** the **second quarter.** Early data suggest output was further boosted by inventory investment and a **surge in exports**. But economists warn that **output is likely outpacing** the **economy's long-run capacity for growth**, **raising** the **possibility** of a **slowdown next year.**

The **expansion enters its 10th year this month**, building on what is already the **second-longest expansion on record**. Faster growth has helped drive the unemployment rate to its lowest level in 18 years, fueled corporate-profit growth and lifted President Donald Trump's approval ratings.

Analysts have been raising their earnings estimates for publicly traded companies, many of which are due to report results in the next month.

Howard Silverblatt, a senior industry analyst at S& P Dow Jones Indices, said operating earnings – a measure of earnings without some one-time charges and gains – are estimated to have risen 27% from the second quarter of 2017 to $38.65 per share across the S& P 500, thanks to recent federal tax cuts and higher sales. That would mark the third consecutive quarter of double-digit earnings growth for the S& P 500, similar in magnitude to first-quarter growth and faster than 21% growth in the fourth quarter.

The **Trump administration has described** the **pickup as** a **new norm**. "We've entered an investment boom," Lawrence Kudlow, Mr. Trump's top economic adviser, said in an interview. "We're going to get over 4% real GDP in the second quarter and it

looks like we'll have a very strong second half of the year. The story in 2019 is going to be similar."

But the second quarter might instead be a high point in the recent growth spurt. Few outside the White House think the U.S. economy will be able to maintain this pace, in part because of the **country's aging population**.

GDP growth has **averaged 2.2% during this expansion**, with previous bouts of above-trend growth giving way to slower quarters.

It is **unlikely to be different this time around**, some economists say. "**Everyone has growth slowing next year**," **St. Louis Fed President James Bullard said** in an interview last week, **referring to** the **forecasts of** the **15 Federal Reserve officials** who meet to discuss monetary policy. "It's a **temporary blip in growth**."

Fed officials' median estimate calls for 2.8% GDP growth this year, 2.4% in 2019 and 1.8% in the long run.

One of the factors pushing up second-quarter GDP projections was a jump in exports during April and May. The latter month included a 28% year-to-year rise in shipments of food, feeds and beverages.

Economists at Barclays said that could reflect private-sector efforts to get ahead of impending tariff increases on goods such as soybeans and Kentucky bourbon, which U.S. trade partners have identified as targets for retaliatory tariffs. If that is the case, exports could slow in the months ahead as the Trump administration's trade dispute with China, the biggest foreign buyer of U.S. goods, heats up.

Another possible casualty of the trade dispute is business and consumer sentiment, which can affect investment and spending decisions. While sentiment is high by historical standards, the Conference Board said last week its consumer-confidence index fell more than anticipated in June.

Business investment has picked up, but it is unclear if it will be sustained. It rose at a 10.4% annual rate in the first quarter, the Commerce Department said. However, orders for nondefense capital goods excluding aircraft, a forward- looking investment indicator, have failed to post two consecutive months of growth since last fall.

Perhaps the biggest **concern** is that the **economy will overheat**. A **3.8% unemployment rate suggests** the **labor market is** as **tight** as it was in the late 1990s, which coincided with an unsustainable tech boom.

With **inflation at** a **six-year high**, the **Fed's goal** is to **raise interest rates just enough to keep prices from rising faster, but not so much as to smother growth**. It is a **task** that **policy makers have never managed without tipping** the **economy into recession**.

"The **economy** is kind of **bumping up against capacity constraints**," said Ben Herzon, an economist at Macroeconomic Advisers. "We'll just cross our fingers that we don't get a boom-bust scenario."

Base Metals Price Drop Suggests All Is Not Well

by John Lonski, Chief Economist, – Moody's Capital markets Research, Inc.
Jul. 19, 2018

Though it goes practically unmentioned, one of the more unexpected developments of late has been the **stunning collapse of Moody's industrial metals price index**. In part, the industrial metals price index's average of July-to-date is a deep 8.2% under its June 2018 average because of **uncertainties stemming from trade**-related **issues**. Since worries surrounding a trade war came to the fore following June 14's close, the base metals price index has **sunk by 13.0%.**

Nevertheless, the base metals price index's month-long average had **peaked** some time ago **in February** 2018, where the subsequent slide by the index through mid-June reflected a loss of momentum for global industrial activity.

Moreover, the base metals price index's improved performance since 2016 falls considerably short of its strong showing of 2010 and 2011. Though the industrial metals price index's latest 52-week moving average tops its contiguous 52-week moving average of the span-ended July 17, 2017 by 19.9%, it remains 8.8% under its current recovery high for the span ended September 20, 2011. The latter 52-week observation overlapped very brisk annual growth rates for the world economy of 5.4% for 2010 and 4.3% for 2011.

The roughly 10% average annual increase by China's real GDP of 2010-2011 goes far at explaining both 2010-2011's average annualized advances of 4.9% for world economic activity and 27% for the industrial metals price index. By contrast, current consensus expectations call for a **slowing of China's economic growth** from 2017's actual 6.9% **to** 6.6% in 2018 and **6.4% in 2019**. In turn, the **IMF expects** the **world economy to grow no faster than 3.9% in both 2018 and 2019** following 2017's 3.7% increase.

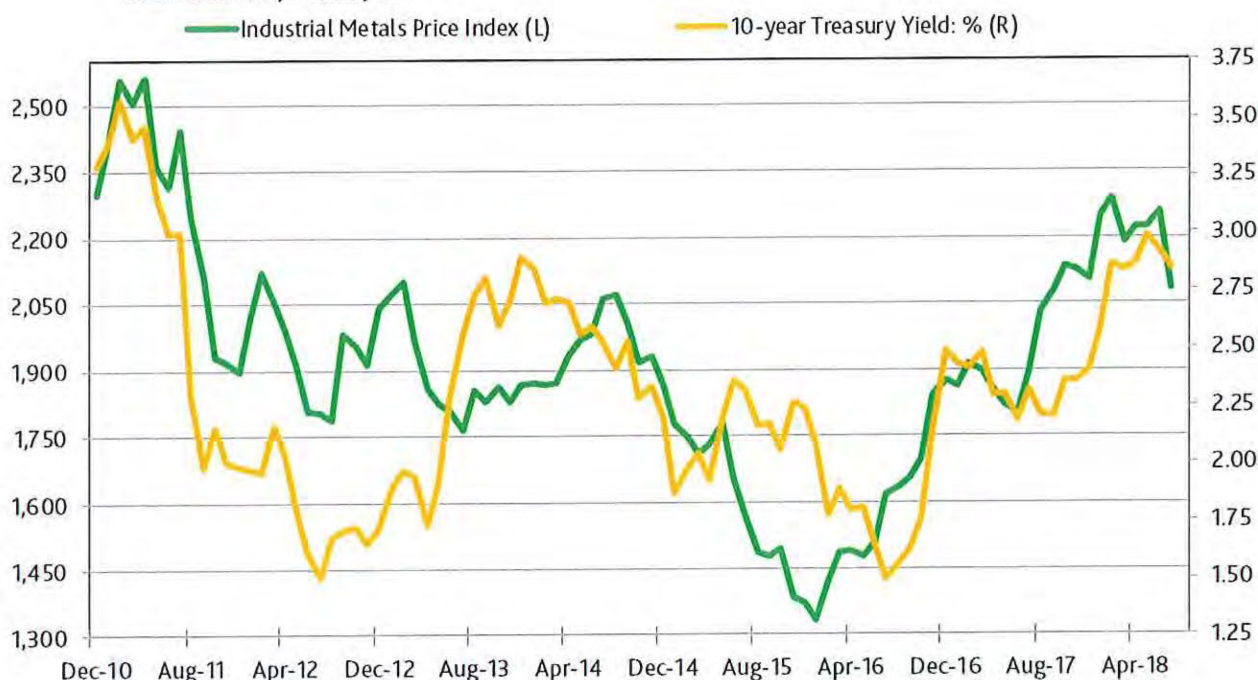
However, a **consensus forecast** compiled by Bloomberg News in mid-**July** projected **slower rates of growth for world real GDP** of 3.7% in 2018, 3.6% in 2019, and 3.3% in 2020. These projections for world growth seem to be **inconsistent** with the accompanying consensus forecast of a steady and uninterrupted **climb by** the **10-year U.S. Treasury yield** from July 19's 2.85% to 3.55% by the end of 2020.

Lower Industrial Metals Price Index May Block Higher Treasury Yields

Throughout the **current business cycle upturn**, advances by the **10-year Treasury yield** have been **difficult to sustain without** an accompanying **upswing** by the **industrial metals price index**. For example, when the 10-year Treasury yield's month-long average peaked for the current recovery at the 3.58% of February 2011, the base metals price index was merely 0.1% under its April 2011 high of the current upturn. In response to a 25% plunge by the base metals price index's moving three-month average from April 2011 to December 2011, the 10-year Treasury yield's accompanying three-month average sank from 3.48% to 2.05%, respectively.

Until the base metals price index approaches its latest high of February 2018, the **10-year Treasury yield is unlikely to remain at or above 3% for long**. In fact, there is a very real possibility that by later this summer, the industrial metals price index may begin to record year-to-year declines, which in the past were often accompanied by year-to-year declines for the 10-year Treasury yield. A year-to-year decline by the base metals price index could arrive fairly soon. For example, July 18's industrial metals price index was less than each of its previous month-long averages starting with August 2017. Over the course of just one month, the industrial metals price index's yearly increase sagged from the 26.2% of June 18, 2018 to the 6.0% of July 18.

Figure 1: Industrial Metals Price Index's Latest Dive Weighs Against an Impending and Extended Stay by 10-Year Treasury Yield Above 3%
source: Moody's Analytics



2015's Bout of Industrial Commodity Price Deflation Swelled Spreads and Sank Equities

The last severe bout of base metals price deflation was linked to problems in China and an earlier run-up by U.S. Treasury bond yields, or the taper tantrum of 2013-2014. After setting a localized peak in August 2014, the industrial metals price index's month-long average would ultimately plunge by a cumulative 35.5% before bottoming in January 2016. In addition, an even deeper 71.0% plummet by crude oil's month-long average price from a June 2014 peak to a February 2016 bottom overlapped the slide by base metals prices.

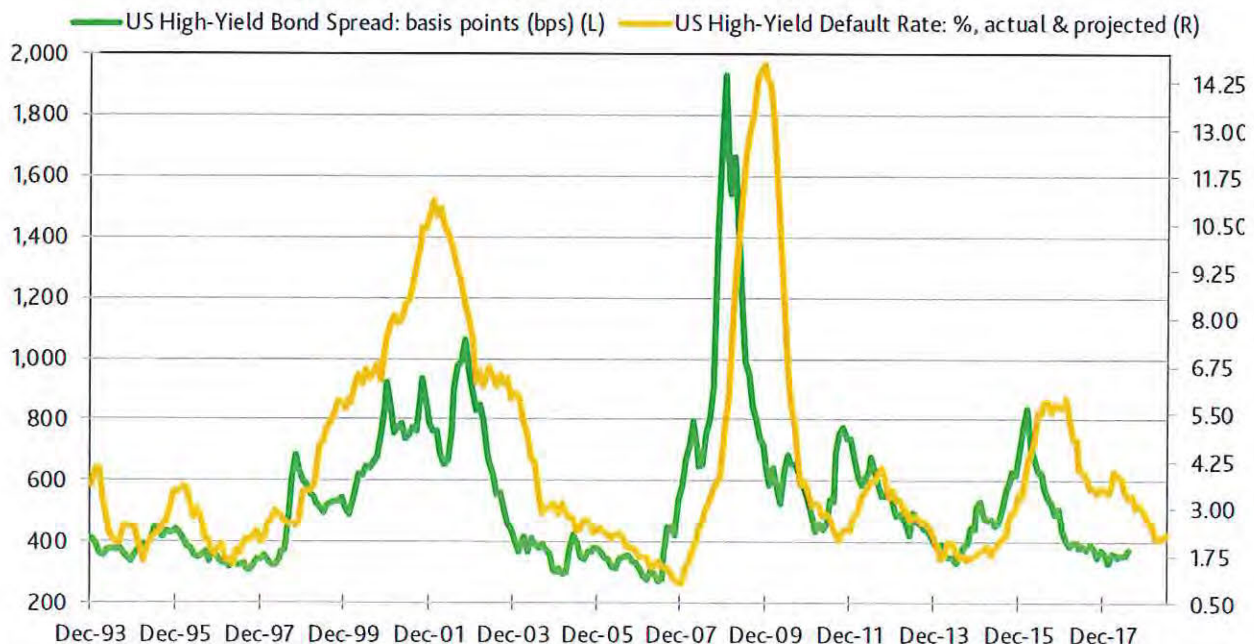
The 2014-2015 episode of industrial commodity price deflation helped to shrink the moving yearlong sum of the pretax operating profits of U.S. nonfinancial corporations by 10.3% from a second-quarter 2015 top to a first-quarter 2017 trough. Even after excluding the especially hard hit petroleum and coal industries, the remaining operating

profits of nonfinancial corporations sank by a cumulative 7.8% from 2015's second quarter to 2017's first quarter.

The combination of industrial commodity price deflation and the shrinkage of profits helped to drive the U.S.' high-yield default rate up from September 2014's now 10.5-year low of 1.6% to January 2017's eight-year high of 5.9%. Moreover, the month-long averages of the high-yield bond spread and the long-term Baa industrial company bond yield spread ballooned from the 331 basis points and the 145 bp, respectively, of June 2014 to the 839 bp and 277 bp of February 2016. In addition, the month-long average for the market value of U.S. common stock sank by a cumulative 12.9% from a May 2015 high to a February 2016 bottom.

A subsequent recovery by operating profits helped to lower the default rate to June 2018's 3.4%. And expectations of a further expansion of profits from current production now lend critical support to a likely continued slide by the default rate to 2.3% by June 2019. Nevertheless, Moody's Default Research Group has upwardly revised its default forecast. The predicted U.S. high-yield default rate for 2019's first quarter has been ratcheted up from 1.9% as of April 2018 to 2.5% as of July. Still the latter would be significantly under the 3.8% average of 2018's first quarter. Not only do expectations of yearly declines by the default rate constructive for corporate credit quality, they also lend support to equity market performance and systemic liquidity.

Figure 2: Moody's Default Research Group's Forecast of Q1-2019's Default Rate Has Been Revised Up from the 1.9% of April 2018 to the 2.5% of July
sources: Moody's Investors Service, Moody's Capital Markets



Profits Growth Keeps Leverage Benign

Today's seemingly **manageable ratio of debt to operating profits can turn ugly in a hurry if operating profits shrink**. Of additional importance is how contractions by

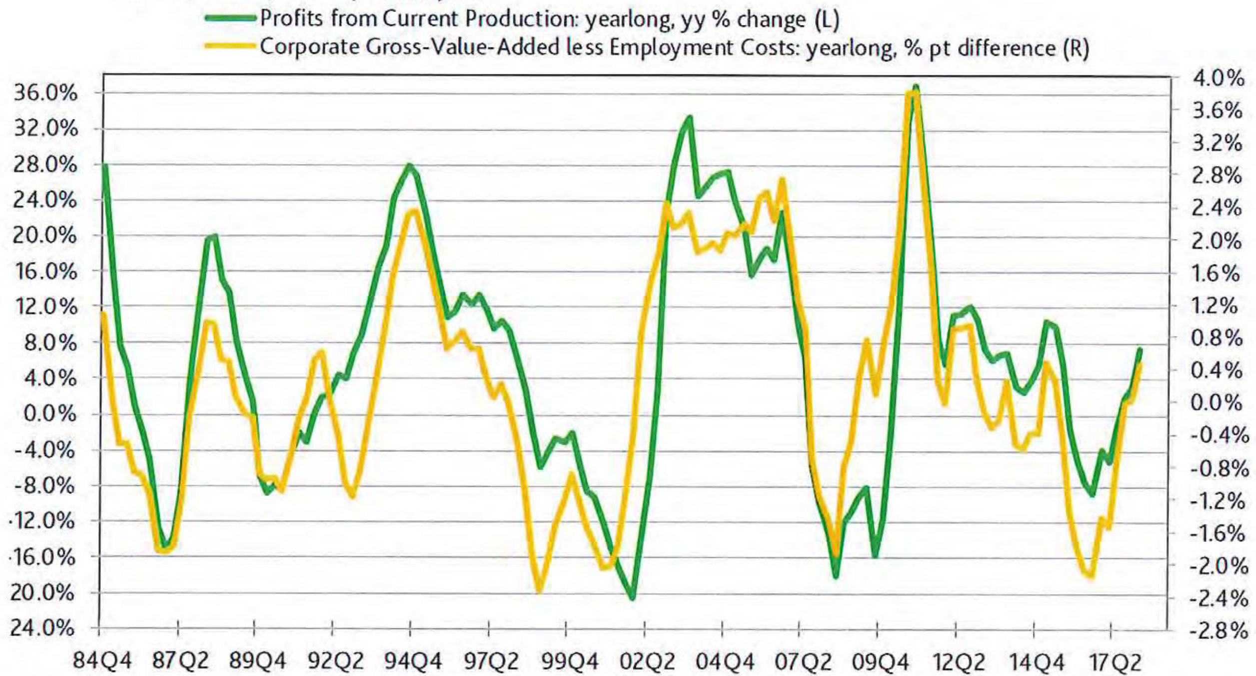
corporate earnings often shrink the market value of the business assets collateralizing outstanding debt. **Systemic liquidity can disappear quickly whenever uncertainty surrounding the underlying value of business assets soars**. A jarring diminution of systemic liquidity is typically accompanied by a deep and widespread plunge in share prices that includes stratospheric readings for the VIX.

When predicting the likely direction of market-wide barometers of corporate credit quality, such as the high-yield default rate, high-yield bond spread and the Baa-grade bond yield spread, the **Bureau of Economic Analysis'** estimate of pretax profits from current production tends to outperform the S&P 500's earnings per share metric and readily available aggregate measures of corporate cash flow. This **proxy for pretax operating income** enters into the calculation of National Income and is **found in** the **GDP** or **National Income Product Accounts under** the formal heading of "**corporate profits with inventory valuation and capital consumption adjustments**."

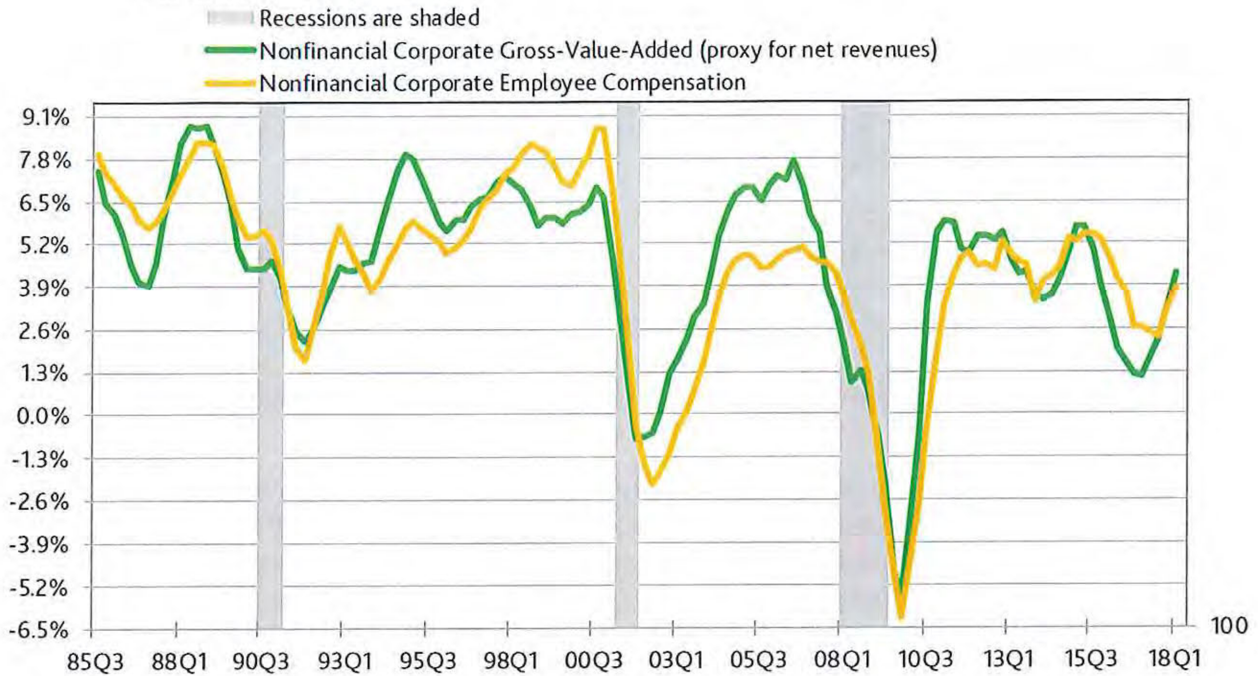
All else the same, profits from current production will increase as corporate gross value added increases and decline as employee compensation or net interest expense increase. You might ask, where are the non-labor input costs? By definition, corporate **gross value added** is a proxy for net revenues. Thus, corporate **GVA** is net of non-labor inputs such as materials and energy. Corporate GVA aims to avoid the double-counting of business revenues and attempts to estimate the value of the final goods and services produced by corporations. For example, to the degree a tariff-induced jump in the cost of steel is less than fully passed on to the prices of final products using costlier steel, both corporate GVA and profits from current production will be lower than otherwise.

In terms of moving year-long averages, the annual percent change of pretax operating profits generates a relatively strong correlation of 0.82 with the percentage point difference between the annual percent changes of corporate GVA less employee compensation. Basically, operating profits expand more rapidly the faster corporate GVA grows relative to employment costs.

Figure 3: In terms of Annual Growth Rates, Operating Profits Are Highly Correlated with the Difference Between Corporate Gross-Value-Added Less Employment Costs
sources: BEA, Moody's Analytics



For the year-ended March 2018, nonfinancial-corporate operating profits advanced by 7.2% annually as a 4.3% increase by GVA, or net revenues, outran an accompanying 3.8% increase by employee compensation. By contrast, operating profits shrank when the deceleration by GVA's yearlong growth rate from June 2015's 5.7% to March 2017's 1.1% was more pronounced than the accompanying slowdown by employee compensation from 5.5% to 2.6%.



The avoidance of a disruptive contraction by operating profits requires sufficient growth by net revenues relative to employee compensation. For only the first quarter of 2018, net revenues' 5.4% yearly increase outran employee compensation's 5.0% yearly rise by enough to lift operating profits by 9.7% from a year earlier. Given the risks now facing international trade and business activity's loss of momentum outside the U.S., companies might be expected to do more to prevent a further acceleration of employee compensation.

Base Metals Price Slump May Dispute Benign Default Outlook

by John Lonski, Chief Economist – Moody's Capital Markets Research, Inc.
Aug. 16, 2018

New signs of industrial commodity price deflation have grabbed the attention of financial markets. Nevertheless, the latest slide by Moody's industrial metals price index has yet to even remotely approach its 26.1% average year-over-year plunge of the six-months-ended January 2016.

The **two major takeaways** from the latest slide by base metals prices are (i) **global industrial activity has subsided** and (ii) **any stay by the 10-year U.S. Treasury yield above 3% will be short-lived**. The widespread depreciation of emerging market currencies versus the dollar has not only put downward pressure on the prices of internationally trade commodities, it has also added to the domestic currency cost of repaying the dollar-denominated debt obligations of emerging market borrowers.

August 15's 3.5% daily plunge by Moody's industrial metals price index to its lowest close since July 24, 2017 was the deepest one-day drop since the 3.9% decline of November 23, 2015. Moreover, the year-to-year percent change of the **industrial metals** price index has undergone a striking deterioration. In less than three months, the **base metals price index** has **gone from being up by 32.3% yearly on June 6, 2018 to being down by 5.3% annually on August 15**.

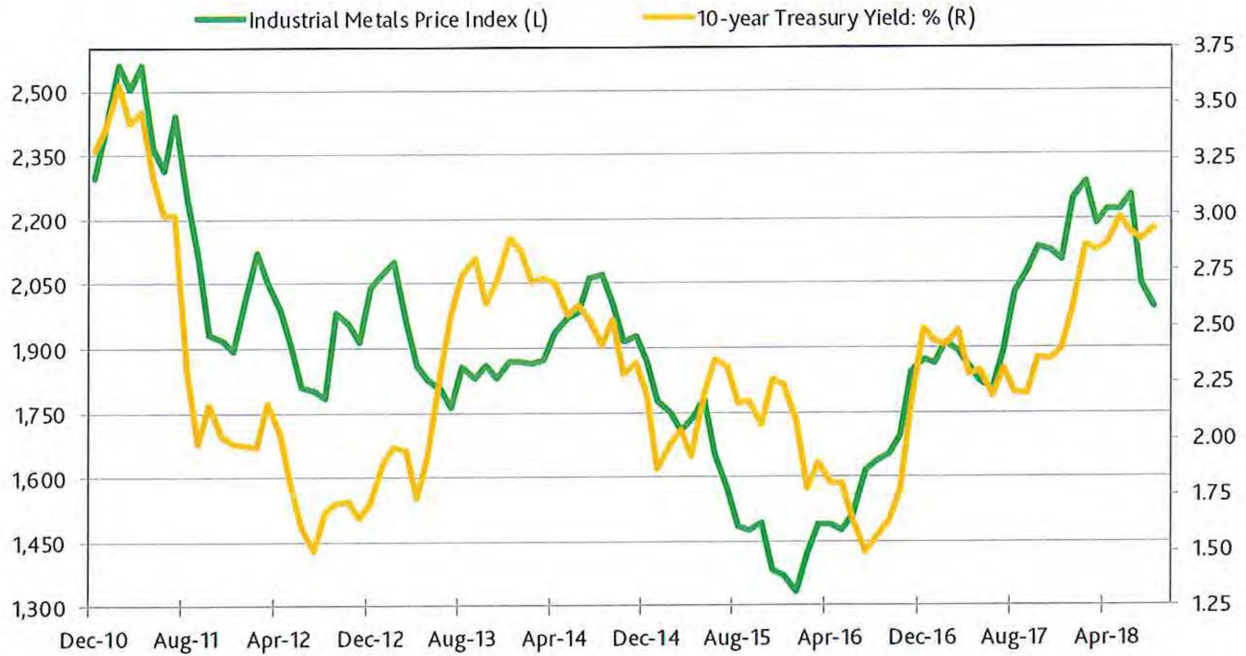
Lower Base Metals Prices Now Rein In Treasury Yields

A lasting ascent by the 10-year Treasury yield to 3% and beyond probably requires the support of another noteworthy climb by the base metals price index. In the event that the industrial metals price index softens further, a 3% benchmark Treasury yield may be unattainable.

As derived from an examination of yearly percent changes by month-long averages beginning with December 1985, the 10-year Treasury yield recorded an annual decline in 100, or 89%, of the 114 months showing an annual drop by the base metals price index of 5% or deeper. For example, when the base metals price sank by 5% or deeper in each of the 17 months ended June 2016, the 10-year Treasury yield's accompanying average also fell annually in 15 of the 17 months.

On the other hand, the 10-year Treasury yield's month-long average exceeded that of a year earlier in 109, or 58%, of the 189 months in which the base metals price index increased by at least 5% annually. When the base metals price index recently increased by at least 5% annually in each of the 24 months ended July 2018, the 10-year Treasury yield rose year-to-year in 20 of those months.

Industrial Metals Price Index's Latest Dive Weighs against an Impending and Extended Stay by 10-Year Treasury Yield Above 3%



BlackRock Squeezed as Investors Pivot

by Asjylyn Loder – WSJ – Jul. 17, 2018
Sarah Krouse contributed to this article.

Investors radically slowed the **torrent of cash flowing into** investment giant **BlackRock** Inc. **this spring**, a sign that a changing global economy and trade rifts may be **unsettling** a **decade-long embrace of passive stock investing**.

BlackRock said Monday it **received $20 billion in net inflows in** the **second quarter**. **While** the sum is **enormous**, it was **down from more than $100 billion a year ago**. BlackRock is the **world's largest asset manager** and a bellwether of low-cost index-based investing.

BlackRock isn't alone: For the first six months of 2018 the amount of **money going into all U.S. passive mutual funds and exchange-traded funds was down 44% from** the **same period a year earlier**, according to research firm Morningstar.

Just as the simplicity of index ETFs made it easy and cheap for investors to load up on a broad exposure to the stock markets, it allows them to move money quickly at a time when many are questioning the longevity of the bull market.

BlackRock Hit in Shift of Funds

ETFs package stocks, bonds or other assets into a single share that, unlike mutual funds, can be bought and sold on an exchange just like shares of Apple or Amazon.

To be sure, money is **still coming in to BlackRock and** its **peers**. Yet if anxiety deepens and markets begin to decline, the slowdown shows these companies could suffer outflows.

For now, there have been only small signs of investor unease in U.S. markets. The **S&P 500 is up 4.7% this year** while the tech-heavy Nasdaq Composite has gained 13.1%.

"If it turns into a big, bad bear market, then I think we could see outflows from ETFs," said Craig Siegenthaler, an analyst at Credit Suisse Group AG. "There's been a lot of hot money that's gone into equity ETFs in the past five years."

In an interview Monday, **BlackRock Chief Executive Larry Fink** said the slowdown reflected growing investor uncertainty amid **political upheaval in Europe and** worsening skirmishes over **tariffs**.

"One of the foundational components of international investing is that globalization is good for the world and for world global markets," Mr. Fink said.

The slowdown at BlackRock, one of the landmark winners of the post-financial-crisis world, comes as many analysts and investors are on the lookout for signs of an end to the unprecedented rise of low-cost, passively managed funds.

Such a move would reshape markets and the global economy given that for much of the **past decade, investor cash** has **surged into BlackRock and** fellow passive investing giant **Vanguard** Group. The **two companies hold more than $11 trillion** in

assets combined, collecting it **from institutional investors like banks**, **pensions and hedge funds**, **as well as from individuals**.

The slowdown in the $3.6 trillion ETF industry has been particularly noticeable after last year's record gains. Investors poured $123 billion of new cash into U.S. ETFs in the first six months of 2018 – down by about half from the same period last year, according to data from Morningstar Inc. **Inflows into Vanguard** ETFs also **slowed**, while **State Street** Corp.'s ETF business has seen **net outflows**, according to Morningstar.

Risk aversion was apparent across BlackRock's businesses. Investors bailed out of equities and sought the relative safety of bonds, especially as rising returns on short-term debt investments sweetened the appeal.

Mr. Siegenthaler noted that pension funds and sovereign-wealth funds were both cutting back on stocks in favor of less risky assets. Institutional investors yanked $21 billion in the second quarter from BlackRock stock-index products that seek to match market benchmarks rather than beat them, and instead invested $7.2 billion in products that track bond indexes, BlackRock reported.

Retail investors acted similarly, pulling $1.6 billion from BlackRock equity strategies while buying $6.2 billion in bond investments.

Speaking generally, Jeffrey Costa, a trust and investment officer at First County Advisors in Stamford, Conn., said his mostly retail clients have been rattled by the escalating tariffs.

"The biggest anxiety I'm seeing is new cash," said Mr. Costa, referring to clients with money to invest who are afraid that they are too late in the current economic cycle to enjoy gains from the stock market.

In all, investors pulled $22.4 billion out of BlackRock stock products in the second quarter while buying $26.4 billion in fixed income, the company said.

Mr. Fink said he remains optimistic about the future of ETFs, which he predicted could reach $10 trillion to $12 trillion in assets world-wide by the end of 2023. Flows were also slowed by investors taking advantage of higher returns on money market accounts, and some institutional clients sold stock-index investments to finance share repurchases and mergers and acquisitions, Mr. Fink said.

BlackRock's earnings rose 26% from the 2017 period, while revenue grew 11%. Its shares fell 0.6% Monday to close at $503.96.

Bond Yields Surge, After Strong Data – Signaling Growth Hopes

by Akane Otani – WSJ – Oct. 3, 2018
Sam Goldfarb contributed to this article.

Investors propelled bond yields to multiyear highs Wednesday as robust economic data and an easing of trade tensions across North America sparked fresh optimism about the global growth outlook.

Left: NY Stock Exchange Wednesday.

Wednesday's bond rout sent the yield on the **10-year U.S. Treasury note**, a closely watched barometer of investors' sentiment toward growth and inflation, to its **highest level since July 2011**. Risky assets rallied, propelling the Dow Jones Industrial Average to a record and crude-oil prices to multiyear highs.

Together, the moves suggested investors are once again growing ebullient about future growth, a shift from the more cautious outlook that many held for much of the year.

Fractious negotiations and tariffs imposed between the U.S. and its trade partners had damped investors' optimism about the global economy, keeping a lid on stock gains and Treasury yields. Investors also cited risks ranging from tumbling emerging markets to geopolitical tensions in the Euro-Zone as reasons to stay cautious.

Yet many said the deal between the U.S. and Canada late Sunday to revise the North American Free Trade Agreement removed one source of anxiety for the markets, showing the White House was more amenable to negotiating with its trade partners than some had thought.

Adding to the upbeat mood, data Wednesday showed U.S. services-sector activity hit a record in September and private payrolls expanded far more than expected.

Investors expect more strong data Friday, when the Labor Department is scheduled to release its monthly employment report.

"Whether it's job creation, unemployment, wage growth ... just across the board on the various measures of growth, it's strong," said Dan Miller, director of equities at GW&K Investment Management.

Investors are cognizant that **risks remain**, particularly outside of the U.S. International Monetary Fund Managing Director Christine Lagarde warned Monday that the group's official economic forecasts have "become less bright."

Yet so far, many believe the U.S. is on strong enough footing to power on – a contrast to 2015, when investors had worried that signs of a slowdown in China were possibly a prelude to a U.S. recession.

Combined with investors' hopes that the U.S. will ultimately reach a trade agreement with China, and "you can now look to 2019 with some greater confidence in

both the growth of the economy, the growth in profits and the sustainability of those profits," Mr. Miller said.

The S&P 500 rose 0.1% to 2925.51 Wednesday, while the Dow industrials added 0.2% to 26828.39, boosted by shares of banks and manufacturers. U.S. crude oil for November delivery jumped 1.6% to $76.41 a barrel, settling at its highest level since November 2014 and driving up inflation expectations.

Treasurys weakened as investors bet on stronger growth and inflation, which could spur a faster pace of interest-rate increases from the Federal Reserve. The yield on the benchmark 10-year U.S. Treasury note climbed to 3.159% from 3.056% Tuesday, settling at its highest level since July 2011 and notching its biggest one-day rise in more than a year. Yields rise as bond prices fall.

Yields on shorter-term debt also climbed, showing investors' growing expectations for interest-rate increases. The yield on the two-year Treasury note, which is often sensitive to changes in expectations for Federal Reserve interest-rate policy, rose to a 2018 high of 2.860% from 2.815% Tuesday.

"We've seen the economy able to beat some pretty impressive expectations at every measure," said Michael Lorizio, senior trader at Manulife Asset Management. That has helped drive up inflation expectations, as well as distill a higher degree of confidence that the Fed will be able to keep raising interest rates at its current slow but steady pace, Mr. Lorizio said.

So far, analysts have largely regarded the gradual uptick in inflation and interest rates as a testament to the strength of the U.S. economy, not as an imminent threat.

"There's **no reason** to **think** that the **probability of** a **recession in** the **next year** or **two** is **at all elevated**," **Fed Chairman Jerome Powell said** last week at a conference of business leaders.

Yet many remain wary, saying the Fed raising rates too quickly is the largest threat to the nine-year-old bull market in stocks.

The yield on the **10-year Treasury is used** as a **reference** for **everything** from **auto loans to mortgages**. As borrowing costs continue to climb, some investors worry key areas of consumer spending will falter – something that could accelerate the end of the cycle.

Data already have shown some fault lines in the housing and auto sectors. Sales of existing homes fell in August for a sixth consecutive month, pressured by a combination of rising mortgages and a lack of inventory.

Major auto makers ranging from Ford Motor Co. to Nissan Motor Co. reported on Tuesday that U.S. sales slid in September.

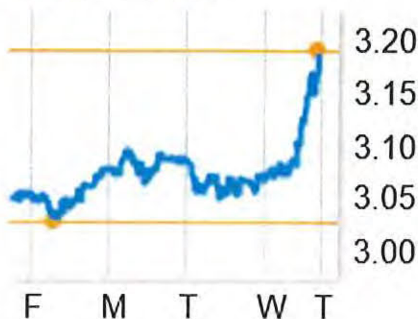
Still, the strength of the broader economy has helped offset investors' concerns about areas that have stumbled. And some believe that bond yields, which are now approaching the upper range of where many analysts had forecast they would end the year, may struggle to keep rising at their current pace.

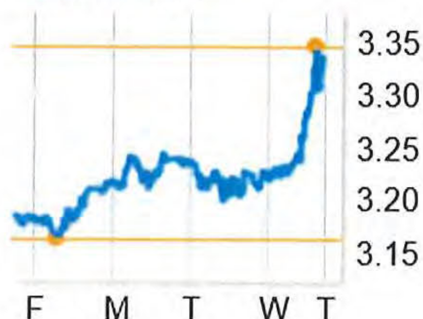
Higher bond yields can draw buyers back into the market, especially with yields in other developed markets remaining relatively low.

"The [U.S.] data is broad, deep and sustainable," Mr. Miller said, adding that he believes the economic cycle has shown it has plenty of room to run.

Government Bonds	4:59 PM EDT 10/03/2018	
	PRICE CHG	YIELD%
U.S. 3 Month	0/32	2.230
U.S. 2 Year	-4/32	2.876
U.S. 5 Year	-14/32	3.047
U.S. 10 Year	-1 0/32	3.185
U.S. 30 Year	-2 5/32	3.336
Germany 2 Year	-3/32	-0.517
Germany 10 Year	-16/32	0.476
Italy 2 Year	11/32	1.212
Italy 10 Year	1 4/32	3.305
Japan 2 Year	0/32	-0.113
Japan 10 Year	-4/32	0.142
Spain 2 Year	0/32	-0.171
Spain 10 Year	1/32	1.537
U.K. 2 Year	-3/32	0.843
U.K. 10 Year	-15/32	1.442

Source WSJ





Bull Market Set to Become Longest

by Michael Wursthorn and Akane Otani – WSJ – Aug. 22, 2018

"**Bull markets start at terrible times**" according to Ken Brown, editor of 'Heard on the Street' for the Wall Street Journal and "**bull markets end during periods of euphoria**".

The longest bull market ever in the S&P 500 has featured widespread gains, in contrast to the technology-led boom of the 1990s.

Previous longest: Oct. 11, 1990– March 24, 2000

Current: March 9, 2009–

Other bulls

Current; 2002-07; 1987-90; 1982-87

S&P 500 sector performance then and now

	1990-2000 RUN	CURRENT RUN
Consumer discretionary	445%	622%
Consumer staples	175	180
Energy	134	74
Financials	608	461
Health care	338	317
Industrials	357	388
Information technology	1,697	540
Materials	133	240
Telecommunications	300	80
Utilities	64	139
Real estate	Note: No classification for real estate sector during 1990-2000 run	366

Sources: Dow Jones Market Data (S&P 500); FactSet (sectors)

THE WALL STREET JOURNAL.

U.S. stocks are on the **verge** of surpassing their **longest-running rally**, ratifying a market rebound that began in the ashes of the financial crisis and defying those who have questioned its staying power.

Wednesday will mark 3,453 days since the **S&P 500 hit its low of 666 on March 9, 2009**. **Since then**, the broadest U.S. blue-chip **index** has more than **quadrupled in price terms**, creeping within striking distance of its January record and outpacing most rival major global indexes.

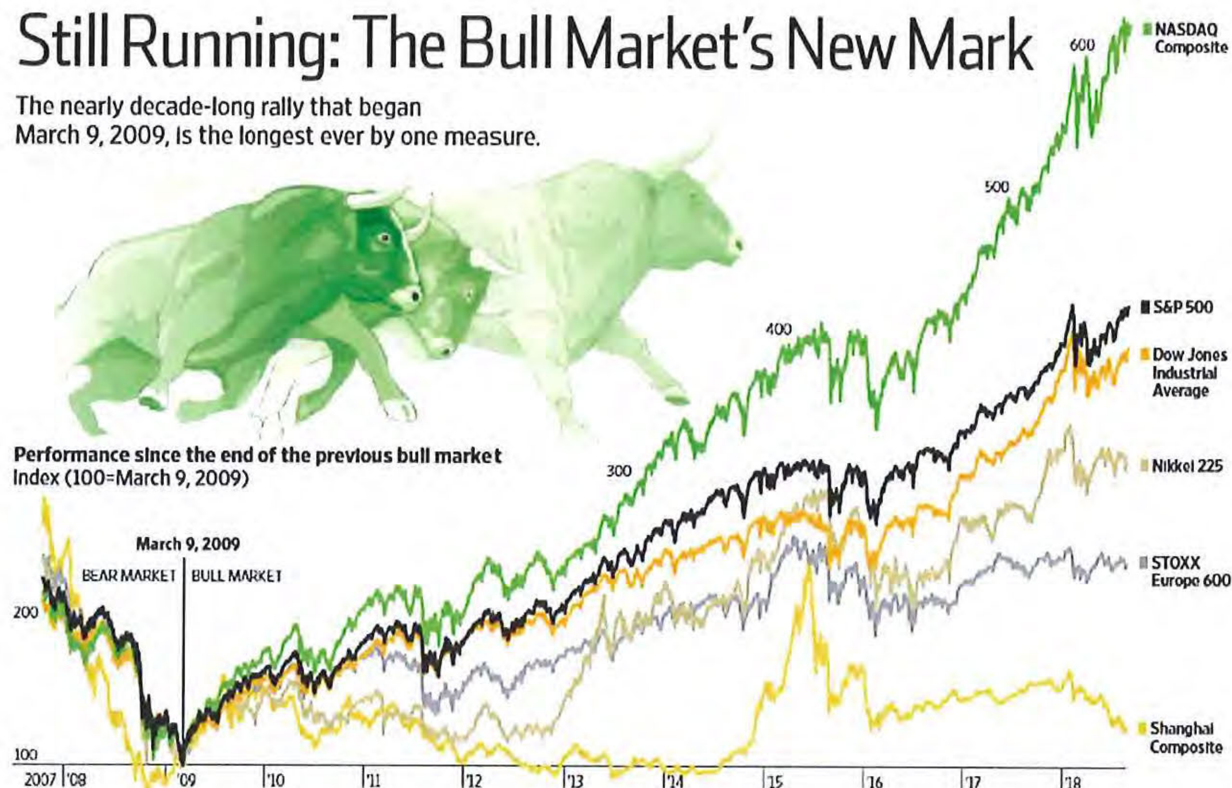
The S&P tied the length of the longest bull run —set between 1990 and 2000 — on Tuesday after the index rose to its first intraday record in nearly seven months. The

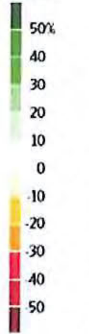
S&P pared those gains later in the session to close up 0.2% at 2862.96, putting it just 0.3% from its previous closing high, 2872.87, set Jan. 26.

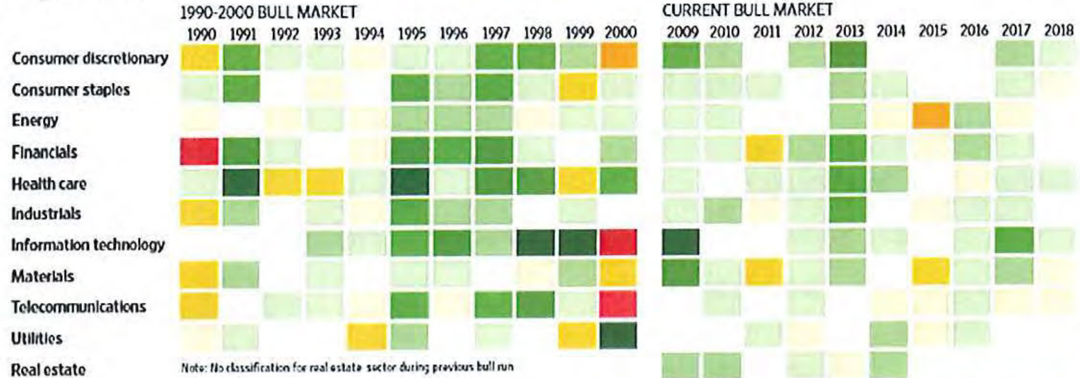
The Dow Jones Industrial Average rose 63.6 points, or 0.2%, to 25822.29.

Tuesday's intraday S& P record shows the U.S. stock advance remains intact after nearly seven months of mostly sideways trading, traders and analysts said. The latest leg of the bull run for the S& P has been driven by booming economic growth in the U.S., as well as renewed strength in quarterly corporate earnings. Investors have also bet that the global economy will continue to expand at a steady pace even amid turbulence in some emerging markets such as Turkey and Venezuela.

The largest advances in recent months and years have been concentrated in the U.S.







Source: FactSet

Design by Tristan Wyatt and Max Rust, Illustration by Mike Sudal/THE WALL STREET JOURNAL.

Buybacks Dress Up Profits

by Michael Rapoport and Theo Francis – WSJ – Sep. 24, 2018

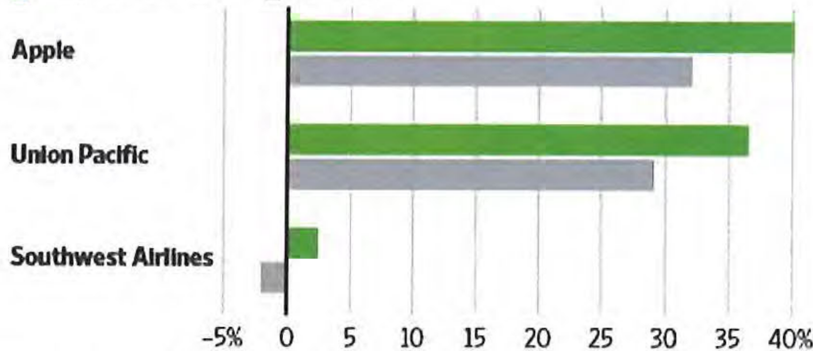
Tax changes spur stock repurchases as **companies move to lift per-share earnings**.

Earnings Adjustment

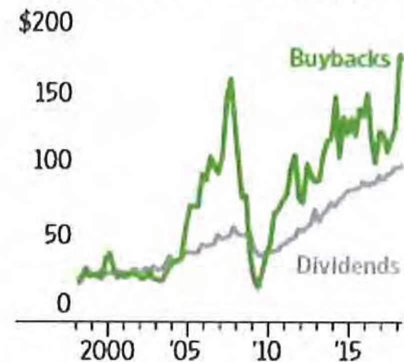
How stock buybacks can improve year-over-year quarterly EPS relative to net income.

Change from previous year in latest quarter

Per-share earnings | Net income



Quarterly dividend and buyback spending for S&P 500 companies*



*2Q 2018 buyback figure is preliminary.

Last December's **tax overhaul** is boosting corporate profits in more ways than one.

The legislation lowered companies' tax bills, improving their earnings. But the change has also **helped** them **fund record stock buybacks** – a move that makes their results appear even better by boosting the per-share earnings they highlight for investors.

S&P 500 companies bought back a **record $189 billion** of their **own shares** in the **first quarter, and** a **similar** number— if not more—is **expected** for the **second quarter**, according to S& P Dow Jones Indices. By contrast, S&P 500 buybacks totaled no more than $137 billion in any of the six quarters before the tax overhaul.

Stock buybacks make profits appear better by boosting per-share earnings, a metric investors frequently use to justify a company's stock price. **Buybacks reduce** a company's **share count**, **spreading** the **profits across fewer shares**. As a result, **companies** can **report** a **bigger** percentage **increase** in **per-share earnings** than the profit results alone may show.

Among the more aggressive companies in buying back stock, Apple Inc. repurchased 112.8 million shares in the quarter that ended in June, contributing 5 cents to its earnings of $2.34 a share. Union Pacific Corp. repurchased about 4% of its shares in the second quarter, helping earnings per share climb substantially faster

than net income. **Thanks to buybacks**, **Southwest Airlines** Co.'s **quarterly** per-**share earnings rose even though** its **profit fell from** a **year earlier**.

For the **S&P 500**, **per-share earnings** in the **second quarter rose about 25% from a year ago** – a **full 2 percentage points faster than net income**, according to data from Thomson Reuters. "It would be **fair to assume** it is **all from buybacks**," **said David Aurelio**, senior research **analyst** at **Thomson Reuters**.

The **higher per-share earnings** have helped **lead investors to pay more for stocks**. The S**&P 500 index** is **posting records** after **gaining about 10% this year**.

"Investors need to realize what they're paying a premium for," said Howard Silverblatt, senior index analyst at S& P Dow Jones Indices.

Left: Southwest Airlines' quarterly per-share earnings rose as a result of stock buybacks even though its profits fell from a year earlier.

In all, dozens of large companies bought back 4% or more of their shares outstanding in the 12 months ended in June, according to data from S& P Dow Jones Indices. The resulting boosts to earnings might seem small in any given quarter, but they add up – Apple's buybacks also added 8 cents a share in the March quarter, for instance. And companies also have started big new buyback programs, suggesting earnings-per share increases will continue.

The buybacks aren't necessarily done for the express purpose of increasing per-share earnings. Many companies say they want to return excess capital to shareholders. Others intend to offset new shares issued to employees as compensation.

The per-share earnings increases generated by stock buybacks are low quality, inflating results without underlying substance, said Gregory Milano, chief executive of Fortuna Advisors, a financial consulting firm that has examined buyback trends. " It has less value."

Companies play down the buyback effect. They say their earnings are strong even without buybacks, and that while the buybacks add to per-share earnings, the effect is clear to investors and baked into the analyst earnings estimates that drive stock prices.

Apple pointed to its past statements that its earnings growth is accelerating and that tax overhaul "enables us to deploy our global cash more efficiently," leading it to put forward plans to create 20,000 U.S. jobs and invest $350 billion in U.S. operations over the next five years.

Union Pacific's buybacks contributed 9 cents to its second- quarter per-share earnings, helping that metric to climb 37%, while net income rose 29% from a year ago. The railroad's finance chief, Robert Knight, said the buybacks "represent the return of excess cash to our shareholders and are consistent with guidance we provided to the financial-analyst community."

Southwest Airlines' second-quarter net income excluding items declined 2.1% from a year ago. On a per-share basis, however, it rose 2.4%, in part because the company has repurchased 28.3 million shares in the past year. Southwest said its per-share earnings growth "has been driven primarily by the strong financial performance of our robust network."

Copper Collapse

by Marley Jay and J. Paschke, AP – Oregonian – Jul. 20, 2018

"**Doctor Copper**" needs a trip to the emergency room.

The price of copper has nose-dived since early June as investors worry that a trade war could slow the global economy. That would lead to less demand for the metal. After reaching $3.30 a pound on June 8, its highest **price** since the beginning of 2014, **copper** has **fallen 18 percent in six weeks**.

Gold and silver futures have also sunk, partly because the dollar has strengthened as **trade** war **fears** mount. But unlike those precious metals, **copper is seen by investors as** a **single proxy for economic activity because it has so many uses**, including wiring in homes, buildings and electrical equipment, computer chips, magnets and pipes. Some **investors call it "Doctor Copper" for** its **ability** to **almost predict** the **global economy's performance**.

The same problems that have hammer copper prices are also hurting industrial stocks. They face the threat of having to buy more expensive parts while tariffs on their own products could hurt sales. Falling metals prices would also likely reduce demand for mining companies.

Trade Canary?

The price of copper has suffered as investors grew more fearful about a trade war.

Source: HG1 Copper (Comex) per Bloomberg Markets – Precious and Industrial Metals

Credit Spreads – Investment Grade

by John Lonski, Chief Economist – Moody's Capital markets Research Group
Jul. 5, 2018

We see **year-end** 2018's average **Investment Grade** (**IG**) **bond spread resembling** its **recent** 136 **basis points (bp**). As measured by Moody's long-term average corporate bond yield, the recent investment grade corporate bond yield spread of 136 bp exceeds its 122-point mean of the two previous economic recoveries. This spread may be no wider than 140 bp by year-end 2018.

Yearlong 2017's US$-denominated bond issuance rose by 6.8% annually for IG, to $1.508 trillion.

First-quarter 2017's worldwide offerings of corporate bonds showed annual percent increases of 7.7% for IG.

Second-quarter 2017's worldwide offerings of corporate bonds showed an annual percent decline of 6.3% for IG, wherein US$-denominated offerings fell by 6.4% for IG

Third-quarter 2017's worldwide offerings of corporate bonds showed an annual percent decline of 1.6% for IG, wherein US$-denominated offerings dipped by 0.7% for IG.

Fourth-quarter 2017 revealed year-over-year advances for worldwide offerings of corporate bonds of 17.6% for IG, wherein US$-denominated offerings posted increases of 21.0% for IG.

First-quarter 2018's worldwide offerings of corporate bonds incurred year-over-year setbacks of 6.3% for IG, wherein US$-denominated offerings posted sank by 14.4% for IG.

For yearlong 2016, worldwide corporate bond offerings rose by 2.3% annually for IG (to $2.402 trillion). During yearlong 2017, worldwide corporate bond offerings increased by 4.0% annually (to $2.499 trillion) for IG.

The projected annual percent changes for 2018's worldwide corporate bond offerings are +2.1% for IG.

The **financing of acquisitions and shareholder compensation will stand out among uses of funds** obtained via bond issues and newly-rated bank loan programs. **Companies will resort to acquisitions** and divestitures in order **to** better **cope with** the **US's subpar recovery**. To the degree companies fear significantly higher **bond** yields, **pre-fundings will rise**.

US economic outlook

The **consensus** expects that the mid-point for the **federal funds rate** should **finish 2018 at 2.125%**. In view of the considerable underutilization of the world's productive resources, low inflation should help to rein in Treasury bond yields. As long as the global economy operates below trend, the 10-year Treasury yield may not remain above 3% for long. A fundamentally excessive climb by Treasury bond yields and a

pronounced slowing by expenditures in dynamic emerging market countries are among the biggest threats to the adequacy of economic growth and credit spreads

Dollar Surges amid Political Turbulence Abroad

by Riva Gold and Ira Iosebashvili – WSJ Nov. 13, 2018

Brexit, **Italy's budget** and **Chinese trade tensions** propel the U.S. currency to close at its highest level in over a year

The dollar jumped to its highest level in a year-and-a-half on Monday, propelled by expectations for higher U.S. interest rates and concerns about an **uncertain political landscape in Europe**.

The WSJ Dollar Index, which measures the U.S. currency against a basket of 16 others, was up 0.6% to 91.10, its highest close since March 2017.

Investors have fretted over **signs of a slowdown overseas**, where fractious European politics and **weak Chinese economic data** coincide with trade tensions between Washington and Beijing. Meanwhile, recent data on U.S. wage growth, employment and consumer sentiment have painted a picture of economic health and bolstered the case for the Federal Reserve to continue raising interest rates.

President Trump has complained about the dollar's recent rise and criticized the Fed's rate raises. Higher U.S. borrowing costs tend to make the dollar more attractive to investors.

At the same time, a strong currency makes U.S. products less competitive abroad and dents the profits of multinational companies when they convert foreign earnings into dollars. The Dow Jones Industrial Average fell more than 600 points Monday on concerns over the health of technology companies like Apple.

The **dollar's rally has contributed to sharp declines in oil, copper** and other **commodities**, which are **priced in** the **U.S. currency** and **become more expensive** to **foreign buyers when** the **dollar rises**. It has also curbed a rally in emerging-market currencies, which bounced in recent months after steep drops earlier this year.

Some of Monday's biggest gains for the dollar came against the British pound and the euro in a critical week for both Brexit negotiations and the Italian budget.

The British pound was down 0.9% against the dollar at $1.2851, following reports that the U.K. government's preparations to leave the European Union are close to faltering.

On Friday, U.K. Transport Minister Jo Johnson resigned over the lack of progress in Brexit talks and called for the public to have another say. Weekend media reports also suggested other cabinet ministers expressed doubts about the prime minister's plan.

Meanwhile, the euro fell 1% to $1.1220, its lowest since June 2017. Pressure on the common currency came ahead of Tuesday's deadline for Italy to resubmit its 2019 budget plans to the European Commission. The European Union rejected Italy's draft budget in October as incompatible with the bloc's rules on fiscal discipline, with the

escalating tensions triggering a selloff in the euro and Italian government bonds. Many investors worry that the deadline is likely to pass without substantial changes to the budget, deepening the standoff.

"Brexit and Italian headlines are occurring in an environment of slowing European growth," said Stephen Gallo, European head of currency strategy at BMO Capital Markets, adding that global growth concerns are driving "more demand for dollar-denominated assets."

The dollar was also slightly stronger against the Chinese yuan amid U.S.-China tensions over trade and security.

Major economies such as the euro-zone, China and Japan will likely welcome a strong dollar, as the rallying currency pushes down the euro, yen and yuan. Cheaper local currencies make it easier for central banks abroad to stoke growth and spark inflation.

Amid a clouding global economic outlook, **U.S. data have remained mostly solid**. Last week, the dollar got a lift after a gauge of U.S. business prices surged in October, with producer prices rising the most since late 2012.

Data later this week are expected to further boost the dollar, with the U.S. Labor Department publishing October inflation and real-earnings figures Wednesday and the Commerce Department releasing retail-sales data for October on Thursday.

With the economy firm, the **Fed is expected to continue raising interest rates this year and next**. Federal-funds futures tracked by CME Group late Monday showed investors were pricing in a roughly **76% chance** of a **rate increase in December**, compared with 72% a week ago.

Vinay Pande, head of short-term investment opportunities at UBS Global Wealth Management, said he is betting the dollar will rise over the next few weeks against the **Canadian dollar**, which has been **hurt by lackluster prices for Canadian oil and** a general malaise in **commodities**.

Average Energy Utility Equity Ratio Edges Higher in 1st Half

by Dennis Sperduto – Regulator Research Associates (RRA)
An affiliate of S&P Global Market Intelligence – Sep. 27, 2018

One of the less apparent **implications** of the **December 2017 tax reform** legislation is that **utility credit metrics** will likely **experience** some **strain due to** the **lower customer rates**, **revenues** and **cash flows resulting from** the **corporate tax rate reduction**. Among other things, the legislation **reduced** the **corporate tax rate to 21% from 35%,** and state regulators have been requiring that the lower tax expense be **passed on to utility customers**. **While rates**, **revenues and cash flows** will be **lower**, **utility debt balances and interest expenses** should **not** have **changed** due to tax reform, **thus** the **pressure on credit metrics**.

Utilities can offset the **credit metrics pressure** in several ways. **One approach** is to **reduce capital expenditures** which while not increasing earnings, cash flow or rates, which would conserve funds and counteract the strain on credit metrics. **However**, data contained in a Regulatory Research Associates Financial Focus report published April 20, "Utility Capital Expenditures Update," indicates that a **pullback** in **utility CapEx** plans has **not** yet **occurred**.

Another approach is that utilities can petition regulators for an **increase** in their **authorized equity returns**. **In addition**, companies can **increase** the **equity components of** their **capital structures**, which, when approved by regulators, would serve to increase rates, earnings and cash flow.

As of June 30, 2018.
Source: S&P Global Market Intelligence

This article examines capital structure data contained in a Sept 20 Financial Focus Quality Measures report for 84 utility operating companies. The data indicates the

average equity component of capital increased slightly for this group of companies, **to 50.2%** at the end of the second quarter from 49.9% at year-end 2017. The six months covered by the Quality Measures report that have elapsed since the new tax law became effective Jan. 1 represent a short time frame in which to evaluate whether any significant trend has emerged. However, the data indicates a slight upward trend may have commenced in the early months of 2018. This nascent trend toward increased equity ratios could garner at least modest momentum in the remainder of 2018, given the anticipated pressure on utility credit metrics flowing from tax reform.

From 2014 through 2016, the average equity ratio increased slightly to 50.1% and then declined in 2017. The 50.2% average equity ratio as of June 30 is the highest the metric has been in the period under review.

In addition, RRA found that **two other metrics** contained in its Quality Measures report, **pretax interest coverage** and **fixed charge coverage**, **did not deteriorate because of tax reform**. The **average pretax interest coverage** for the 12 months ended June 30 versus calendar 2017 **remained at 4.25x**. The **average fixed charge coverage increased to 3.38x from 3.25x**.

Fear Gauge Warns That This Selloff Is Different

by Gunjan Banerji – WSJ – Dec. 11, 2018

Wall Street's fear gauge settled lower Monday after erasing earlier gains – a sign investors are closely monitoring market signals on future volatility and adjusting options positions accordingly.

The **Cboe Volatility Index**, known as **VIX**, fell to 22.64, snapping a three-session streak of gains. The measure earlier climbed as high as 25.94, putting it on track to surpass a closing high reached in October.

The **VIX** also **closed above** the level of **15 for** the **44th day in a row**, continuing its longest such stretch since March 2016. The streak indicates investors are increasingly preoccupied with broader risks in the equity market and less inclined to use selloffs as opportunities to load up on more shares.

The **measure** is **based on options prices on** the **S&P 500** and **tends to rise when stocks fall**. According to Credit Suisse Group AG, recent options prices on the S&P 500 indicate investors have been ramping up their expectations of volatility throughout 2019 – a shift from recent months, when they expected short bouts of turbulence to quickly dissipate.

"This shows that unlike October, investors no longer see the market correction as a temporary dislocation, but rather driven by more persistent macro risks," wrote Mandy Xu, derivatives strategist at Credit Suisse in a note Monday.

Major U.S. stock indexes just finished their worst weeks since March and swung Monday as investors grew increasingly anxious about trade talks with China and the U.K.'s exit from the European Union.

Investors also have been closely watching the bond market for clues on the health of the economy, with one section of the widely watched yield curve – the difference between two-year and five-year Treasury yields—inverting last week. The measure has historically been an accurate predictor of U.S. recessions, with an inverted yield curve preceding every economic downturn since the 1950s.

In another sign of fear, near-term futures contracts tied to the VIX have jumped above those expiring in later months – a signal that investors are bracing for extreme swings in the next couple of weeks

Investors usually price in higher volatility in far-dated contracts since there is greater uncertainty further out in the future. But VIX futures expiring in December have leapt above those expiring in January in recent days.

Such developments in the derivatives market show that investors are recalculating how long the recent volatility in the stock market will persist.

Still, not all signs in the options market point to panic. An options measure called skew, which measures the cost of bearish options relative to bullish ones, on the S&P

500 remains historically low, according to Credit Suisse, indicating there isn't a broad rush by investors to buy stock protection.

Market Volatility Leads to Fresh Focus on Machinery beneath Trading

by Gunjan Banerji and Telis Demos – WSJ – Dec. 11, 2018

Investors struggle to **pivot from calm**, **rising markets to** a period of **lurches in asset prices**.

Wild trading is straining the plumbing that powers global markets.

In **November**, **natural-gas futures surged 18% in one day**, the **biggest jump in more than a decade, only to plunge nearly 17% the following day. That caused some contracts** tied to the fuel **to breach central clearinghouse margin limits**.

And that was just one instance in one market of such breaches. At least **49 times this year, major derivatives contracts globally** – including on U.S. Treasurys and the S&P 500 – have **seen price moves that exceeded margin limits**, according to figures compiled by JPMorgan Chase & Co.

These **breaches** essentially **mean** that the **amount of money traders put up** to **cover potential losses on trades** was **insufficient**, one of several incidents putting a spotlight on how prepared clearinghouses are for the return of volatility.

The uncertainty is yet another example of how investors are struggling to pivot from years of calm, gently rising markets to a new period marked by sudden, big lurches in asset prices. Clearinghouses, operated by companies such as Options Clearing Corp. and Intercontinental Exchange Inc., have become key to post-crisis derivatives markets. If they struggle to handle choppy markets, that could exacerbate already-volatile trading.

To counter that possibility, **clearinghouses are raising margin requirements and adjusting their models** for calculating those requirements. T his has its own issues, though. Clients of the clearinghouse members, which include big banks, may shy away from **some trades** because they **become more expensive**, and traders may be less willing to invest during periods of stress for fear that costs will suddenly rise

Nick Rustad, JPMorgan's global head of clearing, noted the sharp spikes in volatility after long periods of calm, as well as other market changes such as more automated trading. "If we believe that market infrastructure has changed in the last 10 years," Mr. Rustad said, "then the question is whether the margin regime fit for purpose in the past is fit for the future."

Clearinghouses have been around for years, quietly serving as **middlemen between buyers and sellers** of **financial derivatives tied to interest rates, commodities, stocks and more.**

When two traders, such as a bank and a hedge fund, strike a deal for a derivative that pays out in the future, they ask a clearinghouse to stand in for each party. The **clearinghouse collects money from each side**, known as **margin**, that **covers** the **two traders' payment obligations under most possible market price moves**. They

also **collect money** for a **default fund** that would **cover extreme losses**, **or if one party** were **unable to pay**, **using sophisticated mathematical models to calculate these likelihoods.**

The organizations took on a bigger role **after** the **financial crisis**, when investors panicked over whether long-term derivatives contracts with troubled firms would be honored. Afterward, **global regulators crafted rules** to **push banks and their clients to funnel trades through** the **clearinghouses**, as a way to **reduce fear** that a **big bank's failure would ripple through** the **markets**.

The difficulty in calibrating requirements for newly turbulent times brings clearinghouses back into the spotlight.

"Maybe the models that we're employing are not taking into account the **black swan events** that are **becoming more regular over time**," said John O'Hara, New York-based head of prime brokerage and clearing at Société Générale SA.

One extreme example: In September, a Norwegian power trader at Nasdaq Inc. defaulted on its obligations, requiring other members of Nasdaq's clearinghouse to use roughly $122 million from a special fund to cover the shortfall

Advocates say the clearinghouse model has held up, and that it is natural for clearinghouses to make improvements as markets evolve. Clearinghouses also track breaches across their members' portfolios for a wider look at how much risk they are exposed to, which can blunt the impact of any individual contract that exceeds a margin threshold.

"Central clearing works," Edward Tilly, chief executive officer of exchange operator Cboe Global Markets Inc., said at an October industry conference. "I don't want to lose sight of that." **Cboe partly owns Options Clearing Corp**., or **OCC**.

Clearinghouses have been adjusting. Nasdaq raised its margins after the power trader's default. **ICE updated margin requirements** for **natural-gas contracts after** the **November price swings**, its disclosures show.

But clearinghouses can also run into trouble if they raise margin requirements too much. When the Cboe Volatility Index, or VIX, recorded its biggest jump ever in February, OCC's models erroneously demanded a 10-fold increase in margin from some of its clearing members, according to a regulatory filing last month. OCC is seeking regulatory approval to tweak its model.

A spokesman for Chicago-based OCC said the company never actually called for the 10-fold jump in required margin. "We have authority and processes in place" to determine changes in margin, depending on the circumstances, he said in an email.

Still, that sort of mistake could lead to more price swings, because traders might not step into volatile markets if they fear greater margin calls.

CME Group is working on an update to its own model, though a person familiar with the matter said it has been years in the making and isn't directly tied to recent volatility.

As of October, its biggest portfolio-level breach over the past year was $47 million, a fraction of the overall $133 billion in margin held, a second person familiar with CME said. The firm also increased the size of its default fund in the three months ahead of the February surge in volatility.

Regulators say they are watching the issue closely. At a Commodity Futures Trading Commission committee meeting this month, Commissioner Rostin Behnam said in a prepared statement that the agency "is continually confronting the challenge of building and maintaining the appropriate regulatory framework for clearing…that will withstand routine shocks and demonstrate resilience in a crisis."

The Futures Industry Association, which represents banks and other clearinghouse members that are on the hook for losses, last month said clearinghouses should ensure they are putting enough of their own capital at risk.

Nasdaq had to put up roughly $8 million, to members' about $122 million, to cover the Norwegian power trader's default. Nasdaq subsequently posted an additional, temporary injection of about $20 million.

But finding a balance can be challenging. Some argue that if clearinghouses cover a bigger proportion of losses, that could drive too much risk-taking by traders.

Fed Shifts Focus to Risks of Overheating Economy

by Nick Timiraos – WSJ – Jul. 6, 2018

Federal Reserve officials at their **meeting last month signaled** they **could raise interest rates** over the **next year to** a **level that no longer** seeks to **spur growth**, formally **ending** the long post-crisis chapter in which the central bank rewrote its policy playbook to provide **unprecedented economic stimulus**.

In a sign of the economy's changing fortunes, officials intensified their discussions over how to manage rates if growth accelerates so much that unsustainable price pressures or financial bubbles emerge, according to minutes of the Fed's June 12 to 13 meeting released Thursday.

"Some participants raised the concern that a prolonged period in which the economy operated beyond potential could give rise to heightened inflationary pressures or to financial imbalances that could lead eventually to a significant economy downturn," the minutes said.

The Fed raised its benchmark federal-funds rate at the June meeting by a quarter percentage point to a range between 1.75% and 2%, the second such increase this year. **Most** of the **officials penciled in** at least **four rate increases this year, up from three in forecasts released in March**.

The discussions reflected how the economy's recent strength has moved the **Fed** to a point at which it **could soon seek to cool growth**.

"Participants generally judged that ... it would likely to be appropriate to continue gradually raising the target rate for the federal-funds rate to a setting that was at or somewhat above their estimates of its longer-run level by 2019 or 2020," the minutes said.

The officials' discussions framed the big questions shaping policy over the next few years: They **must determine** the **neutral setting** for the fed-funds rate – the **level that neither spurs nor slows growth** – now that **they expect** the **economy to grow faster than** is **sustainable over** the **long run**. **Then** they must **decide how much to push rates above neutral to slow growth** and **prevent** the **economy from overheating**.

The minutes didn't suggest, however, that most officials think they need to pick up the pace of rate increases.

"These minutes don't give the impression that a clear majority is ready now to abandon the idea that the risks are 'roughly balanced' or that 'gradual' rate hikes are no longer enough," said Ian Shepherdson, chief economist at Pantheon Macroeconomics, in a note to clients.

The minutes did reveal one potential source of caution: concern that **trade policy could** hold back business investment and **weaken economic growth** relative to officials' forecasts for a sustained upturn this year and next.

President Donald Trump is in the process of **increasing tariffs** and other penalties against major trading partners, which **could fuel uncertainty** among U.S. businesses that rely on global suppliers and markets for their goods and services.

A **slowdown in trade could hinder business confidence**, weigh on financial markets and reverse a recent synchronized upturn in global growth. The minutes said **some businesses** contacts **have scaled back or shelved** plans for **new investments** amid uncertain trade-policy changes.

Firms Seize Tax Break, Giving Treasurys a Lift

by Ben Eisen and Daniel Kruger – WSJ – Jul. 6, 2018

U.S. companies are **funneling extra money into** their **pension funds** to **take advantage of temporary tax savings**, moves that are **helping suppress yields on long-term Treasurys**.

S& P 500 companies are contributing to pension plans this year at a pace expected to nearly match 2017's level, which at $63 billion was the most since 2003, according to Goldman Sachs Asset Management. Last year's contributions were spurred in part by companies anticipating changes in the U.S. tax-code overhaul.

That and continued contributions this year have been a boon for the Treasury market because **pension funds tend** to **invest** in **long-dated bonds to match** their **long-term liabilities.** The **yield** on the **30-year bond** has been **falling recently**, closing at 2.953%% on Thursday, down from a recent peak of 3.245% in mid-May.

Analysts are pinning the **drop in yields** – which happens as prices rise – partly on **demand from pension funds**. Long-term rates have remained low and U.S. inflation has picked up this year. Inflation poses a risk to bonds, and especially longer-dated ones, because it erodes the purchasing power of fixed-interest and principal payments.

Long-term yields are "very low because people are still putting money into Treasurys," said Torsten Slok, an economist at Deutsche Bank. The **difference between yields** on **30- and 10-year Treasury debt** has **shrunk** to about **0.13 percentage point this week from** about **0.33 percentage point at** the **start of** this **year**.

Voluntary contributions to **pension** funds, which already were brisk last year, have soared recently thanks to the passage of the tax overhaul. This introduced a **window for companies with underfunded plans** to **make additional contributions** and **garner** a **tax benefit**, analysts said.

Firms that contribute **through mid-September** can receive **deductions based on** the **old 35% corporate tax rate, rather than** the **new 21% rate**. A company that contributes $1 million to an underfunded pension plan could have $350,000 in tax savings before the deadline, but would have savings of just $210,000 after September.

Those making discretionary pension contributions include Verizon Communications Inc., which added $1 billion to its pension plan in the first three months of the year, a large enough sum that the telecom giant won't have to make mandatory contributions for eight years, the company said in April. A Verizon spokesman said the tax benefit was a factor in the decision.

PepsiCo Inc. said in April that it made a discretionary contribution of $1.4 billion. Deere & Co. and United Parcel Service Inc. both have cited the tax law as the reason for increasing their voluntary pension contributions.

One sign that pensions have fresh money to pour into U.S. government debt is **strong demand for** what are called **stripped long-term Treasurys**. These securities

are created when **bond dealers split** a **bond into interest-only and principal-only instruments**.

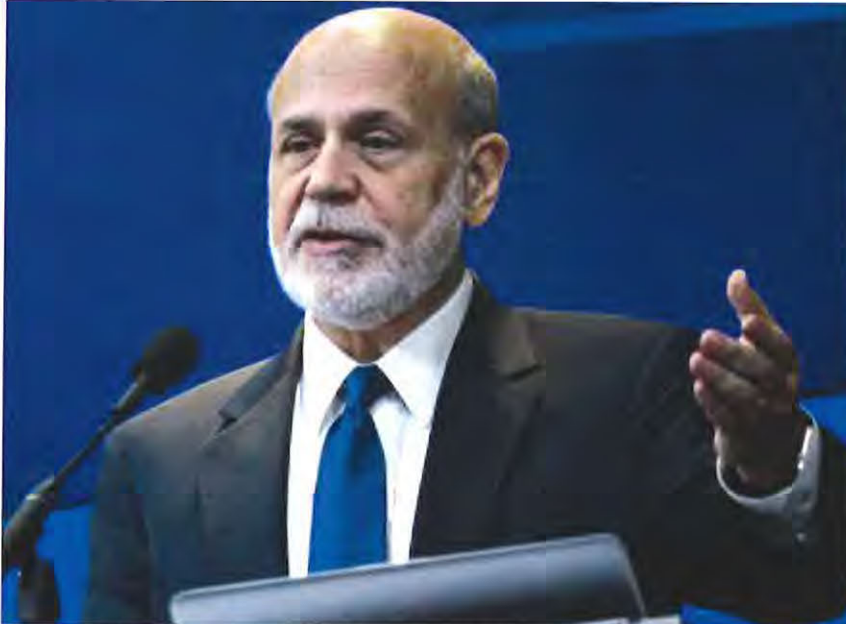
Pension funds often purchase the principal-only instruments, which are akin to zero-coupon bonds, **at** a **deep discount**. They forgo regular interest payments and instead receive the debt's full face value at maturity. This gives pension plans funds when a liability is coming due and provides them with more financial flexibility meanwhile.

The amount of stripped long-term Treasurys rose 9.4% in the first five months of 2018, putting them on track to grow at more than twice the previous year's pace, according to data from BMO Capital Markets. That growth would be the fastest since 2010.

Pension-fund purchases of both principal-only stripped long-term Treasurys and Treasury debt have played a key role in keeping long-term yields low, analysts said. And pension funds' debt appetite may grow in coming months as companies that have been waiting for higher rates make their move before the tax window closes, said Richard Sega, chief investment officer at Conning, who manages money for insurance companies and pension funds.

Former Fed Chief Ben Bernanke Says Economic Outlook Is 'Quite Strong'

by Michael S. Derby – WSJ – Jul 16, 2018



Left: **Ben Bernanke**, the former chairman of the Federal Reserve, remains **upbeat** about the economy's outlook and isn't particularly alarmed by recent bond-market developments many see as hinting at trouble down the road.

"Everything we see about the **near-term outlook for** the **economy** is **quite strong**," Mr. Bernanke told reporters in a roundtable interview Monday with Tim Geithner, a former New York Fed chief and Obama administration Treasury secretary, and Henry Paulson, a former Goldman Sachs banker turned George W. Bush administration Treasury secretary.

Mr. **Bernanke** is currently a scholar at the Brookings Institution in Washington. He led the central bank from 2006 to 2014 and was succeeded by **Janet Yellen**, who was replaced by **Jerome Powell** as **Fed chair**man this year.

The three men met with reporters in New York to take a look back at the financial crisis at a meeting at the Council on Foreign Relations. hose troubles began over a decade ago and all three were intimately involved in leading the response to those events.

The current narrowing, called a flattening, is in large part driven by Fed rate rises and the expectation that more are coming. Meanwhile, still-low inflation and the expectation it will stay that way is one of the factors helping limit the rise in long-dated bonds.

Mr. **Bernanke acknowledged** that an **inversion** is "a **good forecaster of economic downturns**," **but** said the Fed must look at a broad **array of factors** to think about the future of the economy.

"There's an argument" that maybe inversions aren't the signal they once were because long-term interest rates "are unusually low," as is the market-based compensation for risk, Mr. Bernanke said. He added that bond buying by other central banks and regulatory changes are also altering bond-market levels. The **yield curve** "is

one indicator, but you wouldn't want to religiously consider that being the only indicator," Mr. Bernanke said.

The former Fed chair has cast a cautious eye toward the yield curve before, and it turned out to be the wrong call. In 2006, he brushed off a yield curve teetering around inversion and said he wouldn't interpret it as "indicating a significant economic slowdown to come." He also said that "the bottom line for policy appears ambiguous." The economy was in recession by 2007.

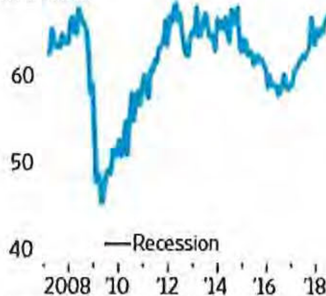
Mr. Bernanke's comments were made a day before current Fed Chairman Jerome Powell began two days of testimony on the economy and monetary policy before congress. Mr. Powell told legislators Tuesday he expects to press forward with gradual rate rises. He cited the "strong performance" of the economy as the reason for the increases, although he did acknowledge there are risks to the outlook, notably on the trade front.

Mr. Powell acknowledged the Fed's interest in the yield curve but didn't offer his assessment about its message for the outlook.

Some Fed officials, like the leaders of the Atlanta and Philadelphia Fed banks, have signaled a willingness to back off on rate increases if they think monetary policy is about to cause an inversion. In an essay posted online Monday, Minneapolis Fed leader Neel Kashkari said bond-market yield levels suggest "there is little reason to raise rates much further, invert the yield curve, put the brakes on the economy and risk that it does, in fact, trigger a recession."

Fresh Data Temper GDP Forecast

by Ben Leubsdorf – WSJ – Jul. 27, 2018



Several forecasters tempered their high expectations for U.S. economic growth in the second quarter based on last-minute data about factory orders, international trade and business inventories.

The Commerce Department on Friday morning will release its first official estimate of second-quarter gross domestic product, a broad measure of the goods and services produced across the U.S. Many economists have predicted Friday's report will show robust growth, perhaps the best quarter in years.

Several reports out Thursday caused some to lower their forecasts.

The Commerce Department reported new orders for durable goods – products designed to last at least three years, such as industrial robots and submarines – increased a seasonally adjusted 1% in June from May. That was smaller than the 3% gain economists surveyed by The Wall Street Journal had expected, though it represented a rebound after two consecutive monthly declines.

The agency separately reported the U.S. trade deficit in goods expanded 5.5% in June as imports rose and exports fell from May, and that wholesale and retail inventories were flat in June from the prior month. Inventory investment and net exports are two volatile components of GDP growth.

On balance, most forecasters saw Thursday's data pointing to somewhat weaker, but still-strong growth, in the second quarter, though they disagreed about specific components.

Forecasting firm Macroeconomic Advisers on Thursday projected a 4.5% seasonally adjusted annual growth rate, down from its Wednesday prediction of 4.9% growth. Economists at JP-Morgan Chase cut their GDP growth forecast to 3.9% from 4.4%. Barclays kept its GDP tracking estimate unchanged at 5.2%. The Federal Reserve Bank of Atlanta's GDPNow model reduced its forecast to 3.8% from an earlier estimate of 4.5% growth.

"While we are trimming down our [second-quarter] growth estimate, [Thursday]' s reports had favorable implications for [third-quarter] growth, adding upside risk to our 2.5%" forecast for GDP growth in the current period, JPMorgan Chase economist Daniel Silver said in a note to clients.

Last month's headline durable- goods number would have looked stronger if not for a pullback in military purchases. Excluding the defense sector, orders were up 1.5% in June from the prior month.

The manufacturing sector has benefited from healthy demand this year, supported by higher oil prices that spurred energy-sector investment as well as solid growth in overseas markets and tax-law changes intended to boost capital expenditures. In the first half of 2018, total durable-goods orders rose 8.4% compared with the year-earlier period. A closely watched proxy for business spending on new equipment, new orders for nondefense capital goods excluding aircraft, rose 0.6% in June from the prior month. In the first six months of the year, orders in the category rose 6.8% from the period in 2017.

GE Credit Slide Rattles Markets

by Matt Wirz – WSJ – Nov. 15, 2018

GE was recently one of the **safest bets** in the **bond market**. **Now**, it is **hurtling toward junk**.

General Electric Co. amassed **$115 billion of debt** on a reputation as one of the U.S.'s safest borrowers. But revelations of losses and questions about its accounting have brought financial markets to a pivotal moment.

GE had a **sterling triple-A credit rating** as recently as **2015**. This month, investors have pummeled its bond prices into junk territory. **Once** a **giant issuer** of **ultrasafe commercial paper**, it **now relies on $41 billion in revolving credit lines from more than 30 banks** – the corporate finance equivalent of a wallet stuffed with credit cards.

GE stock has **lost about half its value in 2018**, and **ratings firms cut** its **credit rating** in recent weeks **to BBB-plus**, **three notches above junk**. **GE's** various **bonds have tumbled** about 5% to 18% since late October, according to Market-Axess, showing that some investors expect further downgrades. Trade in **derivatives protecting against** a **GE default** also **surged** on buying from banks and bond funds.

Newly installed Chief Executive Larry Culp is selling parts of the company to raise cash and slash debt, including Tuesday's announcement that GE would sell a $3.7 billion stake in Baker Hughes, a GE Co., which sent GE's shares up 7.8%.

GE Slide Tests the Market. A slide below investment grade by GE – a name many people associate with safe and boring investing – could reshape the junk-bond market. GE has so much debt that it would become about one-tenth of the $1.2 trillion market, according to data from Fitch Ratings. The shift also would **force fund managers** to **question how well they understand** the **risk in their investments** and potentially hurt prices for other high-yield debt.

"It's a relatively systemic company," said David Meneret, founder of hedge fund Mill Hill Capital, which has been betting against GE by using credit-default swaps, or CDS, since July. "It would be extremely concerning to have that much paper moving from investment grade to high yield."

Bond investors said they are selling in part because **GE's complex financial reporting makes it hard to analyze** if more unexpected losses will be revealed, triggering another sudden downgrade. The company is considering breaking out financial performance of individual subsidiaries to provide greater transparency to investors, a person familiar with the matter said GE management aims to recapture a single- A credit rating through divestitures and by refocusing on its power and aviation manufacturing businesses.

GE became a **bond-market titan in** the late **1990s** when its **triple-A credit rating helped it borrow cheaply to fund manufacturing** and to **raise money for** its **financing arm GE Capital to lend**. The company has cut debt from a peak of $336 billion in 2009 but lost its triple- A rating in 2015.

Its bonds remain widely held by insurers, pensions and mutual funds, many of which have ratings requirements that force them to sell bonds rated below investment grade. A short-term bond fund operated by Vanguard Group owned $1.4 billion in GE bonds as of October, representing 2.4% of its assets, according to data from Morningstar Inc. The fund can invest no more than 5% in junk debt, a spokesman said. MetLife Inc. owned about $300 million in June but has since reduced its holdings, which now make up a fraction of 1% of its investments, a company spokesman said.

Bond prices began their recent fall in **late October** when **GE disclosed $22 billion in unexpected charges tied to** its **power unit** after reporting a **$6 billion shortfall** in **insurance reserves in** the **first quarter**. GE's bonds have been the most actively traded in the U.S. corporate-debt market over the past two weeks with more than $10 billion changing hands, according to MarketAxess.

Some bondholders are purchasing **credit-default swaps**, which pay out if GE defaults, to protect themselves, while hedge funds are buying the swaps in a bet that they will rise in value as the company's fortunes worsen. **Prices** of **GE CDS** roughly **doubled in November** and the dollar amount of swaps outstanding quadrupled to $836 million, the highest amount of any corporate borrower in the world, according to IHS Markit and DTCC Data.

Wall Street banks with lending commitments to GE also are buying CDS to protect loans to the company, according to people familiar with the trades. Banks account for about 10% of the recent GE CDS transactions, one of the people said.

The recent downgrades made borrowing through commercial paper more difficult for GE and the company is increasingly drawing on $41 billion of credit lines provided by more than 30 banks to fund itself, according to its quarterly earnings report. GE's lenders include Citigroup Inc., Goldman Sachs Group Inc. and Morgan Stanley, according to its 2017 annual report.

"We currently are using $2 billion of these facilities as well as the commercial paper market for general intra-quarter working capital needs," said GE's Treasurer Jennifer VanBelle.

The more **GE** borrows from the banks, the more CDS they will buy, pushing the cost of the swaps higher and increasing the perceived risk of default, Mr. Meneret said. **Current CDS prices imply** a **default risk over** the **next five years** of **about 16%,** almost twice the approximately 9% risk implied at the end of October.

GE Ousts CEO John Flannery in Surprise Move after Missed Targets

by Thomas Gryta and David Benoit – WSJ – Oct. 1, 2018
Ted Mann contributed to this article

Left: **John Flannery** was **ousted** as **General Electric's chairman and CEO**.

Deep problems in troubled power unit will cause the company to miss its profit and cash targets for the year; **Larry Culp** is appointed **successor**.

General Electric Co. GE ousted Chief Executive John Flannery after **just 14 months in** the **job**, a **surprise move** as the conglomerate **revealed** that **deeper problems** in its troubled **power** unit would cause a shortfall in its profit and cash targets for the year.

The company named board member Larry Culp, as its new chairman and CEO, effective immediately. Mr. Culp, a former CEO of Danaher Corp. had joined GE's board earlier this year as part of a broader shake-up of the struggling conglomerate.

Shares of GE, which have **tumbled by half** during the **past year after** the **company slashed** its **dividend** and missed financial targets, rallied on the news. In Monday afternoon trading, the stock was up 8% to $12.27.

The GE board held a series of unscheduled calls in recent days and decided to replace Mr. Flannery amid concerns that he wasn't moving quickly enough to address the company's issues, according to people familiar with the matter. Mr. **Culp** is **expected** to continue with the strategy to **spin off GE's health-care business** and **sell two other big units**, these people said, **leaving** the **company focused on** its **power and aviation** units

GE warned Monday it would miss its profit and cash-flow goals for 2018. **GE** also said it planned to take an **accounting charge as large as $23 billion** for its **power business**, which **makes turbines for power plants** and has been **struggling with weak demand**.

Much of the **charge** would be **related** to the **2015 acquisition** of the **power business** of **France's Alstom** SA, one of the people said. The **deal**, intended to bulk up GE's market share, **backfired** as global demand for power generation sharply declined. That left **GE** with factories filled with **extra inventory** and **little cash coming in** from customers.

The board's concerns about Mr. Flannery, 57 years old, came to a head when it learned last week about the potential charge, the people said. " That was kind of the last straw," one person said. In January, Mr. Flannery had surprised investors and directors when GE disclosed a $15 billion shortfall in reserves for a legacy insurance business.

Left: Larry Culp is the first outsider tapped to run GE

Several GE directors, particularly the recent additions, and some members of the company's management, grew frustrated in recent weeks with the slow progress on the breakup plan, people familiar with that matter said. They were hearing from investors and customers about similar concerns, they added.

After a meeting Wednesday, the board approached Mr. Culp first and asked if he was willing to take the job, and formally informed Mr. Flannery over the weekend of the change, the people said. One concern among directors was a feeling that GE's **bureaucracy** created the slowness, a reason the board went with an outsider.

Activist investor Trian Fund Management, which took a large stake in GE in 2015 and holds a seat on the board, has long admired Danaher for its performance and willingness to spin off businesses.

"We will be working very hard in the coming weeks to **drive superior execution**, and we will **move with urgency**," **Mr. Culp said** in a news release.

GE was **once** a **symbol** of **American manufacturing** might but has struggled after the financial crisis forced the company to shrink its big lending business and more recently with weak performance in its industrial units. Earlier this year, GE said it would

essentially break itself apart, **selling off three major units**: **health care**, **transportation** and **oil-and-gas**.

Mr. Flannery, a 30-year GE veteran, was tapped to take over the company in June 2017 after longtime leader Jeff Immelt stepped down on Aug. 1 amid pressure from shareholders. Mr. Flannery's ouster on Monday stunned some inside the company, who had anticipated the possibility of leadership changes given the struggles of the power business – but not a CEO exit.

Mr. Flannery sent a video message Friday to staff where he told them that worries about recent problems with a key power turbine were overblown. "I really want you to come join me and the power team and really fight for the company and fight back on this," Mr. Flannery said.

Upon getting the job, Mr. Flannery began a months-long review of the company, a pace that frustrated some on Wall Street as there were major questions about GE's financial projections and prospects. He provided an update last November that underwhelmed investors.

Following yet another review and the April board restructuring, Mr. Flannery detailed a new strategy in June that focused on the power and energy businesses.

Some outside the company wanted Mr. Flannery to also lay out a vision for the future. While the new CEO was often reaching out for advice, the differing opinions sometimes made it harder for him to reach a final decision, according to people who worked with him.

Mr. Culp, 55 years old, is the **first outsider tapped to run GE**, which has a history of grooming its own leaders and letting them run the company for long stretches. **Former CEO Jack Welch** was **chairman** and **CEO for 20 years**, while Mr. **Immelt** steered GE for **16 years** through ups and downs.

Both Mr. Welch and Mr. Immelt weighed in Monday on the CEO change, thanking Mr. Flannery for his contributions and praising Mr. Culp.

Mr. Welch said Mr. Flannery had inherited a company with "a very difficult balance sheet position" but had worked to outline a "new direction."

Mr. Immelt said the recent troubles in the power business could be addressed by the new leadership team. "This is a business that generated strong earnings and cash flow for many years," he said. "It will recover and regain market leadership."

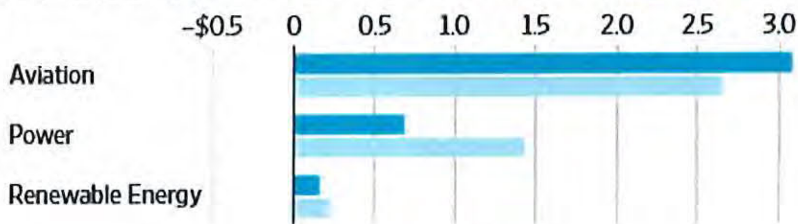
Mr. **Culp** served as **CEO of Danaher** from **2001 until early 2015**, starting in the job when he was only 37 years old. A **devotee of lean manufacturing and deal making**, he led the conglomerate through several major acquisitions. **In his tenure, total shareholder return was 465%, compared with** about **105% for** the **S&P 500** during the same period.

Though far smaller than GE, Danaher under Mr. Culp was a frequently invoked as a model of what a successful conglomerate might be: a tightly focused portfolio of business units whose overlapping interests were well understood by investors.

Power Drain

A sharp drop in profits at GE's power business complicates the company's efforts to reorganize.

Segment profit/loss for the first six months, in billions ■ 2018 ■ 2017



For noncore segments (being sold or spun off)

Source: the company THE WALL STREET JOURNAL.

He joined the GE board in April, part of the revamp that shrank the 18-person board to 12 members and removed many of the longest-serving directors. The current board includes Trian co-founder Ed Garden and former American Airlines **CEO Thomas Horton**, who on Monday was **named lead independent director**.

The new CEO spent his first day in the company's Boston headquarters, calling investors, and he was expected to move quickly to reinforce the June board breakup plan, which he had voted for as a director, the people said. "He feels some ownership of that plan," one person said

Unlike GE, other industrials are trading near their market cap peaks.

GE's accounting charge could be as large as $23 billion for its power business, which makes turbines for power plants and has been struggling with weak demand.

GE Shares Fall Nearly 9% amid Slashed Dividend, SEC Probe

by Carmina Mae Jariel and Ellen Meyers
S&P Global Market Intelligence – Oct. 30, 2018

General Electric Co. **shares fell nearly 9%,** at one point **dipping below $10**, on **Oct. 30 after** the industrial giant announced it would **cut** its **quarterly dividend to** a **1 cent from 12 cents and** that the Securities Exchange Commission **and** the Department of Justice are now **looking into GE's $22 billion goodwill charge for** its **2015 acquisition of Alstom SA**.

GE fell to $9.87 a share at 2:15 p.m on Oct. 30, its lowest price since 2009, amid Wall Street's fears that newly appointed CEO H. Lawrence Culp Jr.'s efforts to generate more cash may not be enough to salvage the company. It closed the trading day at $10.18, down 8.78%, on nearly **5x average trading volume**.

In addition, GE disclosed that the **SEC and DOJ** were **widening their investigations of** the **company's accounting practices** to include the company's the $22 billion charge.

GE announced the noncash goodwill impairment charge on Oct 1, the same day Culp replaced John Flannery as CEO. The charge stems from GE Power's ongoing financial struggles, stemming from assets acquired through the Alstom deal underperforming.

"We know that the Power business has to perform better, and that is what we're going to spend a ton of time on once we get past earnings today," Culp told analysts during GE's Oct. 30 call.

Power Divide

GE plans to **create** a **unified gas business**, comprising the industrial conglomerate's gas product and services groups; **and** a **second unit comprising** the portfolio of GE Power's other assets, including **steam**, **grid solutions**, **nuclear** and **power conversion**. A consolidation of GE Power's headquarters structure is also on the cards.

The announcement marks the first major steps taken under Culp.

"After my first few weeks on the job, it's clear to me that GE is a fundamentally strong company with a talented team and great technology. However, our results are far from our full potential," Culp said in a statement. "My priorities in my first 100 days are positioning our businesses to win, starting with Power, and accelerating deleveraging. We are moving with speed to improve our financial position, starting with the actions announced today."

GE reported a net loss attributable to common shareowners of $22.81 billion, or $2.62 per share, in the third quarter, compared with a net profit of $1.32 billion, or 15 cents per share, in the same period a year ago.

Adjusted EPS fell to 14 cents from 21 cents. The third-quarter S&P Global Market Intelligence consensus estimate for normalized EPS was 20 cents.

Total revenues declined to $29.57 billion from $30.66 billion. Revenues in the power unit plunged 33% year over year to $5.74 billion from $8.53 billion.

Total costs and expenses reached $52.52 billion in the third quarter, up from $32.08 billion a year ago

GE Slashes Payout, Discloses Inquiry; Shares Plummet

by Thomas Gryta – WSJ – Oct. 30, 2018

Embattled conglomerate books **$22.8 billion quarterly loss** on accounting charge **now subject of DOJ probe**. GE has struggled over the past year with **declining sales and profits** that have forced the conglomerate to break itself apart and bring in an outsider.

General Electric Co.'s GE **-8.78%** shares fell **Tuesday after** the **conglomerate slashed** its **dividend to** a **token amount** and said **federal regulators** had **opened** a **criminal probe of** its **accounting practices**, as GE seeks to restructure under new Chief Executive Larry Culp.

In afternoon trading, the **stock** was off 7.8% at $10.29, **losing roughly half its value in the past 12 months**, **during which time GE** was **kicked out of** the **Dow Jones Industrial Average**.

Executives revealed Tuesday the **Justice Department** had opened an **investigation into** the **company's recent accounting practices**, **alongside** an **investigation** that has been **under way at** the **Securities and Exchange Commission**. GE also said the **SEC** had **expanded** the **scope** of its **inquiry**.

Both the Justice Department and SEC are investigating a **$22 billion charge** the company booked in the **third quarter tied to acquisitions** in **GE's power unit**, as well as a **$6 billion charge** in the **first quarter** for a **shortfall** in **insurance reserves**, GE's finance chief Jamie Miller told investors on a conference call Tuesday.

GE reported a **net loss** of **$22.8 billion** in the **third quarter** because of the $22 billion charge, highlighting the depths of the problems facing the company. Mr. Culp took over on Oct. 1 after GE ousted its CEO and warned it would miss its cash flow and earnings goals for the year. **GE didn't provide updated financial projections** Tuesday **but executives cautioned** that GE **would significantly miss** its **previous targets**.

"It is tough for an industrial company to play offense to compete and win with a balance sheet in the condition that ours is in," Mr. Culp said in an interview Tuesday. "That is a long-term issue that we need to address – and we are going to address it in every way possible with a real sense of urgency."

Mr. Culp declined to discuss the regulatory probes but said he had spent his time as a GE director since April and first month as CEO conducting his own due diligence. "I don't think any CEO could ever, should ever, say there is nothing in the wood pile," he said. "I think we've got our arms around a good bit of the company."

Investors had braced for another reduction in the company's once-reliable dividend. The company's **new quarterly dividend will be 1 cent a share, down from**

12 cents. The move will save the company about $3.9 billion a year, and marks a reversal for a **company** that **once** was one of the most **generous dividend payers**.

Deep Cuts:

GE has made three of the biggest dividend cuts since the 2008 financial crisis.

The **126-year old company** has **struggled** over the past year with **declining sales** and **profits** that have **forced** the **conglomerate** to **break itself apart** and **bring in** an **outsider CEO**. But while plans to sell or spin off three major units are under way, **GE's core power business** has **continued** to **deteriorate**.

On Tuesday's conference call, Mr. Culp said the overall strategy set in June "is the right plan going forward" and GE had no plans to sell shares to raise additional capital. However, he said dramatic changes were needed in the power business, which Mr. Culp said he plans to separate into two units. "**Everything is on the table at power**," he said.

Revenue in the power unit tumbled 33% in the latest quarter to $5.74 billion and the unit swung to an operating loss. Overall, GE said revenue dropped 4% to $29.57 billion in the third quarter, as growth in its aviation and energy units offset some of power's decline.

Excluding charges, GE reported earnings of 14 cents a shares. On that basis, Wall Street was expecting adjusted earnings of 20 cents a share with revenue of $29.92 billion, according to Thomson Reuters.

When it switched CEOs earlier this month, GE warned it would take an accounting charge of up to $23 billion for previous acquisitions in the power business, which makes turbines that generate electricity at power plants. The century-old business has suffered from deep losses amid a global drop in demand for power-generating equipment.

The **power division**, which **had been GE's biggest in terms of revenue**, has been at the center of GE's financial and operational woes. The unit has cut thousands of jobs to adjust to the market, but GE has said it will take years to get the division back on track. GE said Tuesday it would cut additional costs by consolidating corporate functions at the power unit.

Ms. Miller said the **company** would "**significantly miss**" its **financial targets** for **2018**, **without providing new forecasts**. She warned **problems** in the power business **would persist longer than expected** and that GE may need to provide additional support to its GE Capital arm.

Earlier this month, GE had warned it would miss its forecast for adjusted 2018 earnings of around $1 a share. Before Tuesday's report, analysts had lowered their adjusted per-share earnings targets, pushing the consensus down to 88 cents, according to a Thomson Reuters. Until last fall, GE had targeted 2018 adjusted earnings of $2 a share.

GE slashed its dividend Tuesday as the amount of cash the company generates from its power and other industrial businesses has dried up. In the first nine months of

the year, the industrial business generated a negative $335 million in adjusted cash flow. Previously, GE had projected about $6 billion in cash flow for the year, down from $9.7 billion last year and $11.6 billion in 2016.

Mr. Culp said the company would provide an update to investors in early 2019.

GE said **plans to split** the **power generating division** into **two units**, **one** for its **natural gas turbines** and related services, and **another** unit including **steam and nuclear** power, along with equipment and services for distributing electricity.

Last month, GE disclosed a **flaw** in its **newest power-plant turbines** after a **key part failed** and **forced** utility customer **Exelon** Corp. to **shut down two Texas plants**. **GE** has been **making repairs** to the **fleet of turbines**. GE booked $240 million in reserves related to the problem in the third quarter.

The aviation business, which produces jet engines, remains the brightest spot amid healthy demand for its latest model from companies like Boeing Co. and Airbus. GE said the unit's revenue jumped 12% to $7.4 billion and segment profits rose 25%. Equipment orders surged 35% from a year ago.

GE said it remains focused on "shrinking and deleveraging GE Capital," the financial services arm of the company. GE has significantly pared back the division in recent years, but it has still been a source of problems this year, including the need to boost insurance reserves on its insurance portfolio by $15 billion.

Ms. Miller said that GE may need to give more financial support to the GE Capital division "either to achieve desired capital levels or to execute strategic options around its portfolio."

She said the company is also performing the annual re-evaluation of its insurance reserves in the fourth quarter, which could cause an increase in the cash it sets aside.

The Boston-based company has already announced **plans** to **sell** its **transportation business**, which makes **locomotives**, and **spin off** its **health care** unit, which makes **MRI machines** and **hospital equipment**. It also said it planned to **sell down** its 63% stake in **Baker Hughes** , an **oil-field services provider**.

In the third quarter, revenue and profits at the health care and transportation units were roughly flat from a year ago. **GE** said Tuesday it **expects** to complete the **sale** of its **transportation business** to **Wabtec** Corp. in **early 2019** but could complete the sale sooner.

The company reiterated its plan to exits its stake in Baker Hughes, with the company saying it would do so "in an orderly fashion over several years"

GE Powered the American Century – Then It Burned Out

by Thomas Gryta and Ted Mann – Dec. 14, 2018

How the company that was once America's biggest, the maker of power turbines, the seller of insurance, the broadcaster of 'Seinfeld,' became a shadow of its former self

They came by the dozens in luxury sedans, black Ubers and sleek helicopters. As they did each August, General Electric's most important executives descended on a hilltop above the Hudson River for their annual leadership gathering.

Just an hour's drive from New York City or a short flight from Boston, Crotonville, N.Y., is the home of GE's management academy, famed for culling and cultivating a cadre of leaders the company saw as its most valuable product.

Crotonville is where Jack Welch, GE's larger-than-life former chief executive, held his lecture sessions in "The Pit," a large sunken auditorium where he coached the future CEOs of companies such as Boeing and Home Depot. Welch remade and expanded the campus during his two decades running GE.

Opened in 1956, the 60-acre property is half conference center, half country retreat. Behind a guard house lolls a mix of low-slung brick residence halls, classroom buildings and restaurants, a fieldstone plaza with a fireplace, hiking trails and a helipad.

Welch and other GE bosses would visit nearly every month to lead programs for middle managers, customers and executives from other companies who wanted to learn the GE leadership magic. For the 300,000 people who work at GE, a trip to Crotonville is an ardent desire and a treasured accomplishment.

This pilgrimage in August 2017 was different. The stock price had been slumping, and longtime CEO Jeff Immelt had just stepped down after a frustratingly middling 16-year tenure. The new boss, John Flannery, had started a months-long review of every corner of America's last great industrial conglomerate.

On that summer afternoon, the auditorium buzzed with whispers of what was ahead. No one doubted the 125-year-old company's ability to rise again. It always had.

Then Jeff Bornstein started talking.

The gruff, 52-year-old chief financial officer had lost out on the top job weeks earlier, but had committed to staying on to help the new CEO navigate the company's complicated structure.

Bornstein launched into an exhortation: Run the company like you own it. Be the leaders General Electric bred you to be. You should all be accountable for every prediction made and every target missed.

"I love this company," he said. Then, he stopped and took a breath – deep and racked. He started again and stopped again. Jeff Bornstein, the shark-fishing, nicotine-gum-chomping, weightlifting CFO, was crying.

A Maine native, Bornstein had come to GE after college, eventually serving as finance chief of the lending arm, GE Capital, where he helped stave off the worst damage of the financial crisis.

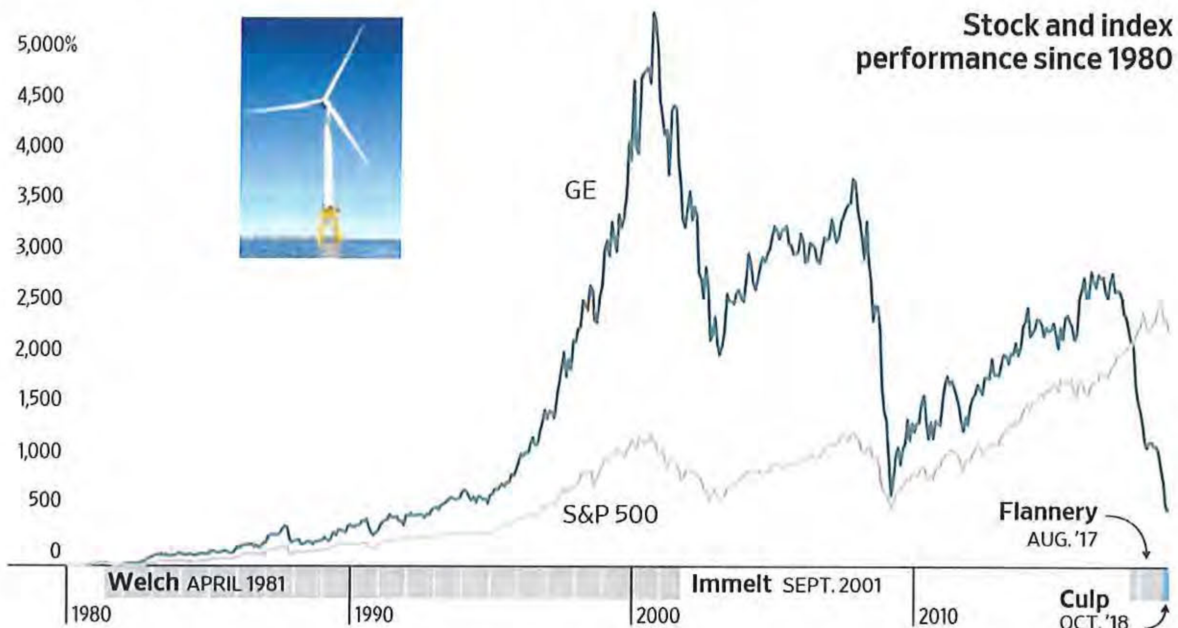
His rivals within the company found him blunt to a fault, willing to chastise or demean in public and private. He served as a counterbalance to Immelt's relentless optimism, and his finance chops brought him the respect of Wall Street.

If this guy was fighting back tears, something must be seriously wrong. In the first six months of 2017, GE had earned hardly any of the $12 billion in cash it projected for the year. It would need at least $8 billion just to cover the dividends it had promised stockholders.

The **leadership** meeting **usually** left executives refreshed, reassured that the foundation of GE's success was not the power turbines or the jet engines so much as

the people in that room, managers groomed in Crotonville who **believed they could enter any industry, anywhere and dominate it.**

Now, as they shuffled out after Bornstein's talk, many **felt shock and confusion**. The reckoning had been a long time coming, and it was far from over. GE had defined and outlived the American Century, deftly navigating the shoals of depression, world war and the globalization of business. Even when things were at their worst, its belief in its history and its prowess made it feel titanic and impregnable. And, yet, unsinkable GE was taking on water fast.



This article is based on scores of interviews with dozens of people directly involved in these events. They include current and former board members, senior executives and employees at GE headquarters and in its various business units, as well as bankers and advisers employed by the company, investors in its stock, customers for its products and corporate analysts who evaluated its performance.

The reporting also reflects internal GE communications and documents, including emails, slide presentations and videos. Publicly available securities filings, court records, transcripts of meetings and previous Journal articles were also used. The Journal reached out to the individuals in this article and offered them the opportunity to comment.

The Engine Room

General Electric Co (GE) helped invent the world as we know it: wired up, plugged in and switched on. Born of Thomas Alva Edison's ingenuity and John Pierpont Morgan's audacity, **GE built the dynamos that generated** the **electricity**, the **wires that carried it** and the **lightbulbs that burned it.**

To keep the power and profits flowing day and night, GE connected neighborhoods with streetcars and cities with locomotives. It soon filled kitchens with ovens and toasters, living rooms with radios and TVs, bathrooms with curling irons and toothbrushes, and laundry rooms with washers and dryers.

The modern GE was built by Jack Welch, the youngest CEO and chairman in company history when he took over in 1981. **He ran it for 20 years,** becoming the rare CEO who was also a household name, praised for his strategic and operational mastery.

Welch, short, sharp and volatile, had an intense glare and a reedy growl that betrayed his blue-collar Massachusetts roots. He was obsessive about setting targets and hitting them. A chemical engineer by training, he once blew the roof off a GE factory.

Left Jack Welch. He expressed disdain for GE's bureaucracy from his earliest days there and later earned the nickname "Neutron Jack." He eliminated some 100,000 jobs in his early years as CEO and **insisted** that **managers fire** the **bottom 10%** of **performers each year who failed to improve**, in a process that became known as "**rank and yank**." GE's financial results were so eye-popping that the strategy was imitated throughout American business.

"**Fix it, close it or sell it**" was a favorite slogan. **Welch wanted** to **get out of any businesses where GE wasn't a market leader**.

At its peak, General Electric was the most valuable company in the U.S., worth nearly $600 billion in August **2000**. That year, GE's third of a million employees operated 150 factories in the U.S., and another 176 in 34 other countries. Its pension plan covered 485,000 people. With nearly 10 billion shares outstanding, GE was also among the most widely owned stocks. The company paid dividends to more than 600,000 accounts, from individual investors to major mutual funds that served millions.

GE had moved in and out of businesses since 1892: **airplane engines, plastics**, **cannons, computers, MRI machines, oil-field drill bits, water-desalination units, television shows, movies, credit cards and insurance**. The big machines were always GE's beating heart. But it was a willingness to **expand into growing businesses** and **shed weaker ones** that helped make it the rare conglomerate to survive the mass extinction of its rivals.

The **catalyst for GE's success during Welch's reign** was that it **worked** more **like** a **collection** of **businesses under** the **protection** of a **giant bank**. As the financial sector came to drive more of the U.S. economy, **GE Capital**, the company's finance arm, powered more of the company's growth. **At its height**, Capital **accounted for more than half** of **GE's profits**. It **rivaled** the **biggest banks in** the **country**, competed with Wall Street for the brightest M.B.A.s and employed hundreds of bankers.

Left: Walt Robb Senior vice president of corporate R&D 1951 – 1993. "GE was the best-managed company in the world. It relied on **realistic measurements**. It **required managers** to **have short-range and long-range goals**."

Left: Kirby Vosburgh Electronics-laboratory manager 1972 – 2000. "**You were supposed to be better than anyone else in the world at your job**."

GE Capital sucked in debt and spat out money. Created in the first half of the last century to help people buy home appliances, it now financed fast-food franchises, power plants and suburban McMansions, and leased out railroad tank cars, office buildings and airliners. **The industrial spine of the company gave GE a AAA credit rating that allowed it to borrow money inexpensively, giving it an advantage over banks, which relied on deposits**. The cash flowed up to headquarters where it powered the development of new jet engines and dividends for shareholders.

Capital also gave General Electric's chief executives a handy, deep bucket of financial spackle with which to smooth over the cracks in quarterly earnings reports and keep Wall Street happy. Sometimes that meant peddling half a parking lot on the final day of a quarter, or selling a part interest in a power plant only to purchase it back after the quarter closed.

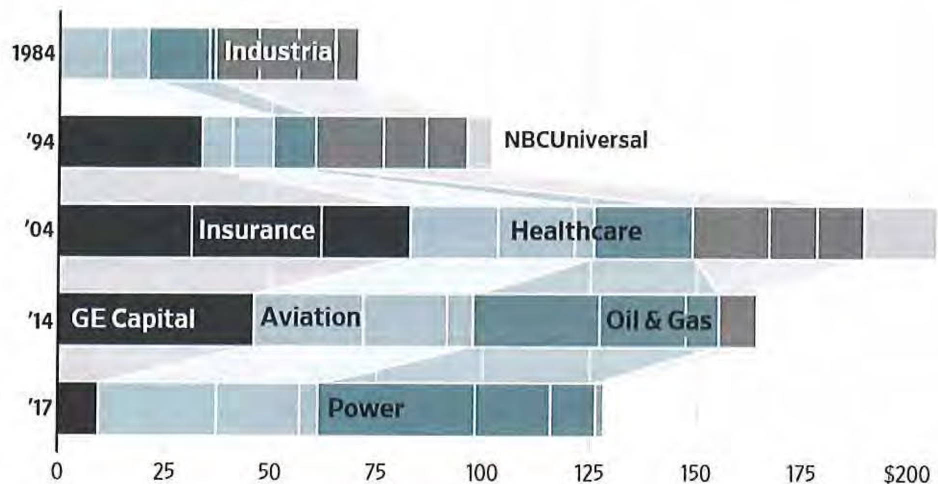
Many Capital veterans relished their reputation as mavericks and cowboys, especially in comparison to their staid Wall Street rivals. They loved the story about Capital's then-CEO Gary Wendt renting a camper and driving across Eastern Europe in the early 1990s, buying up still sleepy banks as the post-Communist era dawned. The rest of the decade saw explosive growth, helping drive Jack Welch's fame into orbit.

With shares trading above $150 in early **2000**, **Welch split** the **stock 3-for-1**. It would prove to be a high-water mark. GE shares retreated in his final year after a failed takeover of rival Honeywell and the popping of the dot-com bubble. Still, **GE shares** were **trading at 40 times** its **earnings when Welch retired in 2001**, more than double where it had historically. And much of those profits were coming from deep within Capital, not the company's factories.

Disaster hit immediately **after Welch** left. The **Sept. 11 terrorist attacks** – four days after his handpicked successor, **Jeff Immelt, took over** – hammered GE's insurance businesses and grounded the airline industry. Immelt began revamping the Welch portfolio, **selling off** the **plastics** division **and most of** the **insurance** lines. He didn't rein in the lending at Capital, which accounted for 38% of GE's revenue in 2008.

When the financial crisis hit, Capital fell back to earth, taking GE's share price and Immelt with it. The stock closed as low as $6.66 in March **2009**. **General Electric** was **on** the **brink of collapse**. The **market for short-term loans**, the lifeblood of GE Capital, **had frozen**, and there was little in the way of deposits to fall back on. The **Federal Reserve stepped in** to save it **after** an **emergency plea from Immelt**.

After that, GE wasn't regarded like its fellow industrial companies – big, slow-moving businesses that could project demand for their hulking machines over decades. Instead, the near-death experience taught investors to think of GE like a bank, a stock always vulnerable to another financial collapse.



Bank supervisors from the Federal Reserve moved into a suite of offices in Capital's headquarters just off the Merritt Parkway in Norwalk, Conn. They hovered in meetings, demanding details on lending businesses that Capital staff worried the regulators didn't understand or respect.

Immelt gritted his teeth at the name of Caroline Frawley, head of the Fed teams that patrolled the unit that spun out nearly half of GE's profits.

"That woman," he said at one point, "is not going to tell me how to run this company." He wanted to be free to invest billions into developing a new jet engine without worrying about the government looking over his shoulder.

As the recovery slouched into the early part of this decade, a handful of top-ranking executives huddled here and there, always discreetly, to discuss their most obvious problem. GE couldn't live without GE Capital, still so big it was essentially the nation's seventh largest bank. But investors couldn't live with GE Capital and its unshakable shadow of risk, either.

What if the GE Jack Welch built didn't work any more?

GE might reap billions from selling Capital's businesses, as well as the real estate, mortgages and other assets it owned, but that would create a gigantic tax bill. More importantly, the company would need a plan to replace the earnings Capital brought in each quarter.

Cracks in the performance of the company's **industrial lines** – its **power turbines**, **jet engines**, **locomotives** and **MRI machines** – would now be **plain to see**, some executives worried, **without Capital's cash to help cover** the **weak quarters and pay** the sacrosanct **dividend**. That **dividend**, doling out billions of dollars to shareholders, is **one reason GE was owned** by so many, with about 43% of its shares held by individual investors.

It was hard to see how the puzzle pieces could be made to fit. Immelt and Bornstein, the CEO known as Big Jeff and the CFO as Little Jeff, and a small group of trusted lieutenants, kept meeting.

Increasingly, Immelt worried about his legacy. He often reminded people that he kept the ship afloat after Sept. 11 and the financial crisis. But he also joked that his ability to ride out in a blaze of glory ended the day Lehman Brothers went bankrupt in September 2008.

Whittling away at Capital wasn't enough. Immelt, trapped in Welch's long shadow, craved a bold move to shock his company out of the doldrums that had plagued his tenure. It was time for GE to be reinvented again.

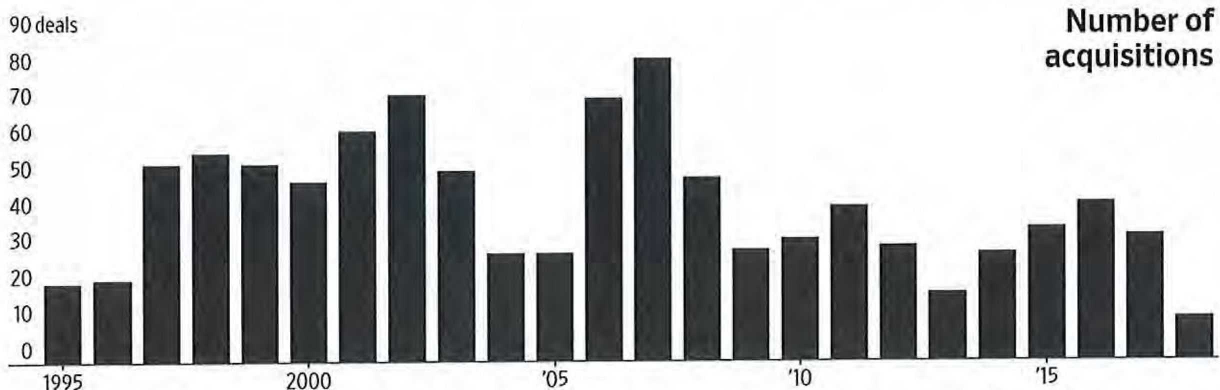
Meal and Deal

Jeff Immelt was on his way to the Winter Olympics in Russia in February 2014 when the GE jet made a stop in Paris for dinner. He had an invitation from Patrick Kron, his counterpart at the struggling French industrial conglomerate **Alstom SA** .

Kron was looking for a savior. Alstom, a **maker of trains, rail equipment, power turbines and generators**, was veering toward insolvency, signing up business at a loss just to keep money coming in the door. The beleaguered CEO had dined already with the chief executive of GE's archrival, Siemens AG. In Immelt, Kron found a man spoiling for a big deal.

Just a few months earlier, the word had gone out to the merger teams embedded in each of GE's industrial units: Headquarters wants your biggest targets.

Alstom was one of the expensive deals Immelt focused on as the two CEOs chatted into the night in Paris. After dinner in France, Immelt stopped in Helsinki to consider another target, Wartsila, a Finnish builder of marine engines, oil-and-gas equipment and power plants. Another potential deal, dubbed Project Lion, came from GE's oil-and-gas unit. Still, not long after the restaurant bill was paid, momentum was building for a bid on Alstom. The only question was how much Immelt would be willing to pay.



Some GE directors and advisers were wary. Immelt's determination to complete a blockbuster reflected his customary optimism, a trait that had led him to overpay in the past, and one the succession team warned the board about before it picked him as CEO.

Hardworking and affable, **Immelt** was 6-foot-4 with a mane of graying hair swept back from the temples. He moved easily through crowds and possessed the practiced eye contact of a politician. He was quick to chuckle and usually had a joke to tell, even if it often was one he'd already told.

Former colleagues compared him to Bill Clinton because of his magnetic ability to hold the focus of a room. He sounded like a leader. He was a natural salesman.

Immelt, an Ohio native who played football at Dartmouth, **came to GE out of Harvard Business School**. He changed jobs often, working in the plastics division before eventually running the health-care unit. Immelt was 44 years old when **he won a bruising and public succession contest set up by Welch**, **beating out two men who would later lead Home Depot, Chrysler, 3M and Boeing**.

Welch advised him to carve his own path, and **Immelt's** decision was to take a **gentler tack**. **Welch** was **known** to **put** his **arm around** an **executive who just missed his numbers**, **tell him he loved him** and **if it happened again**, **he was out**. Immelt could lean on executives and their underlings just as hard, cajoling and challenging, but he discouraged dissent by applauding optimistic news.

Welch, **the engineer**, was likely to **quiz** a **manager about details** – why are the numbers down at your plant – where **Immelt** dealt in **broader strokes**. He embraced his background in **sales**. A presentation at any GE meeting was called "a pitch" and ideas for new businesses were "imagination breakthroughs." Decisions had to fit with the "**story**" of the company and where it was going.

Immelt was so confident in GE's managerial excellence that he **projected** a **sunny vision** for the company's future **that didn't always match reality**. He was aware of the challenges, but he wanted his people to feel like they were playing for a winning team. That often left Immelt, in the words of one GE insider, trying to market himself out of a math problem.

For the month or so after the dinner with Kron, a team of GE merger specialists set about trying to make the math for the Alstom deal work.

Executives at GE Power knew **Alstom** well, having given it an appraising sniff two years earlier. They found a company then too **troubled** to take a run at: Alstom was in **greater need of cash than** the **market understood**, had too **many employees** and **French law made** it too **difficult** to **lay off** workers **and sell assets**

Alstom's problems hadn't gone away, **but now its stock was cheaper**, and Immelt saw the makings of a deal that fit perfectly with his vision for reshaping his company. GE would essentially swap Capital, the cash engine that no longer made sense, for a new one that could churn out profits each quarter in the reliable way that industrial companies were supposed to.

At the time of GE's 2014 shareholder meeting in April, Alstom executives flew to a hotel near the venue in Chicago to talk. To the dismay of some involved, GE's bid crept upward, from the €30 a share that the power division's deal team already believed was too high, to roughly €34, or almost $47. Immelt and Kron met one-on-one, and the deal team realized the game was over. The principals had shaken hands.

Immelt knew Alstom had its problems but hoped to show off the management prowess on which GE prided itself. T he French company had a large collection of power plants that GE would run more efficiently and a flabby global workforce that GE would slash.

News of the deal leaked hours after the shareholder meeting was over. Valued at $17 billion, the acquisition would be GE's largest ever and the first move in the one-two combination that Immelt thought would revive his company and set his legacy.

The Pivot

Jeff Immelt was all smiles when he took the stage for that August's annual Crotonville leadership summit.

His first PowerPoint slide was entitled "GE Pivot." Alstom promised "tremendous upside with strong execution," read another projected on the auditorium's big screen. "Unique & historic opportunity at high returns."

In **Immelt's vision**, this was a chance to **corner** the **market on lighting** the unlit corners of the Earth. He imagined **crushing competitors** for **gas-fired power turbines** such as Germany's Siemens and Japan's Mitsubishi, and winning bids to **build power plants across** the **Middle East, Africa and South Asia**. In the present, the deal made sense to other GE executives because they believed the company could **squeeze more profit from** the **old, coal-fueled power plants Alstom operated in Europe and Asia**.

The **visions** for the present and the future were both **fundamentally flawed**.

As GE's research department was preparing white papers heralding "The Age of Gas," the world was entering a multiyear decline in the demand for new gas power plants and for the electricity that made them profitable.

Opposition from the **French government** – blindsided when news of the deal leaked in April – slowed completing it to a crawl. GE's negotiating team continued to agree to more **costly concessions** demanded by regulators on both sides of the Atlantic as 2014 bled into 2015.

Under pressure from the U.S. Justice Department, GE agreed it would get rid of an Alstom unit that serviced turbines made by competitors.

Bowing to the Europeans, GE agreed to dump Alstom's still-developing program to build a state-of-the-art gas turbine equivalent to GE's flagship model. That technology was transferred to Italy's Ansaldo, potentially opening the door to more serious competition since the company is 40% owned by the Chinese. And European and

Alstom officials stymied GE's attempts to review the company's order book: a black box of immeasurable risk since the French company had been **lowballing bids** just **to keep sales coming in**.

By mid-2015, the **concessions threatened GE's logic for the acquisition**. The company hired litigators at one point, ready to fight regulators, or even to help extricate GE from the deal, if Immelt and his top executives decided it no longer made sense.

A band of skeptics inside **GE Power** were **hopeful** the **deal would collapse**. When advisers determined that the concessions to get the deal approved might have grown costly enough to trigger a provision allowing GE to back out, some in the Power business quietly celebrated, confiding in one another that they assumed management would abandon the deal.

But Immelt and his circle of closest advisers wanted it done. That included Steve Bolze, the man who ran it and hoped someday to run all of General Electric.

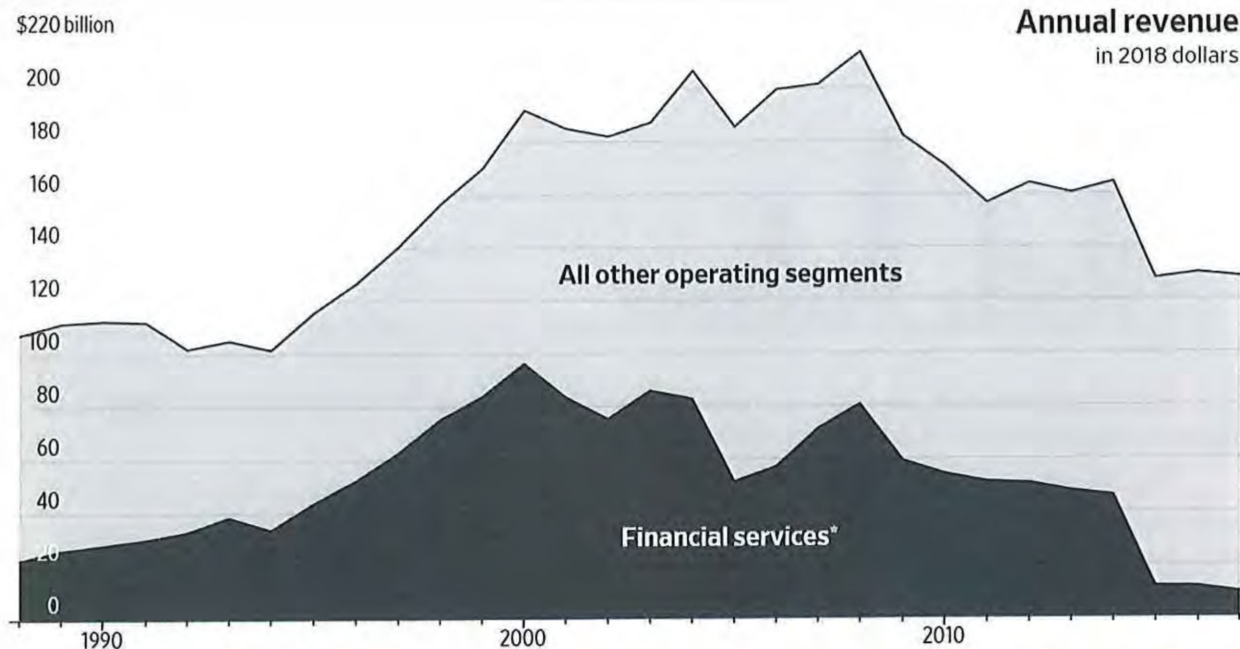
The Exit

In the early spring of 2015, GE Capital's chief, Keith Sherin, strode into a colleague's office in the division's Norwalk headquarters to share the company's most tightly held secret.

"We're going to **de-SIFI**," the boss said.

That mystifying bit of regulatory jargon could only mean one thing: They were selling GE Capital. Immelt's reinvention of GE was moving into its next phase.

In the aftermath of the 2008 financial crisis, Capital was deemed such a big player in the banking system that it was designated a "**Systemically Important Financial Institution**" and forced to accept the more intrusive regulation that Immelt so despised. In the years since, GE Capital had been shrinking slowly, but not fast enough for investors.



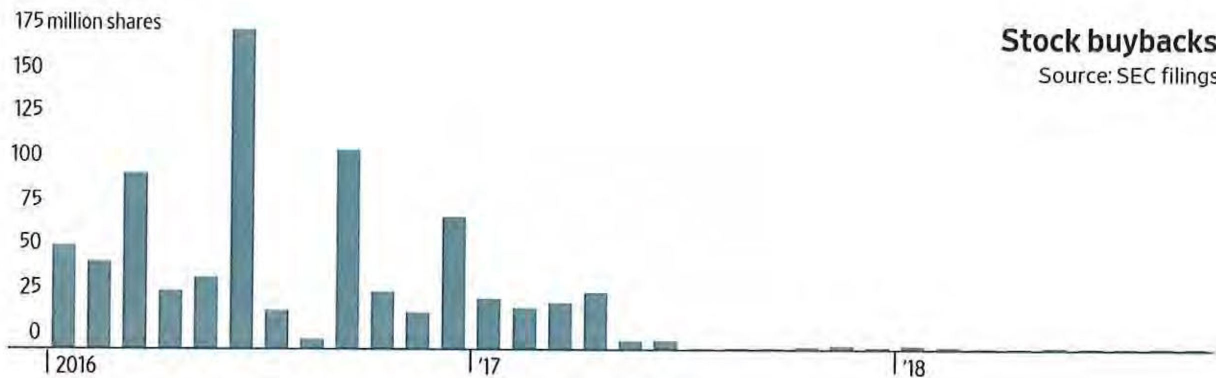
To get out from under the **Fed's thumb, GE would sell $216 billion worth of financial assets** – real estate, railcars, mortgage holdings and lending operations that served midsize firms and provided venture capital. Added to what it had already spun off, $310 billion worth of Capital's business would be chopped up and spread across the American financial system. That would leave a $100 billion stub that included the plane-leasing unit and some industrial leasing operations meant to boost GE's power and oil-and-gas businesses.

Once complete, less than 10% of GE's total earnings would come from the finance engine that Jack Welch had built.

It struck some within Capital as an overcorrection to both the markets and skeptical regulators at the Fed. Some worried how the company would manage once most of GE Capital was gone.

"What are we going to do about the cash?" the second Capital executive asked after Sherin broke the news.

"We'll work it out," Sherin said, thinking ahead to the thousands of hours and hundreds of people it would take to pull off. Immelt had picked Sherin, who had been the finance chief of the entire company, to run Capital after the financial crisis.



Their idea was to use the proceeds from selling most of Capital to **buy back GE shares**, offsetting the loss of Capital's earnings.

The company made the plan public on April 10, almost one year after the Alstom deal leaked to the press, and decided to act fast to sell most of the business. Despite a few private misgivings in Norwalk, the plan was widely supported by other GE employees, the board and, more importantly, investors.

Billionaire Nelson Peltz, who runs Trian Fund Management, an activist investment firm feared by executives of struggling companies, called to congratulate Immelt on the pivot right after the announcement.

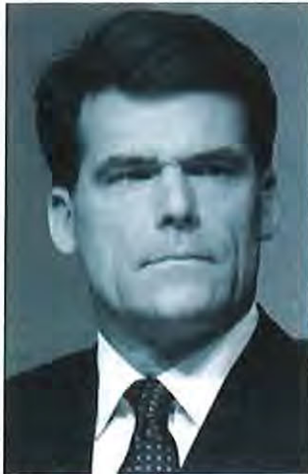
In response, the GE boss told Peltz: "We'd love to have you in the stock."

Cracks in Power

Things were beginning to come together for Jeff Immelt as 2015 wore on. That summer he sat behind a desk in the auditorium in Crotonville watching Steve Bolze cue up PowerPoint slides as part of the Growth Playbook, a grueling annual examination of GE's eight business leaders.

At the event, GE would hammer out targets for sales and profit, setting the underlying assumptions for the financial estimates it would give investors.

It had been a few months since the plan to sell off GE Capital had been announced, and Bolze, the head of GE Power, was inching toward completion of the Alstom deal.



Left Steve Boltze. Already the chief of GE's largest business by sales, Bolze, 52 years old and square-jawed, was in the race to succeed Immelt, and he was about to add a huge new global portfolio of power plants and thousands of workers to his fiefdom.

Moving through the slides, Bolze came to the proposed annual sales growth rate of the power business: 5%.

There was ample reason for skepticism. Power had been struggling to meet targets, and its sales hadn't grown that quickly in years. Global investment in new gas-fired power plants was slowing. Energy efficiency was on the rise. That meant future revenue from the highly profitable service contracts GE had signed was likely to fall, or at least to grow less quickly. Global gross domestic product, a reliable proxy for the power market, was below 4%.

It was a rosy assumption that cried out for interrogation, the very point of the formal review. As the room watched, Immelt gave the desk in front of him a confident slap.

"Great, next page," he said.

Immelt could be tough on executives in his own way in these briefings, but it wasn't usually for being too optimistic. "Where's the guy I used to know?" he would ask an underling who told him Immelt's targets couldn't be hit. When the mood soured, the tone changed. "Your people," Immelt would say, "don't want it bad enough."

So, they stretched. This was particularly true in Power after the Alstom deal closed in November 2015. **Immelt pushed for market share at all costs**, which led to less than lucrative deals. They also used financing from the stub of GE Capital to help prop up customer demand.

Already facing a slowdown in equipment sales and competition from renewable energy, managers in **Power struggled to mesh** their **operations with Alstom's**, the largest effort of its kind in GE history.

Throughout 2016, teams inside Power combed through the portfolio of service contracts, each representing payments from power generators to maintain the turbines GE had sold them. By design, those contracts were malleable. A technological innovation that improved the performance of a turbine blade or lengthened the number of hours between maintenance outages had to be accounted for.

The **GE teams started offering discounted turbine upgrades** to customers in exchange **for extending** the **length of contracts** to as far out as 2050. **Executives scoured existing contracts for ways to change underlying assumptions**, such as the **frequency** of **overhauls**, **to boost** their **profitability**.

GE Power even sold its receivables – the bills its customers owed over time – **to GE Capital** to generate short-term cash flow. The unit **gave customers discounts** on their **service contracts**, **lowering** their **overall value**, **in exchange** for renegotiations that **let** the **company bill** the **customers sooner**.

The accounting maneuvers were legal, if aggressive, GE executives assured one another. **But** it also **meant** that the **profits** were **mostly on paper**. Rarely was a new dollar of profit flowing in the door.

Bolze's team was operating in a tradition that stretched at least as far back as the glory days of Jack Welch, but the scale of the aggressive contract accounting was far bigger.

Worry was starting to grow **inside Power by** the **end of 2016**. **Management's expectations about** the **sales growth and profit** they should be able to hit **didn't reflect** the **dim reality of** the **market**, team members told Bolze and Paul McElhinney, the head of the unit that administered the service contracts.

The complaints were common among lower-level executives, but when raised to leaders like McElhinney, they were **stopped cold**.

"Steve's our guy," McElhinney said in one meeting. If Bolze was elevated to CEO, those behind him in Power would rise too. "**Get on board**," he said. "We have to **make the numbers**."

Enter Trian

The seed Jeff Immelt sowed with his invitation to **Nelson Peltz** bore fruit in the fall of 2015. **Trian Fund Management** disclosed it had been secretly **buying up GE shares**, amassing a stake worth $2.5 billion that made it one of GE's 10 largest shareholders.

Some outsiders saw Immelt inviting in a disruptive investor like Peltz as a sign of confidence, but it was also a defensive strategy. Other activists were circling GE.

Activist investors are usually bad news for managers. The pools of **shares** they control **provide** a **fulcrum for** prying loose **board seats, management changes and** the **sale of businesses**.

Left Nelson Peltz. Trian wasn't calling for a breakup or CEO change, though, as it had at lumbering companies including DuPont and Kraft. It wasn't even seeking a seat on GE's board, whose 18 high-powered members were loyal to Immelt, as it had at Family Dollar, Ingersoll-Rand , Mondelez International and PepsiCo.

Rather, the influential hedge fund was coming forward with what amounted to a high-profile endorsement of Immelt's strategy.

Trian's co-founders, Peltz and his son-in-law Ed Garden, took care to say this was a partnership with GE and its brass. The duo traveled to GE's Fairfield headquarters on a Sunday afternoon to explain their thinking. They sat alongside Immelt and Jeff Bornstein, the GE chief financial officer, under oils and watercolors, many of them the spoils of Jack Welch's ill-starred purchase of the brokerage Kidder-Peabody.

"It's not something you want to break up," Peltz said inside the wood-paneled boardroom. "It's something you want to keep taking care of."

Trian didn't like to be called an activist investor, even though it helped revolutionize that corner of the investing world, preferring to be called an engaged shareholder. While it built a reputation as a conglomerate killer, it had found a conglomerate it liked in GE.

An 80-page white paper that Trian released with its investment was titled "Transformation Underway...But Nobody Cares." It argued GE's stock, then around $25, could reach $40 to $45 by the end of 2017. It praised the Alstom deal and pushed GE to borrow more so it could repurchase another $20 billion in stock.

Running the GE relationship fell to Garden, a 57-year-old, hard-charging financier who knew both Immelt and Bornstein. In fact, Garden's brother had been a college buddy of Immelt.

Garden, a lean man fond of clear-rim eyeglasses, was the calmer side of the partnership with Peltz. He had little problem speaking his mind, though, making clear Trian helped fix companies – and also break them up.

It didn't take more than a few months for the **good feelings** to **sour**. Trian said at the outset it would be watching GE's performance. A year after the initial investment, GE was behind on financial targets and the stock wasn't moving.

In the fall of 2016, an increasingly impatient Garden went to see Bornstein at his six-level, $13 million townhouse in Boston's Back Bay. Garden said if the performance didn't improve, Trian might ask for a seat on the board. The threat of a public battle, which GE wanted to avoid, gave Trian the leverage it needed.

The two men started to work out a compromise. **GE doubled its cost-cutting goals** and tied more of its executive bonuses to profits at its core industrial units.

Some parts of the **agreement weren't public**. **If GE didn't get back on track**, **Trian would push** a **board seat or management changes**. Both men understood that could include Bornstein himself, a man many within the company thought had the best chance to succeed Immelt.

Trouble in Sarasota

Jeff Immelt wasn't backing down on GE's strategy or direction. The company was a market leader, it validated trends and set the tone for other companies. It didn't run away from problems.

After President Trump's election and threat to pull the U.S. out of multinational trade deals, **Immelt** used his annual letter to shareholders in February 2017 to remind them that **GE** was **bigger than any one country**.

"We don't need trade deals, because we have a superior global footprint," he wrote. " We see many giving up on globalization; that means more for us."

During a time when many companies were trying to avoid attention from the new president, Immelt didn't shy away when Trump's deregulation agenda conflicted with GE's stance on climate change.

"No matter how it unfolds, it doesn't change what GE believes," he wrote in a note to employees in March 2017.

GE was still on the muscle, hunting for big deals. A team in the aviation division had worked with bankers to put together a proposal to buy aerospace rival Rockwell Collins in late 2016. The deal pitch, worth more than $15 billion, reached Immelt in early 2017. He scuttled it. Instead, **GE kept repurchasing stock**, spending more than $3 billion in first four months of 2017.

GE Power, the unit that led all others in sales, was the centerpiece of Immelt's new GE. But there were only so many service contracts to be renegotiated.

The company revealed the weakness hidden inside the unit that April with a single, startling figure: GE's industrial businesses were sending $1.6 billion more out the door in the first quarter than was coming in, about $1 billion worse than it had projected. The result raised red flags about **aggressive accounting** and whether the company could make its goals.

Most of the shortfall came from its service contracts, which should have been the source of the easiest profits. Instead, the heart of the industrial business was hollow. And its failure was about to tip the entire company into crisis.

If you bought $100 worth of GE stock in the beginning of 1980, it would be
$10,670.59
at its Aug. 28, 2000 peak.

Today it would be
$2,269.51.

Immelt only had a month before the Electric Products Group conference, a sort of national convention for the industrial fraternity. As the head of the biggest U.S. conglomerate, the GE chief was traditionally the star attraction, holding court and giving the keynote presentation to close the three-day meeting.

GE's shares were down 11% so far that year, missing out on a broad market rally that had seen the S&P 500 climb more than 6%. Investors openly wondered if Immelt would stick by his 2018 profit target of $2 a share. Senior executives were perplexed about the long-held target, and Jeff Bornstein, the CFO who had given his word to Trian at risk of his job, advised against sticking to it.

Immelt was an accomplished presenter, his ability to navigate a deck of PowerPoint slides honed over the decades. This year was different. The confident, affable salesman ready with a smile and a joke wasn't himself as he faced a skeptical audience inside the ballroom of the Longboat Key Resort in Sarasota, Fla.

He was shaky, racing through the highlights of his slides. On the last one, he defended the company's 2018 profit goal. Sort of. If the oil and gas markets didn't improve, he said, the $2 target for 2018 would be a reach, and the company would have to cut even more costs.

Immelt, with his eye on the future, believed the next CEO would eventually have to reset the goal, and Immelt thought cutting the target twice would be bad for investors and the company.

The crowd buzzed with confusion. Barclays analyst Scott Davis asked bluntly if Immelt was backing the target.

"It's going to be in the range, Scott," Immelt said. "If we wanted to take it off the page, we would have taken it off the page. We didn't want to."

The questions didn't get better. Is the Alstom deal not working? Can the power division improve its cash flow? Would the company consider spinning off the health-care division that Immelt had once run?

Immelt, as he had before, argued that investors had GE all wrong, mispricing a stock that should have been above $30 a share. The aviation business was booming, outpacing competitors with its newest model. The once-troubled health unit was on the upswing. The oil-and-gas business, which had suffered through sliding crude prices, was riding a rebound.

"It's not crap. It's pretty good, really," Immelt said of his company's financial performance.

When the grilling was over, Immelt wasted no time getting out of Sarasota. In less than an hour he was aboard a GE jet. Immelt, his credibility wounded with Wall Street, limped through the rest of the week as frustrated investors called seeking clarity on the state of the company.

Trian, which had recently projected that GE could actually exceed the 2018 goal Immelt had waffled on, made it clear it was going to push for a seat on the board.

All of a sudden, a question that Immelt had batted away with little more than a joke during the questioning in Florida seemed significant.

"Hate to put you on the spot," said Steve Tusa, an analyst from JP Morgan Chase & Co. who had been telling investors to sell GE shares, "but I'd like to get any update on succession planning, potential time. I know you just can't bear the thought of not coming down to Sarasota."

After Immelt

Only a dozen men had led General Electric to this point in its history. Many spent a decade in the role. Jack Welch spent two.

Jeff Immelt was in his 16th year. He had tried everything to revive the stock, but in the days after his struggles in Sarasota, he realized he had lost the confidence of investors, especially Trian. Without that, the optimist saw little chance he could lead a turnaround.

Immelt decided it was time for a change, and he wanted to do it without being pushed.

GE didn't take replacing its CEO lightly. When Immelt competed for the top job, candidates were moved around, performance was measured, the list was narrowed and those passed over often left. Corporate governance experts praised it at the time as the very model of a modern chief-executive succession.

The process left Immelt with a sour taste. For years he was clear he wanted his own successor picked in a less public contest, and was true to his word.

The board years earlier had quietly set a target of late 2017 for a new CEO to take over and identified **four** GE men as possible successors: **Bornstein**, the **finance** chief; **Bolze**, the head of the **power** division; John **Flannery**, the leader of the **health-care** unit; and Lorenzo **Simonelli**, boss of the **oil-and-gas** business.

In May 2017, around the same time of Immelt's disastrous performance at the conference, the board called the candidates to New York to audition. But by that time, the secret race had already been won. Flannery was the unofficial heir apparent.

Simonelli, seen at 45 as too young for the main job, was ticketed to run the public company that resulted from the merger of GE's oil-and-gas unit and oil-field service company Baker Hughes.

Bolze, whose team at Power had stretched so far in hopes of riding his coattails, was out. Not only was his unit the sclerotic heart of GE's struggles, but Bolze, who had occasionally clashed with Immelt, was seen early in the process as a poor fit as CEO.

Bornstein hadn't run a GE business unit before, and Immelt and the board felt he could be a better partner to a successful candidate, if he would agree to stay on.

The process was shrouded in secrecy up until the end. After Immelt informed the board of his intention to step down, a small staff worked out of human-resources chief Susan Peters' apartment to write the press release and other materials for the announcements.

A 30-year GE veteran, Flannery had yet to be told he had won the job. On Friday, June 9, less than three weeks after the Sarasota conference, **Flannery** got a call. Immelt was out. He was **in**.

Bald and bespectacled, Flannery was nothing like Immelt. He was soft-spoken and **analytical**. More **accountant than salesman**, he lacked Immelt's booming presence and charisma.

Flannery (left) was Trian's ideal successor, a balm for its frustrations with Immelt. He had an investor's mind-set, crunched numbers naturally and was obsessed with the cash businesses produced.

Flannery, whose father was president of a small Connecticut bank, spent most of his years at GE Capital after getting his **M.B.A. from Wharton**. He worked in risk management, private equity and eventually rose to be the head of mergers and acquisitions. He had spent years imagining a more streamlined GE and was bewildered by its inability to meet cost-cutting targets.

For some, that made him dry. For others, including the GE board, he was just what GE needed. He knew of Immelt's flaws and wanted to change the culture to encourage debate and focus. Some of Immelt's signature endeavors and buzzwords evaporated when Flannery ascended.

It was tempting to cast him as the anti-Jeff, but he was instrumental in the Alstom deal, arguing it would be a valuable asset.

Flannery was also a GE die-hard, just as his predecessor and his rivals for the job. Flannery told associates after taking over that he kept a "f— you list" bearing the names of those who had done GE wrong, especially those who left the company.

A Short Honeymoon

John **Flannery** didn't waste any time. Even before he was supposed to officially start as CEO in August, he **launched** a **review** of **each business unit**, **scuttled** a **futuristic** building planned for the new **Boston headquarters**, and **grounded** the **fleet** of **corporate jets** that **Immelt had used so extravagantly that** he **had a spare plane follow him around the world**. Each Friday, even if Flannery was on business overseas, he answered employee questions in a recorded video, helping to boost spirits.

He also made a pilgrimage to Nantucket to see Jack Welch, then 81, who has a house there. Some expected Flannery to be more like Welch and less like Immelt; I n the aviation division some workers were walking around chanting "Jack is back." The enthusiasm was double-edged, an endorsement of Flannery and a rebuke of Immelt.

The honeymoon didn't last long. Flannery was expected to make things better, but he revealed in his first conference call in July that he wouldn't lay out his strategy until November. Investors used to Immelt's optimism were left mired in uncertainty. GE's stock dropped nearly 3%, to $25.91 a share.

Flannery soon **learned** that **things were worse inside GE Power than he had known**. The **service contracts** tweaked when Steve Bolze was in the running for CEO made earnings **look better on paper**, **but delayed money coming in**. **Factories** were **holding** a **glut** of **expensive inventory because** the **division** had **prepared for growth into** a **market that was collapsing**, **tying up more cash**.

The mess in Power led to the **abrupt departures** of **key GE veterans**, a move some inside the company worried would leave the rookie CEO short of experienced hands to help revive GE's fortunes.

Bolze had left soon after losing the CEO competition. The secrecy of the succession race meant there wasn't another leader ready to step in at Power. It was still integrating the company's largest-ever acquisition and about to enter one of the biggest-ever slumps in the power-generation market.

Immelt, who had stayed on as chairman, didn't stick around for the new CEO to dismantle what he had built. He left the company where he had spent most of his life in

October, months earlier than expected. A few days later, Flannery nudged out Immelt's top lieutenants, marketing chief Beth Comstock and international business head John Rice.

As the board was gathering in October for a monthly meeting, Flannery stepped into the room to make an announcement: Bornstein, the company's hard-nosed CFO, was resigning. Bornstein himself later came in to explain his decision. They were likely to have to offer Trian a seat on the board. Leaving now might spare directors some conflict between Trian and management. Bornstein would depart along with Comstock and Rice.

It blindsided several directors, leaving them disappointed the board hadn't been consulted. They felt they could have persuaded Bornstein to stay on. The CFO's resignation caused more worry from investors. GE announced Bornstein's departure after the market closed on a humdrum Friday.

The next big news wasn't long in coming, and this time it involved addition instead of subtraction. That Monday, GE named Trian's Ed Garden to its board, a move months in the making after the company failed to hit the targets Bornstein had agreed to in his Back Bay townhouse. Investors drove down GE stock almost 4% to $23.43 by the time the market closed.

Flannery and the board, wanting to avoid a proxy fight, added Garden without opposition. Some directors welcomed the new voice, even if Garden could prove abrasive at times, while others on the board were blunt in declaring their distaste for him.

Garden was fond of reminding them all that Trian had lost hundreds of millions of dollars on their watch. Now, he had a direct say in decisions and access to all of GE's financial secrets.

The Anti-Jeff

If Jeff Immelt was known for his vaulting optimism, John Flannery quickly became known for his boundless brooding.

Few decisions, even major ones, were final as he devised the strategy he promised to unveil in November. Flannery relentlessly sought input from outsiders, searching for flaws in his reasoning. The feedback meant a decision, like selling off a division, could be reassessed at any time.

He repeatedly conferred with the board and encouraged debate. Under Flannery, the board or its committees had dozens of meetings and conference calls. In just one year, they got together in one way or another 50 times.

Flannery felt more analysis and scrutiny was exactly what GE needed. Too often, the company under Immelt had made major decisions about how to spend its cash without enough rigor. And because of GE's decentralized structure, Flannery felt he

needed time to better understand the disparate units despite his three decades working at GE.

The whole process, invigorating at first after Immelt's dislike of dissent, quickly became grating to the top executives.

By the time the third-quarter results came in October, the stock was below $25 and losing ground. GE warned that full-year cash flow from its industrial businesses would now be $7 billion, a shadow of the earlier guidance of $12 billion. The loss was almost entirely from the troubled Power division.

With the November date for releasing his strategy to investors rushing toward him, Flannery was forced to stop agonizing, even though his plan remained a work in progress.

Hours before several hundred investors, analysts and reporters packed into a large wood-paneled meeting room in Midtown Manhattan on Nov. 13, **GE disclosed it would cut its dividend in half.**

Some of Flannery's explanation was familiar—he blamed the previous management of GE Power—and some of it was new and unnerving. "We've been paying a dividend in excess of our free cash flow for a number of years now," he said.

In the dry language of accounting in which he was so fluent, Flannery was declaring a pillar of Immelt's pivot had failed: **GE had been sending money out** the door to repurchase its stock and pay dividends but **wasn't bringing in enough from its regular operations to cover them**. It **wasn't sustainable**. **Buybacks and dividends are generally paid out of leftover funds**.

Flannery warned it would take years to fix some of the company's businesses and laid out a future for three core markets – power, aviation and health care – while planning to jettison smaller divisions, such as transportation and lighting.

Despite the wait, there was no radical restructuring, and just as it had after Flannery spoke in June and in October, the **stock fell**. Shares drifted **below $20**.

Deep inside the disappointing three-hour presentation was a little-noticed warning from Jamie Miller, Jeff Bornstein's replacement as chief financial officer: The ghost of an insurance business that investors thought the company had rid itself of years before would prevent GE Capital from sending the $3 billion it had promised to headquarters.

In 2004, GE spun off most of its insurance holdings into Genworth Financial , and the remainder was largely sold to Swiss Reinsurance Co. two years later.

Top executives celebrated the move often in public statements. Immelt said that GE might not have survived the financial crisis if it hadn't shed the insurance operations, an example he and his supporters used to demonstrate his astute deal timing.

But when GE spun off Genworth, there was a chunk of the business, long-term-care insurance, that lingered. Policies designed to cover expenses like nursing homes and assisted living had proved to be a disaster for insurers who had drastically underestimated the costs.

The bankers didn't think the **long-term-care business** could be part of the Genworth spinoff. To make the deal more attractive, GE agreed to cover any losses. This insurance for insurers covered about 300,000 policies by early 2018, about 4% of all such policies written in the country. Incoming premiums weren't covering payouts.

Two months after Miller flagged the $3 billion, it was clear the problem was a great deal larger. GE was preparing for it to be more than $6 billion and needed to come up with **$15 billion** in reserves regulators required it to have to cover possible costs in the future. The figure was gigantic. By comparison, even after the recent cut, GE's annual dividend cost $4 billion.

The company won a waiver from regulators to allow it to build up the reserve over seven years rather than all at once. The numbers were dire enough, though, that GE held a special call for investors in January 2018, only days before it was scheduled to release earnings.

During the call, Flannery, who had promised in November that his review had left no stone unturned, said that he would spend some time – again – looking at options for all of the business units. He carefully avoided using the words "break up," but that's how it was interpreted: The GE lifer was considering dissolving the conglomerate. Investors he hoped to placate were unimpressed. GE shares fell almost 3% to $18.21.

The Best People

The General Electric board of directors had long been one of the world's most prestigious corporate appointments.

When Flannery took over as chairman from Immelt, the members included a dozen current or former CEOs, the dean of New York University's business school and a former chairman of the Securities and Exchange Commission.

The 17 independent directors got a mix of cash, stock and other perks worth more than $300,000 a year, and they also could receive up to $30,000 worth of GE products in any three-year period. The company also matched directors' gifts to charity. Upon leaving the board, a director could direct $1 million in GE money to a charity

For 36 years under Immelt and Welch, the board had largely followed the chairman's lead. One newcomer under Welch was so surprised by the lack of debate that the director asked a more senior colleague, "What is the **role** of a GE board member?"

"**Applause**," the older director answered.

Immelt, like many CEOs who are also their company's chairmen, made sure his board was aligned with him. In 2016, he pushed out Sandy Warner, a 24-year GE director and the former CEO of JP Morgan, after the two had clashed over Immelt's succession.

Warner thought it should be sped up, and that Steve Bolze, head of GE Power, was likely the man for the job. Immelt, dissatisfied with how Bolze was running Power, felt he had to force Warner off the board to torpedo Bolze.

Warner appealed to fellow directors in a closed session. Would they at least allow a debate on whether it was time to replace the CEO? The board stuck with Jeff Immelt, and Sandy Warner walked away for good. GE told investors in a securities filing he left because of new term limits and didn't disclose the dispute.

The Federal Reserve, when it was supervising the company, had urged the board to push back more on Immelt. The CEO often made it a point to go around the board table to ensure everyone had a chance to comment on a strategic decision. Directors rarely challenged him. To Immelt, it was proof he solicited input and encouraged debate.

Flannery had committed to revamping and shrinking the board after investors criticized its oversight of Immelt.

Board meetings at GE were an elaborate production. With 18 directors and another dozen regular attendees, the room was packed, and the agenda was, too. The plan being implemented in the first part of 2018 called for the board's size to be cut to 12. Half of the current directors would leave and three new ones would be added.

Just like previous CEOs, Flannery wanted to make the board his own, but he wanted more than a rubber stamp for his decisions. He wanted an active debate. It was one of the reasons he welcomed the inclusion of Trian's Ed Garden.

He also sought out Larry Culp, the former CEO of smaller conglomerate Danaher Corp. In the 14 years Culp ran the company known for its dental implants and medical devices, he had earned a reputation for tough deal-making and careful spending.

Danaher shares surged during his tenure, and he had retired at 52 years old after making more than $300 million. The company sometimes came up at GE board meetings as an example of a more functional conglomerate.

Before Culp joined the board in April, an adviser warned Flannery that Culp would be the man to replace him atop GE if things soured. Flannery said he didn't care; he needed the best people to help him right the listing ship.

Back to Sarasota

Before he was named the boss, John Flannery had enjoyed a reputation inside of GE for being a calm, confident leader who had revived GE's health-care business.

Folks liked to point to how he handled a presentation to 700 company bigwigs at GE's annual global management retreat in Boca Raton, Fla., in January 2015. It was a big deal to be chosen to talk at the company's ultimate networking event, and the presentations took weeks to prepare.

Flannery showed up for his without PowerPoint slides and wowed the audience with his quiet confidence and command.

Three years later, it was clear that being CEO of GE wasn't the same as presenting at Boca, especially when everyone was looking to you to save the company. Flannery was building a new reputation. He lacked self-confidence and sometimes flew off the handle. He could get flustered in high-pressure situations, and GE's stock price dropped anytime he opened his mouth.

The Electric Products Group conference was fast approaching in May in Sarasota, the setting for Immelt's last stand a year earlier.

Flannery's handlers were prepping him to avoid another setback. They had a long sheet of possible questions and appropriate answers. They did mock sessions and asked him the same questions in many different ways, so he could always steer to the best response.

Once on stage, the preparation couldn't hide Flannery's all-too-familiar message. The power business faced years of struggle and major changes at the conglomerate would take time to show results.

When pressed, Flannery declined to commit to GE's dividend for 2019. He gave the answer as a finance expert. The dividend will reflect the ability of the existing portfolio to pay it, so it may change with the portfolio. **If** a **company sold half** its **businesses**, it **couldn't pay** the **same dividend**.

The transparency was unusual. The CEO playbook called for him to stand by his commitment to the dividend, until he didn't. Flannery also defended his methodical approach to his latest review of the company's businesses.

"So being deliberate and then moving when things make sense as opposed to moving just because somebody wants us to is just not my style," he told the crowd. "So, I get that people want faster. I'm managing in a broader sense."

Flannery had spoken, and the stock had fallen 7%.

The Break Up

It was a measure of the challenges facing John Flannery that when **GE** was **dumped from t**he **Dow Jones Industrial Average** in June, he had bigger things on his mind.

An original member of the index, GE had been continuously part of the Dow since 1907. It was replaced by Walgreens Boots Alliance Inc., a drugstore chain with a market capitalization half as big as GE's.

It was a blow to GE's battered rank-and-file. Being dropped from the most widely cited stock index meant they no longer worked at one of America's 30 most prestigious companies.

Flannery was too busy to lament a move he saw as inevitable. In a week, he was going to unveil a plan to break up the company spawned by Edison and Morgan, and made and remade by Welch, Immelt and 10 other men before him. The moment weighed on the GE veteran with the enemies' list in his head.

The preparations were intense. Investment bankers, crisis PR consultants and other advisers were brought in to finish the plan and help Flannery construct a message he would deliver in a surprise announcement June 26.

He presented a plan that many expected back in November. **GE would spin off** its **health-care** division, **sell** its stake in **oil-field supply company Baker Hughes**, **cut** its **debt** and **streamline** its sprawling **corporate structure**. The stub of GE Capital was all that remained unresolved.

Almost as an afterthought, it was announced that **Larry Culp** had been **elevated** to **lead director**, **replacing Jack Brennan**, the **former CEO** of giant mutual-fund company **Vanguard** Group.

Culp (left) had the kind of successful industrial pedigree that investors, including Trian, wanted steering the board. Some directors thought GE should abandon its tradition of having the CEO also serve as chairman. Having a strong lead director was a good compromise.

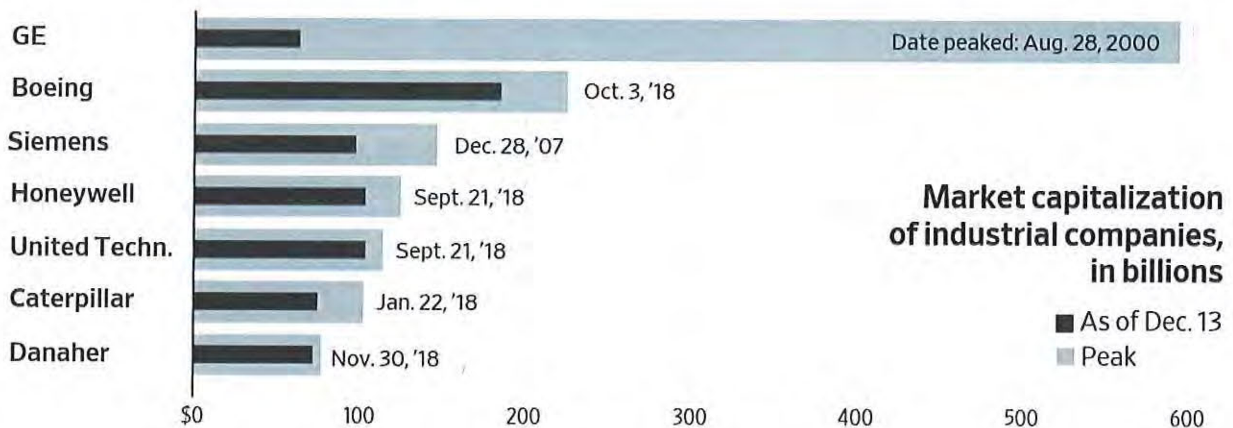
Culp grabbed the reins in the summer board meetings, drilling the new CEO on questions about the power business, scolding Flannery in front of directors for not knowing such nitty-gritty details as inventory levels. Given the sprawl of GE, few expected Flannery to have them at the ready.

In his previous life at the much smaller Danaher, Culp was known for immersing himself in its various companies. Rather than bringing executives to headquarters for reviews, he would travel to their offices and walk the factory floors.

For some on the board, the dressing down revealed a bigger problem. Flannery lacked the experience to juggle the steady flow of crises while also running the company that he was still learning about. Flannery felt he was bringing scrutiny to major issues, like how to best spend GE's money, that were previously glossed over.

But there was also a group on the board who already wanted to consider pushing Flannery out. They were worried he wasn't up to the job, and GE had no room for error. Even a normally manageable problem could mean disaster.

It came from the blades in **GE Power's newest line of heavy-duty gas turbines**. They were **failing**. **Exelon**, a big utility, was **forced** to **shut two power plants in Texas for repairs**. **GE would need** to **fix dozens** of **other turbines it had sold**. That promised to damp already weak sales and drive up maintenance costs in the struggling unit. GE was counting on that turbine to battle rivals such as Siemens.



There was more. **GE** was on pace **to miss** its **cash-flow targets** and would **have** to **take a charge of more than $20 billion** to **write off** the value of previous **acquisitions**, **including Alstom**. Flannery briefed directors in a conference call on Wednesday, Sept. 26.

By the **end of** the **weekend, Flannery was out**, **fired after 14 months**, the shortest stay at the top in GE's long history. The **new boss** was **Larry Culp**.

Culp hadn't been looking for the job when he joined the board, and didn't accept it lightly. He had retired three years before and was spending much of his time working with his alma mater, Maryland's Washington College, sitting on corporate boards and working as a senior adviser to Bain Capital, the private-equity firm.

He saw opportunity, though, and thought he would be a good fit. After all, he had 14 years of experience as a CEO and was only 55. Unlike Flannery, he acted decisively, **slashing** the **GE dividend again within his first weeks on** the **job**, leaving **investors** **to collect a token 1 cent per share each quarter**.

Like Flannery, he still planned to dismantle the company, now beset by investigations, lawsuits and waning confidence that it could pay its debts.

Federal criminal and civil investigators were looking into the ways GE Power had modified service contracts to wring out more short-term profits. They were **probing** how GE Capital disclosed its continuing liability for long-term-care insurance, as well as write-off Alstom and other deals.

Shareholders accused the company of defrauding them, citing the power contracts and insurance liability in their lawsuits. GE has denied the allegations. And **GE**, **once** the **owner of credit almost as good as** the **U.S. government**, **saw rating agencies drop** the **grades on its once-golden bonds**.

Like Flannery, when Culp spoke the stock sank. In a fidgety TV interview in November, he said the power business had yet to hit bottom. He declined to set new financial targets. **GE's stock soon fell below $7** for the first time since the financial crisis.

The **collapse** has been **so complete** that there is **little left to lose**. JP Morgan analyst Steve Tusa, who led the pack in arguing that GE was harboring serious problems, removed his sell rating on the stock this week. GE's biggest skeptic still thinks the businesses are broken but the risks are now known. The **stock** climbed back above $7 on Thursday, but is **down more than 50% for** the **year and nearly 90% from** its **2000 zenith**.

As far and as hard as the fall looked to those on the outside, it felt even farther and harder to those who had been on the inside, the true-believers like Jack Welch and Jeff Immelt and John Flannery, GE men through and through. Today as they try to reconcile how a company valued at nearly $600 billion 18 years ago is now worth a tenth of that, they can't help but feel the deep sting of the slights of history.

Since being forced out, Flannery has kept his distance from GE. The 56-year-old set out on a six-week road trip with his wife, a journey he long dreamed of taking but couldn't fit into his three decades of climbing to the top of General Electric. He was crisscrossing the American landscape that not long ago he was cruising above in business jets.

Flannery is unrepentant about refusing to be rushed into plotting a better course for the company he loved. He had unearthed serious problems, every decision was heavy, affecting thousands of factory jobs or a lonely retiree waiting for a dividend check. In exile, he remains certain that there was no quick fix no matter how much investors and the board wanted one.

Immelt, now 62, divides his time between Silicon Valley, where he joined a venture-capital firm and sits on the boards of four of its startups, and Watertown, Mass., where he serves as chairman of Athenahealth Inc., a medical-software company. In a sun-filled office in the rehabilitated brick factories of an old arsenal complex, Immelt is doing what he told colleagues he wanted to do after leaving GE: work with young, growing tech companies.

But the anguished way he left the company to which he'd devoted his life remains fresh. He feels misunderstood and unfairly portrayed. He has quipped to some in Silicon Valley that he takes solace in the fact that no one there watches CNBC or reads The Wall Street Journal.

Immelt sees his tenure as Sisyphean, a battle against gravity as he tried to break the company free of its dependence on Capital only to reveal unseen weakness in the power business that was supposed to be GE's strength.

"The notion of plugging financial services and industrial companies together, maybe it was a good idea at a point in time, but it is a uniquely bad idea now," Immelt said this week.

Welch, now 83, has slowed from his relentless peak, but was a ubiquitous presence on Nantucket this summer, never hiding his disdain for the man he chose to succeed him. He fumed about operational failures in the power business, and the execution of the pivot. Welch readily greeted old acquaintances with a grimace about the latest news of the company, saying he **gave himself** an A for the operation of his old shop, and an **F for his choice of successor**.

"I'm terribly disappointed. I **expected so much more**," he said this week. "I made the best choice I thought I could make, and it didn't turn out right."

The old chairman isn't sure the powerhouse of his time can be revived, but he hopes that Larry Culp can "build a new GE."

To Flannery, Immelt, Welch and the others schooled in Crotonville, Larry Culp's ascension punctured a deep and abiding conviction: General Electric made the greatest managers in the world, who could run anything better than anyone else. When the company they loved needed them most, though, the heirs to Edison's ingenuity had run out of ideas.

In the cruelest of codas, the last CEO of America's last great industrial conglomerate would be an outsider.

Bond Market Is Less Liquid

by Riva Gold and Christopher Whittall – WSJ – Jul. 23, 2018

Debt securities are harder to trade, causing investors to shift assets elsewhere.

Many bonds around the globe are becoming harder to trade, prompting some investors to shift to other markets and raising concerns about a broad decline in liquidity.

The **median gap between** the **price at which traders offer to buy and sell**, a **proxy** for the **ability to move in and out of markets quickly**, has **widened this year** across European corporate debt and emerging-market government and corporate bonds, according to data from trading platform MarketAxess. Trading in some derivatives has picked up as traders pull back from bond markets they view as increasingly unruly and expensive.

Liquidity, a **measure** of the **capacity to trade securities without significantly affecting** the **price**, has been a growing concern since the financial crisis. Traders say it has generally weakened across markets, including stocks, bonds and commodities, as the large banks that once kept these markets running have pulled back in response to limits on their risk-taking.

Trading Bonds Gets Harder

But recent episodes of **extreme market stress in Italy and emerging markets** have highlighted just **how quickly trading conditions can deteriorate**, exacerbating concerns that **markets** are becoming **more vulnerable to** a **shock as central banks slow** the **stimulus** they have **supplied for a decade**.

"The **global tide of liquidity** that **quantitative easing spurred** is **now slowly, slowly moving in reverse**," said Na-Rosenbaum, credit strategist at Wells Fargo Securities. "You're starting to see small hot spots emerge in parts of the market that don't have a natural support," he said, such as pockets of Europe and Latin America.

In May, **Italian** two-year government-bond yields notched their biggest one-day jump since at least 1989. The **surge** was **triggered by Italian politics**, but a **lack of liquidity** appeared to **amplify** the **moves** as the **gap between** the **price** at which traders were **willing** to **buy and** where they were **willing** to **sell surged** to **above half a percentage point**, **according** to Thomson Reuters data.

Alberto Gallo, of Algebris Investments' Macro Credit strategy, said it **took "around 10 times longer"** to **unwind a bet** on Italian bonds than normal and that it was **hard to get bids or offers on trades of more than $10 million in size**. Liquidity "was bad, and it's remained relatively bad" since May, he said.

The **median bid-ask spread** for **developed European high-yield credit** is **up 24% thi**s year, according to Market-Axess, while the spread for investment- grade credit has also widened. In the U.S.-- home of the deepest capital markets in the world – the spread on investment- grade credit is holding steady, but it has edged higher in high-yield credit.

For years, central banks helped paper over the decline in market liquidity that occurred when post-crisis regulation made it harder for banks to trade bonds. The current challenge coincides with **central banks withdrawing their longtime support for fixed-income markets**. The **Federal Reserve** is **shrinking its $4.5 trillion bond portfolio** and the **European Central Bank is trimming its bond-buying program**.

This past March, Gilles Pradère, a senior portfolio manager at RAM Active Investments in Switzerland, sought to reduce some of his exposure to investment-grade credit while this market was fairly calm. To his surprise, "we were confronted with a market which was already deteriorating quite significantly" in terms of liquidity, he said.

Many investors like Mr. Pradère are switching to derivatives contracts for assets they need to trade more regularly, where they say liquidity is better than in the underlying bond market.

Trading in Italian government- bond futures rocketed in May, more than doubling the previous year's monthly volume, according to Eurex. By contrast, Italian government-bond trading volumes fell 18% over the first half of 2018 from the previous year, according to MarketAxess, despite the pickup in volatility, which usually boosts activity. Traders say the greater ease of buying and selling Italian futures meant that market became the main channel for taking – or trimming – risk.

Similarly, volumes in emerging-market government debt are down 32%, according to MarketAxess. At the same time, credit-derivatives volumes rose substantially in the first half of 2018 compared with previous years, according to strategists at JPMorgan.

Mohammed Kazmi, a portfolio manager at Union Bancaire Privée, has been slowly switching bond positions into more liquid credit derivatives, as he expects episodes of turbulence. **During real high-risk events across bond markets**, "**no one is able to trade**," he said.

Trading derivatives has its own drawbacks, since they can be less precise instruments.

Meanwhile, parts of global bond markets have always had patches of illiquid trading, particularly during bouts of financial – market turbulence.

But investors say that it is getting worse, particularly in emerging markets.

For dol**lar-denominated government debt in emerging Europe, the Middle East and Africa**, the **median bid-ask spread** has **risen roughly 75% this year to around 22 cents**, according to MarketAxess.

Turnover ratios in local-currency emerging-market bonds – which **measure trading activity relative to bonds outstanding** – have **fallen sharply in recent years**, according to the Institute of International Finance.

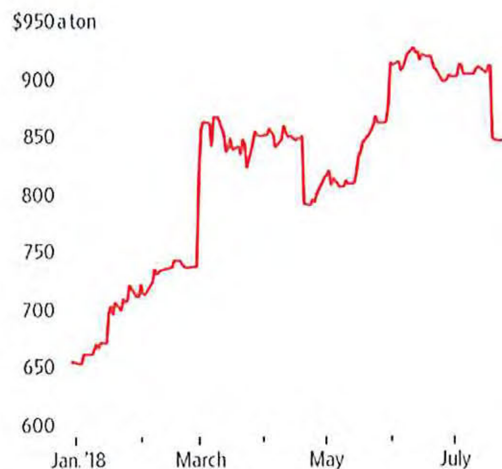
Have Domestic Steel Prices Peaked?

by Amrith Ramkumar – Jul. 26, 2018

Steel prices in the U.S. have **stalled after hitting their highest level in** a **decade in early June**, a sign to some analysts that companies facing higher input costs could soon get some relief.

Start of a Trend?

U.S. hot-rolled coil steel prices have fallen after getting a boost from tariffs on metal imports.



Source: FactSet

U.S. hot-rolled coil steel prices have **fallen to** about **$850 a ton** since hitting a fresh **multiyear high of $935 on June 11**, with investors assessing the full **impact** of **tariffs on steel and aluminum** imports. Thousands of requests for exemptions from the tariffs have been filed, and analysts are also trying to determine if protectionism will slow the global economy and lower demand for materials.

Analysts also say the surge in domestic prices so far this year means U.S. Steel is so far above global benchmarks that some companies will likely opt to pay the Trump administration's 25% import tariffs. As The Wall Street

Journal's Markets Newsletter noted on Thursday, some think domestic steel makers could also ramp up production, lowering prices.

And the **situation keeps changing**. President Trump said Wednesday the U.S. and European Union would resolve steel and aluminum tariffs.

The various factors have unnerved some investors and hurt shares of steel producers, which have lagged behind the commodity. U.S. Steel shares were down 2.4% in premarket trading Thursday. Nucor and AK Steel Holding also fell.

"The uncertainty is the killer," steel analyst Charles Bradford of Bradford Research said. "People are sitting on their hands waiting to see what happens."

Calmer steel markets could be a boon for some manufacturing companies contending with uncertain metals costs. Although many have existing supply deals in place and won't feel the impact of the levies until next year, others are starting to increase cost estimates.

Whirlpool cut its full-year profit outlook earlier this week as its costs continue to rise, with CEO Mark Bitzer saying that domestic steel prices "have reached unexplainable levels." Shares fell 15% on Tuesday, their largest one-day drop since 1987.

On Wednesday, Detroit's Big Three auto makers – General Motors Co., Ford Motor and Fiat Chrysler Automobiles – lowered their profit outlooks for 2018, and each said fallout from U.S. tariffs on steel and aluminum is weighing on their bottom lines.

Some analysts expect those prices to come down, but even a moderate decline could keep prices elevated. Citigroup expects domestic steel to remain around $850 a ton in the second half of the year, which could challenge industrial firms negotiating new contracts.

"We're actually not seeing the full impact in 2018 of what the steel or aluminum tariffs are, and it's anybody's guess how long those stay in place," United Technologies Corp. Chief Executive Greg Hayes said on the company's Tuesday earnings call.

Investors Change Tack as Rates Rise

by Akane Otani and Michael Wursthorn – WSJ – Oct. 18, 2018

The **wild swings in stock and bond markets this month** are another sign that investors are struggling to adapt to a world where **central banks** are **curbing** the flow of **easy money**.

Even after a sharp rally Tuesday, the Dow Jones Industrial Average has fallen 2.8% this month, on course for its worst start to a quarter since 2016. **Treasury bond yields**, meanwhile, have **shot to multi-year highs**, **pressuring stocks** from New York to Hong Kong to London **by making their yields less attractive**.

Many professional investors say the turbulence reflects the early stages of what they call a **rotation**, a pragmatic decision to **reallocate money away** from **assets** whose gains now appear at risk – in this case, the most highly valued stocks **such as technology-company** shares – **to safer sectors** such as bonds.

Minutes released Wednesday from the Federal Reserve's September meeting showed officials believe the economy is strong enough to absorb additional rate increases, heightening **investor expectations** that the **central bank will continue** on its course of **increases**. That could drive Treasury bond yields even higher.

Stocks of big U.S. companies once appeared **immune** to the **appeal** of **other assets because of record-low interest rates around** the **world**. **Now** rising yields are driving a **retreat from** previous winners such as **technology darlings Amazon**.com Inc. and **Google** parent Alphabet Inc.

It is the strongest sign yet that investors' faith in the post-crisis "risk-on" dynamic driven by central-bank stimulus is splintering.

Still, the broad swings in markets this month highlighted investors' struggle to discern just how much to rotate out of longtime winners and into under-loved industry sectors. Even with many investors believing that valuations of tech companies and other fast-growing stocks are over-extended, few are willing to pull out of those companies altogether.

"We're still meeting folks heavily concentrated in the U.S. and tech," said Darrell Riley, a portfolio strategist at money manager T. Rowe Price Group, which has been encouraging clients to pare back holdings of U.S. equities and diversify with stocks in Europe and Japan. The recent pullback has "been a wake-up call," he added.

The itch to diversify is being driven by the rise this month in the yield on the **10year U.S. Treasury note** to a **seven-year high of 3.227%,** a gain that reflects the impact of repeated Federal Reserve interest-rate increases and a healthy U.S. economy. The benchmark yield trailed the dividend yield on large-cap U.S. stocks for much of the post-financial crisis era, but now dwarfs the **S&P 500's dividend yield of 1.9%**, according to FactSet.

Investors' outlook for next year is growing more pessimistic. About 38% of the 174 fund managers overseeing $518 billion in assets surveyed by Bank of America expect the world economy to decelerate over the next year, the worst global growth outlook in a decade.

Attractive investments are getting harder to identify, said Michael Scanlon, a Manulife Investments portfolio manager. Over the past year, his fund has shed 10 of its holdings, concentrating its assets in some of its bigger positions. Those include Alphabet, Microsoft Corp., JPMorgan Chase & Co. and Berkshire Hathaway Inc.

"We own fewer stocks and we're more top heavy," Mr. Scanlon said. "There's fewer great investment opportunities out there."

Investors' optimism was punctured this month when **Fed Chairman Jerome Powell**, touting the economy's strength, **said** the **U.S. remained** "a **long way from neutral**"– the **point where interest rates would cease to become** either **restrictive or accommodative of growth** – even after a series of rate increases.

Many investors said their fears were further stoked ahead of last week's selloff after several companies, including paints and coatings maker PPG Industries Inc. and industrial- and construction-goods supplier Fastenal Co., warned that rising commodity costs, higher wages and trade tariffs were eating into their profit margins

While materials and industrials companies in the S& P 500 both shed more than 6% last week, investors' inflation fears also pressured the stock market's most expensive, best-performing sectors of the year.

Amazon.com shares have **fallen 8.6% in October**, on pace for their worst month since January 2016, while **Alphabet** shares have **lost 6.6%**. Those losses contributed to the Nasdaq Composite's 5% pullback this month, its harshest selloff in more than two years.

"They've become victims of their own success," said Michael LaBella, a portfolio man- ager at QS Investors.

In response, some **money managers** are **trying to build portfolios that can withstand** more **economic turbulence**. Lazard Asset Management, for example, has identified more than 200 companies throughout the world that have **high returns on capital** and **relatively predictable earnings growth**, **characteristics** that better **insulate businesses from** a **slowdown in global growth**, said Matthew Landy, a portfolio manager of the Lazard Global Equity Franchise Fund.

While a number of actively managed funds carry a significant exposure to tech, Mr. Landy's fund owns fewer tech stocks relative to its benchmark and more industrial companies, with TV-ratings company Nielsen Holdings PLC and waste-management services provider Stericycle Inc. among its biggest holdings.

To be sure, few believe that rates are at levels that would justify pulling out of stocks altogether. Yet the **tumult in** the **markets** has **encouraged investors** to **push money into sectors** that have been overlooked and are expected to be more **durable in** a **slowing economy**.

Utility-company stocks in the **S&P 500 have risen 1.9% in October,** the **only sector** in the broad index **to notch** a **gain for** the **month** so far, as investors sought to take advantage of **valuations** that they say are **attractive**, **hefty dividends and** the **relative stability** of such shares **during** an **economic pullback**.

With data continuing to point to strength in the U.S. economy, few are calling for an end to the nine-year bull market. But with interest rates widely expected to keep climbing, many experts said investors should prepare for further volatility.

For years, investors had "almost a false sense of security in the markets, apart from just a few short-lived situations," said Yousef Abbasi, global market strategist at INTL FCStone. As the Fed continues to raise rates, investors should expect more swings of the likes they have seen in October, he said.

GE Shows What Happens When Dividend Investing Goes Wrong

by James Mackintosh – WSJ – Nov. 1, 2018

Shareholders focus far too much on the **payouts** and **forget whether** the **business can sustain them**.

If you invested in General Electric **GE for the dividend**, you **discovered your mistake** on **Tuesday when** the **payout** was **slashed from 12 cents to 1 cent a share each quarter**. You were in good company in your error: Investors focus far too much on dividends, distorting corporate behavior and making it easy to forget that what matters isn't the payout, but whether the business can sustain it.

GE cut the dividend because it needs to hoard cash as it restructures and shrinks. Yet, even the token penny payout is a sign of the distortions the demand for dividends creates. The decision to maintain it is clearly down to the excessive value shareholders place on dividends.

There were **plenty of warning signs** that the **dividend was unaffordable**. Dividends are a way to return profits to shareholders, but GE's net income has been higher than the dividend cost in only four of the past 15 quarters – compared with all but two quarters in the entire period from 1989 to Lehman's failure in 2008.

Even excluding this week's monster $22.8 billion loss, **GE** has **paid out almost twice as much in dividends since 2012 as it made in net income**. **Every shareholder should have realized** that the dividend **was getting riskier**, even if they weren't looking at the falling amount of cash the business was producing.

In parallel, **GE slashed its capital spending from $15 billion in 2012 to** about **$8 billion over the past 12 months**, taking it back to where it stood in 1998 – before inflation. The **business has been eating its seed corn** recently, partly to maintain the dividend.

Dividends do, of course, **matter**. The prospect of eventual future **dividends** is the main reason shares have any value at all. Their **reinvestment** has **accounted for** the **bulk of long-term returns on stocks**. Better still, **dividends can instill discipline on executives**, **preventing** them from indulging their wildest **flights of fancy** by reminding them that they have to generate the cash to pay stockholders. **Chief executives given** a **free rein** and plenty of money have an unfortunate **tendency** to **engage in value-destroying takeovers**, **build fancy new headquarters** and **diversify into trendy new businesses about which they know little**. Better to pay dividends or buy back shares than fritter the money away.

However, dividends should be the result of a successful business throwing off cash, not something that executives strive to maintain even when the cash could better

be used elsewhere. GE is a classic case of the dividend being prioritized in the hope that something comes up.

For the major oil companies, something did come up, making it look as though steady dividends could be justified. Consider Royal Dutch Shell, the Anglo-Dutch oil company that is among the world's most reliable dividend payers. It resorted to borrowing to pay its dividend in 2015 and 2016 as it was hammered by the oil-price slump, with earnings below the cost of the dividend for six quarters in a row.

To save cash Shell offered investors the option to take their dividend in the form of new shares, and like GE it and other oil companies took an ax to capital spending. Unlike GE, Shell was rescued by the oil-price recovery, and is now generating enough cash both to pay the dividend and to buy back the shares it issued.

Shareholders like the **regular** Shell **dividend**, and can argue that Shell was right to keep paying it, since it all worked out OK. But even here it would have been less risky for the company and its long-term value had it scrapped the dividend when trouble hit, and borrowed less. Investors who need cash should sell some of their shares (for some of the smallest investors trading costs might be a bar, but at $10 a trade this is irrelevant for most). Instead, their irrational **attachment to steady payments** pushes companies to borrow and to cut back the business in bad times to maintain the payment.

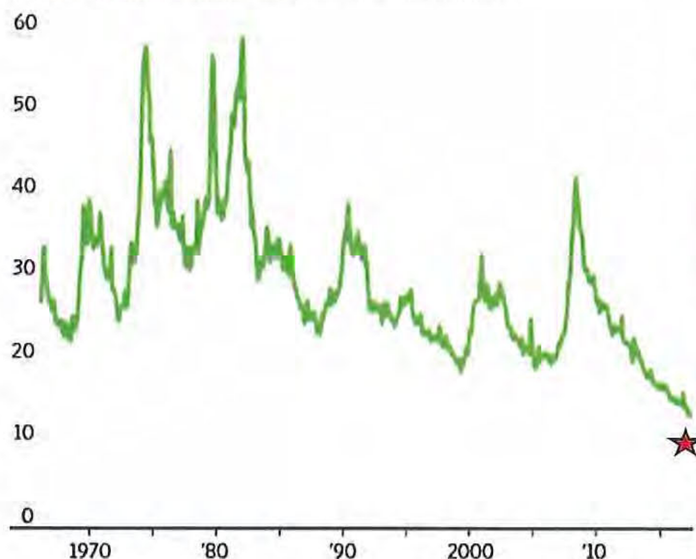
Those eagerly anticipating their next dividend check might be spluttering into their latte in horror at these views. But whether the dividend is paid out or not should make no difference to them. Shareholders own the company. When it pays out money to shareholders, it is worth less – by precisely the amount of the dividend. The shareholder's pocketbook is unchanged. Somehow investors still fail to notice this.

In an ideal world, companies would pay out cash when they have no good uses for it, and invest it in new projects only when justified by expected future profits. In an ideal world, shareholders would trust the board's judgment, and executives wouldn't be swayed by the latest fashions. In reality shareholders swing from encouraging massive overinvestment to demanding all cash be returned (now!) while **managers frequently ignore solid projects to game some ratio** currently in vogue with Wall Street, **or** set out on **empire-building** projects to boost their egos.

Demanding a solid dividend has merit as a way to limit empire-building, but investors should beware companies that make it a target to be met at all costs. **Shareholders need** to **keep** an **eye on much more than** the **quarterly payout** to **avoid their investments going** the **way of GE**.

Jobless Claims Lowest Since '69

by Sarah Chaney – WSJ – Jul. 20, 2018



Initial Jobless Claims last week decreased to a seasonally adjusted 207,000, the lowest level since December 1969.

The **number of Americans claiming new unemployment benefits fell last week to** the **lowest level in nearly five decades**.

Initial jobless claims, a **proxy for layoffs** across the U.S., decreased by 8,000 to a seasonally adjusted 207,000 in the week ended July 14, the Labor Department said Thursday.

This marks the lowest level for claims since December 1969, when there were 202,000 applications for unemployment benefits. Economists surveyed by The Wall Street Journal expected 220,000 new claims last week.

Thursday's claims figure underscores a theme playing out for years: Unemployment benefit applications have remained low, a sign that relatively few Americans are being laid off and seeking assistance in a buoyant U.S. job market.

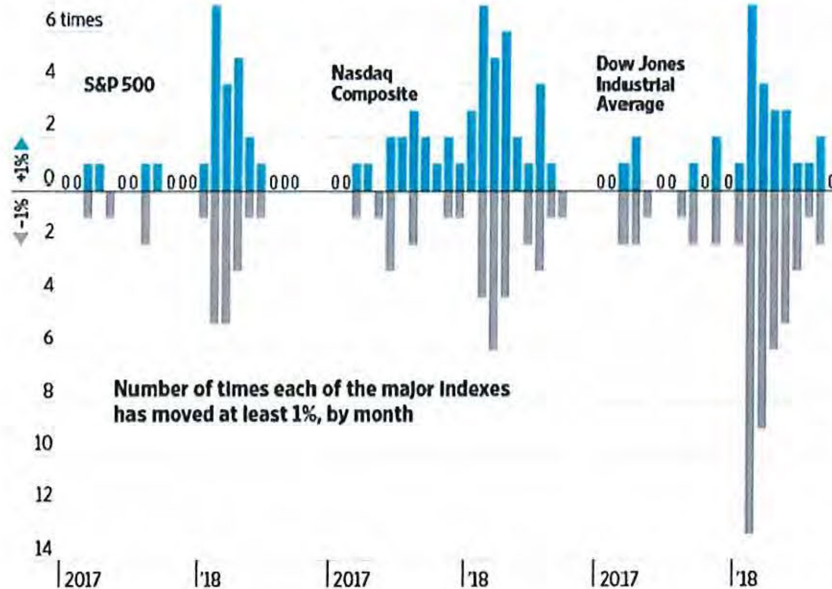
In June, about 14 initial jobless claims were filed for every 10,000 people in the labor force, Labor Department data show. This compares with pre-recession lows of 19 claims filed per 10,000 in April 2000 and 23 claims filed per 10,000 in the spring of 1969.

The historically low claims figure could in part represent difficulties with the seasonal adjustment of the data around the holidays.

Claims for the July 7 week, which included the Independence Day holiday, were revised to 215,000.

Lack of Volatility Sign of Investor Caution

by Amrith Ramkumar – WSJ – Sep. 12, 2018



Moves by major U.S. stock indexes have been subdued recently, a signal that investors are waiting for new catalysts before making big changes to their portfolios.

The **S&P 500 has gone 54 trading days without a move of 1% in either direction**, the longest such streak since January and just the fifth time the benchmark index has moved less than 1% on 50 consecutive sessions in the past five years, according to Dow Jones Market Data.

It last moved at least 1% on June 25, falling 1.4% as trade fears gripped global markets. The Dow Jones Industrial Average and Nasdaq Composite have also been relatively calm recently, though certain sectors have at times been volatile.

Although trade barbs have intensified lately, with **President Trump** on Friday threatening **tariffs** on an additional $267 billion in Chinese goods, analysts say the **market has grown more comfortable with** the rhetoric and is **now waiting** for a resolution.

At the same time, investors also appear more confident that the U.S. economy can withstand gradually rising inflation and interest rates, with major indexes hardly budging after Friday's wage-growth figure matched the strongest monthly reading since 2009.

Analysts say investor comfort with the major issues dictating market moves shows many are looking for changes to that backdrop before adjusting their portfolios, a sign that the recent quiet period could continue as the third quarter comes to an end.

Trading volumes have generally been below average in recent weeks even as traders returned from the Labor Day holiday.

"The markets look like they're a little bit more in a '**wait-and-see**' mode where they're used to a lot of the positioning," said Shawn Cruz, manager of trader strategy at TD Ameritrade. "It's in stark contrast to what happened earlier in the year."

Quiet summer trading has also continued into September, with **lower-than-average trading volumes also contributing to** the **recent tranquility**, analysts say. Roughly 6 billion shares on average have been traded daily on New York Stock Exchange and Nasdaq exchanges since the start of July, compared with the year-to date average of 6.7 billion, according to Dow Jones Market Data.

And even though certain sectors have been volatile in recent weeks, other groups have often picked up the slack to stabilize the broader market.

The S& P 500 information-technology sector fell for four consecutive sessions to start September, including a 1.5% drop Sept. 5, but other groups including **telecommunications** shares, industrial stocks **and** the **utilities** sector **rose** to largely offset the losses. Some analysts view that trend as a sign of strength because previous dips in the market's best-performing sector have often spread and sparked broader volatility.

The S&P 500 hasn't moved more than 1% in either direction in more than 50 days, one of the longest streaks in recent years.

Instead, Wall Street's "**fear gauge**," the **Cboe Volatility Index**, has **largely been flat** since spiking as stocks tumbled in February.

The VIX, which is based on the price of S&P 500 options, is still near last year's historic low.

It also was low the last time the S&P 500 went this long without a 1% move, in January.

That streak of 94 days was the longest since December 1995, as the S& P 500 surged before tumbling during February's bout of volatility.

With **corporate profits** already **growing at** their **quickest pace in years**, some analysts think it will

take a similar wave of selling or unexpected shift in economic or earnings data to jolt markets out of their recent lull.

Others think the key lies in ongoing trade discussions with China and the European Union.

Months of rhetoric between the world's two largest economies have some investors generally ignoring day-to-day headlines.

While stocks climbed after President Trump said the U.S. and Mexico had reached a trade agreement Aug. 27, the gains were contained as analysts looked ahead to progress with Canada, China and the EU.

Recent meetings between the U.S. and Canada have yielded little progress, but some investors say the most important trade talks are with China.

Growth in the world's largest consumer of a wide range of products and commodities already has shown signs of slowing, so analysts are largely shaking off rhetoric and keeping an eye on planned November meetings between Mr. Trump and Chinese leader Xi Jinping.

The two sides have laid out a path to end their fight by then, a broader goal that has taken attention away from the continuing threats.

"Markets are starting to look past that and **waiting to see what actually gets done**," Mr. Cruz said.

Long-Dormant Inflation Heats Up

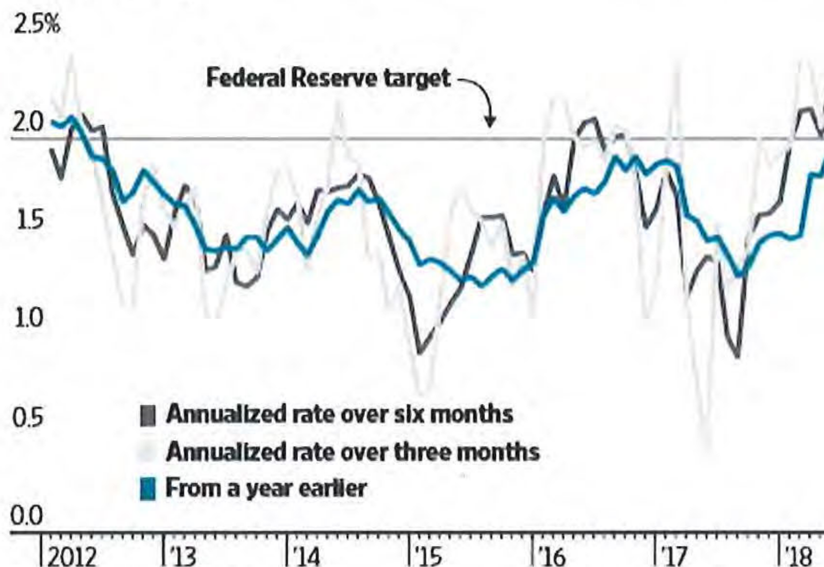
by Harriet Torry – WSJ – Jun. 30, 2018
Paul Kiernan, Annie Gasparro and Jacob Bunge contributed to this article.

Inflation in the **U.S.** is **back** after more than half a decade of falling short. A price measure **hit** the **Fed's target after running below** it **for six years**.

A price measure watched closely by the Federal Reserve hit the central bank's target after running below it every month for six years, as a strong labor market nudges wages higher and robust economic growth squeezes slack out of the economy.

Though inflation hits consumers and businesses with more expensive purchases and loans, the Fed believes a little bit of inflation at a consistent and predictable rate is needed to keep the economy growing steadily and at a healthy pace.

The **Commerce Department's price index for personal-consumption expenditures, excluding food and energy costs, rose 2% in May from a year earlier** after running below that mark every month since April 2012. The Fed prefers that measure because it strips out categories that make it hard to see underlying inflation trends.



The central bank also looks at a broader measure of inflation that includes food and energy costs. That measure was up 2.3% in May from a year earlier, the largest increase since March 2012, driven in part by higher gasoline prices.

The broader inflation measure has hit the 2% target a few times in recent years, typically when gas or food prices rose, but it tended to fall back below the target for much of the expansion. Its average is 1.3% since May 2011.

Economists have blamed factors like weak economic demand, a strong dollar and a slowly recovering labor market for low inflation in recent years. The strong dollar makes imports cheaper, and soft labor markets hold down wages.

Structural factors are also thought to have played a role, like an aging population spending less, cheap imports due to globalization and the "Amazon effect" of consumers spending less on goods online.

But demand is picking up and unemployment falling. Many forecasters estimate the **U.S. economy grew** at near 4% or even **faster in the second quarter**, **twice** the **rate** of the **2% average for much of the expansion**. More demand tends to push prices higher.

"Gas in our area has gone up quite a bit" over the past year, said Herb Houck, a funeral director from Reading, Pa. "Supermarket is about the same, it goes up all the time," the 63year old added.

In recent months, businesses have seen their own costs rise, in part because of high energy prices and labor shortages putting some mild upward pressure on wages. Now, some businesses say they are trying to pass those costs on to consumers.

Tyson Foods Inc., the largest U.S. meat company by sales, figures rising freight rates will cost it $155 million in its current fiscal year. In response, it is raising prices for chicken, pork and beef, counting on consumers' appetite to help the company negotiate with restaurants and retailers.

"It's not an easy discussion to have with customers," Tom Hayes, Tyson's chief executive, said at an event in May. "We will do our best to make sure we get all the value back for our shareowners and for ourselves."

General Mills Inc. has raised some prices in recent months and started selling smaller boxes of cereal at a higher price-per-ounce, thanks in part to higher freight and food commodity costs. Chief Executive Jeff Harmening said grocery stores have been hesitant to pass those higher costs on to customers, but that they understand the pressures manufacturers face. "We don't need to fully offset the inflation, but we need just a little bit of pricing to go along with efficiencies," he said.

Trade tariffs could shift the inflation picture further. Tariffs impose a duty on goods imported to the U.S., costs that companies may try to pass to consumers. The Trump administration has imposed tariffs on washing machines, steel and aluminum and threatens tariffs on cars and as much as $250 billion worth of goods imported from China.

"Our goal continues to be to pass the cost increases on to the marketplace," Timothy Hassinger, chief executive of **Lindsay** Corp, which makes crop-irrigation systems, said on Thursday. "We've led the industry this year in the implementation of the steel surcharges. Our intention is to continue with this strategy."

For the broader economy, hitting the 2% inflation target is "encouraging," Michael Feroli, chief U.S. economist at JP-Morgan Chase & Co., said in an interview. It means the economy is in better balance after slow growth in the wake of the severe 2007-2009 recession. However, "touching 2% isn't grounds for victory" after the long run of low inflation, Mr. Feroli said. Fed officials "want to see it sustained."

The central bank won't be surprised by the latest readings. When inflation slowed last year, officials looked past the drop, believing it was due to temporary factors, including one-off cuts in cellphone-service plans.

Fed Chairman Jerome Powell in June projected that "later this summer there's a good chance that headline inflation will move up above 2% because of (higher) oil prices."

Now, officials need to consider how high, and for how long, they should let inflation rise. With the expansion entering its 10th year in July and unemployment at an 18year low, the central bank has been raising short-term interest rates to prevent the economy from overheating.

The Fed drew some unusual attention from the White House on Friday.

Lawrence Kudlow, President Donald Trump's top economic adviser, said on Fox Business Network that he hoped the central bank would move interest rates up "very slowly" – breaking with a 25-year White House precedent of generally refraining from commenting on monetary policy in deference to central-bank independence.

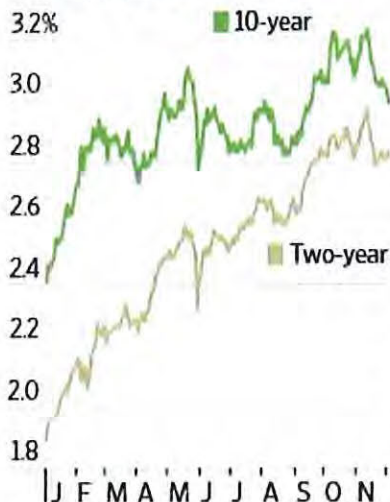
Fed officials voted in June to boost their benchmark rate by a quarter point to a range between 1.75% and 2%. They have penciled in two further quarter- point increases for 2018 and project more increases to over 3% by 2019.

Fed officials estimate core inflation will steady at 2% this year and inch up to 2.1% in the two following years.

Fifty-four economists surveyed by The Wall Street Journal recently said on average the **Fed would tolerate annual core PCE inflation as high as 2.5% before raising rates more aggressively** than planned.

Markets Send Conflicting Signals

by Akane Otani and Georgi Kantchev – WSJ – Dec. 4, 2018
Mike Bird contributed to this article



Global stocks and oil prices flew higher Monday after an easing of geopolitical tensions, but bond investors signaled the **anxiety** that has **gripped markets** for the **past two months** has **yet to abate**.

The divergent market paths emerged after **President Trump and Chinese President Xi Jinping reached** a **deal Saturday** to **temporarily spare Beijing from tariffs** that were planned to go into effect at the start of 2019. Investors received more good news over the weekend when Russia and Saudi Arabia agreed to extend the global cartel's ef- forts to stabilize oil markets.

The Dow Jones Industrial Average and S& P 500 both climbed 1.1%, while U.S. crude oil surged 4% – its biggest one-day gain since June.

Yet the yield on the **10-year U.S. Treasury note**, which typically rises with stocks when investors are optimistic about growth, **closed below 3%** for the first time since September.

That slide **squeezed** the **difference between 10-year and two-year Treasury yields** to around 0.16 percentage points – the narrowest gap since 2007 and a **sign** many **investors** are **pricing in slower growth ahead**. Other assets that tend to retreat when investors are feeling confident rallied, with gold prices posting their biggest one-day gain in a month.

Markets' mixed messages Monday led some observers to say there isn't likely to be much of a respite from the kind of volatility that has shaken investors this fall and led some to question the durability of the nine-year-old bull market for stocks.

With or without a trade resolution, **both global and domestic growth appears to be slowing**.

And although stocks rallied last week, lifted by bets that the Federal Reserve would raise rates more slowly than initially expected, many say the central bank's path remains uncertain.

"I hadn't talked to many people who were ready to cannonball in," said Michael Antonelli, equity sales trader at R.W. Baird & Co. " The **trade** war is a **diversion from** the **real problem**, which is a **slowing economy**."

Markets had been on edge throughout November. U.S. crude oil logged its worst month since 2008, 10-year Treasury yields slid and stocks wavered between gains and losses.

Analysts had attributed some of that choppiness to market-specific concerns, such as fears of an oil glut and worries about sliding technology shares. But many also had said that the prospect of trade tensions slowing global growth had kept markets under pressure throughout much of the year.

"After a few rough months, we were due for a relief rally and the trade news is helping fuel it," said Geoffrey Yu, head of the London investment office at UBS Wealth Management.

Indications that the U.S. and China were open to pursuing further talks helped reassure investors that the two countries are able to avert a worst-case scenario. Ahead of the Trump-Xi meeting, some forecasters didn't think the tariff increase could be avoided.

"Trade is a big deciding factor for markets because it affects profit growth, so the U.S. China willingness to continue talks is certainly positive," said Sam Stovall, chief investment strategist at CFRA.

After the gains of the past week, the S& P 500 is up 4.4% for the year, while the Dow industrials have risen 4.5% and the Nasdaq Composite has advanced 7.8%.

Technology shares that had been pummeled in recent weeks rebounded Monday as well, with Amazon.com jumping $82.19, or 4.9%, to $1,772.36 and Apple climbing 6.24, or 3.5%, to 184.82. Auto shares rallied, too, with General Motors and Ford Motor each adding more than 1%.

Trade-focused economies in Asia and other emerging markets gained. The conflict between the U.S. and China had heavily hit stocks and currencies in those regions.

At midday Tuesday, Japan's Nikkei Stock Average was down 0.7% after rising 1% Monday. China's Shanghai Composite, which rose 2.6% Monday, was flat early Tuesday.

Some analysts cautioned that even with the temporary deal between the U.S. and China, markets could still lose steam in the coming months. Even though the two countries have managed to work out a short-term truce, they still have yet to resolve broader differences, analysts and economists said.

"The result is better than the market expected, but the huge divide remaining continues to **suggest** a **bumpy ride ahead**," said Citigroup China economist Li-Gang Liu.

Corporate Borrowing Rates and Yields

Bond total return index	Close	— Yield (%) —		— 52-Week —		Total Return (%)	
		Last	Week ago	High	Low	52-wk	3-yr
Treasury, Ryan ALM	1440.150	**2.949**	2.997	3.154	2.190	**-1.436**	0.899
10-yr Treasury, Ryan ALM	1686.174	**2.990**	3.070	3.232	2.330	**-2.603**	0.190
DJ Corporate	n.a.	**n.a.**	4.460	n.a.	n.a.	**n.a.**	n.a.
Aggregate, Barclays Capital	1913.250	**3.540**	3.570	3.660	2.670	**-1.448**	1.548
High Yield 100, Merrill Lynch	2873.130	**6.786**	7.083	7.167	5.406	**0.495**	5.633
Fixed-Rate MBS, Barclays	1976.210	**3.650**	3.710	3.810	2.860	**-0.471**	1.275
Muni Master, Merrill	522.770	**2.706**	2.790	2.908	2.058	**0.519**	1.737
EMBI Global, J.P. Morgan	764.465	**7.136**	7.326	7.372	5.507	**-4.850**	4.170

Sources: J.P. Morgan; Ryan ALM; S&P Dow Jones Indices; Barclays Capital; Merrill Lynch

Parties Reach Settlement in MDU's ND Gas Rate Case with Little Controversy

by Monica Hlinka – Regulatory Research Associates (RRA)
An Affiliate of S&P Global Market Intelligence – Jul. 20, 2018

A **settlement** has come to light in **MDU** Resources Group Inc.'s pending **gas distribution rate case** that is before the **North Dakota Public Service Commission**. The settlement among MDU, the commission staff and various federal executive agencies calls for the utility to increase gas rates by $2.5 million, or 2.3%. The rate increase reflects a **9.4% return on equity** (**51.00% of capital**) and a **7.23% rate of return**. The July 19 settlement is silent with respect to rate base.

The agreed upon 9.4% ROE is slightly below the 9.55% average ROE accorded gas utilities nationwide in cases decided during the first half of 2018 and the 9.72% average ROE authorized for gas utilities in cases decided during 2017, as calculated by Regulatory Research Associates, an offering of S&P Global Market Intelligence. For a discussion of historical rate of return authorizations, refer to Major Rate Case Decisions Quarterly Update.

MDU Resources Group

Present case	Rate change ($M)	ROE (%)	ROR (%)	Rate base value ($M)
Company revised request	3.6	10.00	7.54	136.9
Staff revised recommendation	0.9	9.23	7.15	132.3
Settlement	2.5	9.40	7.23	NA
Previous case (PU-13-803)[1]				
Company request	6.9	10.00	7.88	79.2
Settlement/PSC authorized	4.3	10.00	7.88	NA

Data as of July 20, 2018.
NA = not available; ROR = rate of return
[1] Last rate case covered by RRA. There was a small rate case (C-PU-15-090) decided in November 2015, in which the PSC authorized MDU a $2.6 million gas rate increase based on a 9.5% return on equity and a 7.34% rate of return.
Source: RRA, an offering of S&P Global Market Intelligence

The **settlement resolved** the **revenue requirement issues with respect** to the **2017 federal tax overhaul** that **lowered** the **corporate federal income tax rate to 21% from 35%**. The parties agreed that MDU would amortize all resultant plant-related excess deferred income taxes using the average rate assumption method, while all non-plant related excess deferred income taxes would be amortized over a three-year period.

With the rate increase being less than the authorized interim rate increase, MDU would submit a **refund plan** within 30 days of a final commission order approving the agreement.

MDU and the other parties did not reach agreement with respect to the utility's proposed **System Safety and Integrity Program**, or **SSIP**, and associated recovery mechanism. The utility proposed to establish an SSIP, which is a replacement program for early vintage steel pipe, early vintage plastic pipe, low pressure systems and inside meters. The proposed SSIP mechanism would allow the utility to "**proactively address pipeline integrity** while potentially avoiding costly rate cases and providing customers with more gradual rate increases over time." MDU estimates that the projected investment associated with the SSIP in 2019 would be approximately $6 million.

According to the PSC staff, the proposed SSIP, "lacks (1) a clearly articulated plan laying out the timetable, performance metrics, and project selection process for the

replacement of eligible infrastructure, (2) a well-defined cost recovery mechanism, (3) a demonstration of customer benefit, and (4) a demonstration that the program is the least-cost option for achieving that customer benefit." Furthermore, the PSC staff noted that the utility failed to demonstrate the "necessity and prudence" of the proposed projects on "grounds of normal replacement, system expansion, or reliability improvement."

The **parties agreed** that the determination of whether to adopt the program and mechanism would be an **issue left to** the **commission to decide**.

Overview of the Proceeding

This proceeding (Case No. **PU-17-295**) was initiated July 21, 2017, when MDU filed for commission approval of a $5.9 million, or 5.4%, permanent gas rate increase. The **requested** increase reflected a **10% return on equity** (**51% of capital**) and a **7.54% return** on an average rate base valued at $135.5 million for a calendar-2018 test year. The utility later revised its request to reflect the changes in the federal tax law and supported a $3.6 million rate increase based on the aforementioned rate parameters and a $136.9 million rate base.

On Feb. 27, the commission approved MDU's request to revise its interim rate increase. MDU sought to implement a $2.7 million interim rate increase versus the $4.6 million that the commission approved in September 2017. The new interim rates went into effect on March 1, 2018.

Prior to the settlement, the PSC staff recommended that the commission authorize MDU a $867,496 gas rate increase reflecting an 9.23% return on equity (51% of capital) and a 7.15% return on an rate base valued at $132.3 million.

MDU Wins FERC Approval to Form New Holding Entity

by Saad A Sulehri – S&P Global Market Intelligence – Jun. 25, 2018

MDU Resources Group Inc. on **June 19 received** the **F**ederal **E**nergy **R**egulatory **C**ommission's **approval** to implement a plan of **reorganization**.

Under the reorganization plan, **Montana-Dakota Utilities Co.**, an electric utility division of MDU serving 143,000 customers in four states, **and Great Plains Natural Gas Co.**, a natural gas utility division that serves customers in two states, **will merge** and **become** a **wholly owned subsidiary** of **MDU Resources Group Inc. named Montana-Dakota Utilities Co.**

Great Plains Natural Gas **will become** a **division of Montana-Dakota Utilities**.

The **reorganization** is **consistent** with several merger standards, such as public interest, **will not harm consumers** and affect how the utility provides utility services or result in any regulatory change, **FERC said** in its order. **Also**, the commission found, the implementation **will not** result in a **change** in **rates**, and the **consolidated holding company capital structure will remain as** the **current** company's consolidated capital structure. (FERC Docket EC18-51)

The **utility** has **also filed with** utilities **regulators** in **Minnesota**, **Montana**, **North Dakota**, **South Dakota** and **Wyoming for approval of** the **reorganization**.

Minutes of Fed Lift Yields on Bonds

by Akane Otani – WSKJ – Oct, 18, 2018

U.S. Treasury yields wobbled but wound up higher Wednesday, after **Federal Reserve minutes showed officials believe** that **economic strength justifies continued interest-rate increases**.

The yield on the benchmark 10-year U.S. Treasury note settled at 3.178%, compared with 3.158% Tuesday.

Yields, which **rise as bond prices fall**, slipped overnight and held on to declines after data showed U.S. housing starts fell more than expected in September, adding to what has been a streak of disappointing data for the housing sector.

Weak economic data can spur demand for Treasurys and other haven assets, **sending yields lower**.

Yet as U.S. stocks pared their losses around midday, bond yields bounced off their lows, remaining higher for the day after the Fed released minutes from its Sept. 25-26 meeting.

Officials had voted unanimously at that meeting to raise short-term interest rates by a quarter percentage point. The Fed's minutes showed that, while most officials believe the central bank will have to raise rates once more in 2018 and around three times in 2019, they are less in agreement about how far interest rates will have to rise to reach a **neutral level**—the **point at which rates neither drive up nor stall economic growth**.

Comments from **Fed Chairman Jerome Powell** earlier in the month indicating he believed the **economy** was **still** "a **long way from neutral"** had **jolted** the **bond market** a **few weeks ago.**

"There was a sense before that the Fed was going to be really cautious about things as they move through the cycle ... then we had the strong employment data and I think it was like, 'Oh, maybe not,'" said Kathy Jones, chief fixed- income strategist at the Schwab Center for Financial Research.

Bond-market volatility appears to have wound down since the start of the month. Barring a surprise jump in inflation, "we anticipate [yields] will be relatively contained," Ms. Jones said.

Moody's Expects U.S. Utilities to Lean More on Debt after Equity Spike

by Darren Sweeney – Dec. 7, 2018

U.S. regulated electric and gas utilities are **expected** to **return** to a **heavier reliance on debt to raise capital after** a significant boost in **equity issuances in 2018** to offset the financial impact of **federal tax reform**.

"In **2018**, the sector turned to a more **balanced mix** of **debt and equity** to meet external capital needs and support credit quality. **In 2019 and 2020**, **new debt** will **again dominate** the **mix**," **Moody's analysts wrote** in a **Dec. 3** report. "We see the sector relying on an external capital mix of 63% debt and 37% equity in 2018 and 74% debt and 26% equity over the 2019-2020 period."

Moody's estimates the **regulated utility sector** will issue about **$24 billion** in **common and preferred equity** in **2018**, a **significant spike from** the **three-year average** of about **$8 billion from 2015 to 2017**.

"We think the sector will raise over $15 billion in equity in 2019 and another $10 billion in 2020," analysts wrote. "In comparison, we have the sector issuing almost $11 billion in equity through the first half of 2018."

Largest 2018 equity issuances by regulated electric and gas utilities

Company	Equity Issuance ($B)
Sempra Energy[1]	6.3
CenterPoint Energy Inc.	3.7
FirstEnergy Corp.	2.5
Dominion Energy Inc.	2.3
Duke Energy Corp.	2.0
NiSource Inc.[2]	1.7
Consolidated Edison Inc.[3]	1.3
PPL Corp.	1.0
Southern Co.	1.0

As of Dec. 3, 2018.
Above values include common equity and preferred shares.
[1] Includes the remaining forward sale of common stock of about $1.8 billion, based on the initial forward price, and is expected to be settled prior to Dec. 15, 2019.
[2] Includes ATM program.
[3] Includes $1.2 billion in the form of an equity forward that has not yet settled.
Sources: Moody's Financial Metrics; Moody's estimates; company presentations and SEC filings

Moody's lists Sempra Energy, CenterPoint Energy Inc., FirstEnergy Corp., Dominion Energy Inc. and Duke Energy Corp. as the top five companies that decided to tap equity markets in 2018 to strengthen their balance sheets.

While not directly tied to tax reform, FirstEnergy used a $2.5 billion equity infusion from a group of prominent and active investors to help cut holding company debt as it severed ties with its unregulated business.

Meanwhile, Duke Energy said in February that it will issue $2 billion in equity this year to compensate for the near-term hit to its balance sheet and credit metrics caused by tax reform.

Moody's on Aug. 1 removed its negative outlook on Duke Energy's holding company credit ratings based on the "regulatory response to tax reform, our issuance of equity and overall cost management," Duke Energy Executive Vice President and CFO Steven Young said in an interview.

Dominion Energy in late March announced it would pursue a combination of asset sales, debt financing and equity offerings to reduce parent-level debt and boost the company's near-term credit profile.

Southern Co. has also focused on shedding assets and raising equity to help offset lost revenue and support credit metrics. The company's original equity need from 2018 through 2022, announced in May, was $7 billion. Proceeds from several transactions have reduced that to $2.4 billion, Southern Executive Vice President and CFO Andrew Evans said on a Nov. 7 earnings call.

"We've seen a bit of a mixed bag," Moody's analyst Ryan Wobbrock told S&P Global Market Intelligence in November at the Edison Electric Institute Financial Conference. "We knew that after tax reform, regulatory decisions on how to implement tax reform treatment would be a big deal. We also knew that companies would try to do some self-help and do things like issue equity."

"Most of those companies are in the Baa2 rating category, so they really don't want to go to Baa3," Wobbrock added.

The analyst said the decision to sell assets to help support the balance sheet is "sort of a double-edged sword."

"You're getting asset sale proceeds to delever, but you're also losing, in Southern's case, a regulated utility that produced stable, predictable solid cash flow," Wobbrock said.

NiSource Inc., PPL Corp. and Consolidated Edison Inc. also are among the largest equity issuers for the regulated utility sector in 2018, according to Moody's.

The rating agency in June downgraded its outlook on the regulated utilities sector to "negative," citing lower cash flows and **higher debt levels from federal tax reform along with increased capital spending**. The move came after **Moody's in January lowered** its **ratings outlook** to **"negative" from "stable" for 24 regulated utilities** and individual holding companies **following** the **reduction** in the **corporate tax rate** to **21% from 35%.**

"When we went negative on 24 companies and really what caused us to go negative on the sector is that this **tax reform issue** is **affecting every company**," Wobbrock said. "It's **not** an **isolated** incident. It's **not one state**. ... [T]his was a unique occurrence. Tax reform happened immediately and everyone had to scramble to adjust to it."

In **November**, the **rating agency maintained** a **negative outlook** on the **regulated utility sector** for **2019**.

"The outlook for the U.S. regulated utility sector remains negative because of **increasing debt to fund capital spending and dividends**, as well as **stalled cash flow** growth **as utilities** continue to **sort out** the **implementation** of **tax reform with state regulators**," analysts wrote. "The **combination** of these factors **means** the **ratio of funds from operations** (**FFO**) **to debt will remain weak**."

U.S. Downgrades Exceed Upgrades

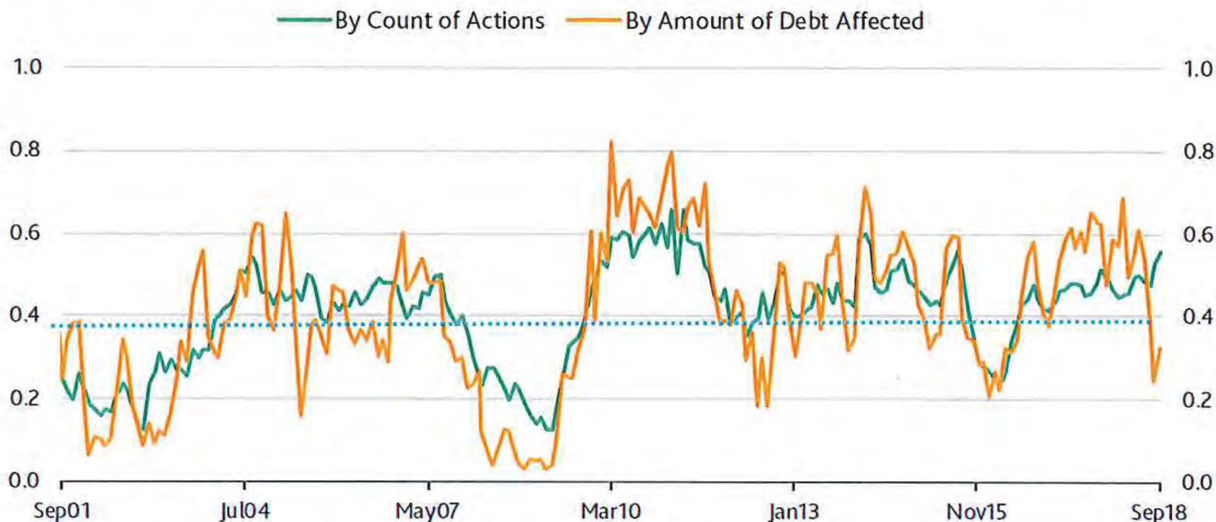
by Michael Ferlez – Moody's Analytics – Nov. 8, 2018

U.S. rating change activity remained weak, with **positive rating changes for** the **latest week** accounting for **30% of total activity**, the **same as** in the **prior week**. This continues the recent trend in which the number of downgrades exceeded upgrades. Activity was concentrated in the industrial sector and spread across a number of different industries. The **notable downgrade** last week was **General Electric Company**, which had its **senior secured credit rating cut two-notches** to A3. The **downgrade** will **impact roughly $113 billion in debt**. Only three firms received upgrades last week. Energy firm Parsley Energy LLC was upgraded from B2 to B1. The upgrade is consistent with a broader trend of upgrades among U.S. oil firms.

Rating change activity in **Europe** improved last week after being held down for several weeks following the downgrade of Italy's sovereign debt rating. **Upgrades outnumber downgrades**, accounting for **60% of total rating change activity**. Upgrades included Dutch semiconductor manufacturer, NXP Semiconductors N.V., which was upgrades to A2 from A3 while Finish, Stora Enso Oyj, was upgraded to Baa3 from Ba1. Together, two upgrades impacted $7.4 billion. Only two firms were downgraded, impacting $748 million in debt.

FIGURE 1

Rating Changes - US Corporate & Financial Institutions: Favorable as % of Total Actions



* Trailing 3-month average

Source: Moody's

NABE Outlook Survey - December 2018

National Association for Business Economists – Dec. 2, 2018
https://www.nabe.com/NABE/Surveys/Outlook_Surveys/December_2018_Outlook_Survey_Summary.aspx

Economic Growth Continuing in 2019,
But with Trade Tensions Adding t0 Downside Risk

The December 2018 NABE Outlook presents the **consensus macroeconomic forecast of a panel of 53 professional forecasters** (see last page for listing). The survey, covering the outlook for the end of 2018 and each quarter of 2019, was conducted October 31-November 15, 2018. The NABE Outlook Survey originated in 1965 and is one of three surveys conducted by the National Association for Business Economics (NABE); the others are the NABE Business Conditions Survey and the NABE Economic Policy Survey. Founded in 1959, the National Association for Business Economics is the professional association for those who use economics in their work. NABE has over 2,800 members and 40 chapters nationwide. Gregory Daco, Oxford Economics, Chair; Julia Coronado, MacroPolicy Perspectives; Robert Fry, CBE, Robert Fry Economics; Jack Kleinhenz, CBE, National Retail Federation; Chad Moutray, CBE, National Association of Manufacturers; Yelena Shulyatyeva, Bloomberg LP; and Ryan Sweet, Moody's Analytics, conducted the analysis of survey responses for this report. The views expressed in this report are those of the panelists, and do not necessarily represent the views of their affiliated companies or institutions.

SUMMARY: **NABE** Outlook panelists continue to view the economy as having solid momentum entering **2019**, but they foresee **GDP** growth cooling from **2.9%** this year **to 2.7% in 2019**," said NABE President Kevin Swift, CBE, chief economist, American Chemistry Council. "The panel **expects** the **Federal Reserve** to continue **gradually tightening monetary policy**, and anticipates a **federal funds rate** hike at the upcoming **December** FOMC meeting, **followed by three rate increases** in **2019**." "While panelists remain generally optimistic, three-quarters of respondents see **risks** being **tilted to** the **downside**," added Survey Chair Gregory Daco, chief U.S. economist, Oxford Economics. "Panelists view increasing **trade tensions** as the **primary downside risk to their outlook**, with 80% of respondents reducing their 2019 GDP growth outlook in response to trade policy developments. Even so, **recession risks** are **still perceived** to be **low in** the **near term**, with the panel expecting a **20% risk** of recession by the **second half of 2019, and a 30% chance by the end of 2020**."

Highlights:

The median forecast for growth in inflation-adjusted gross domestic product (real GDP) from the fourth quarter (Q4) of 2017 to the fourth quarter of 2018 is 3.1%, unchanged from the growth rate predicted in the October 2018 NABE Outlook survey. Likewise, the median forecast for real GDP growth from Q4 2018 to Q4 2019 did not change, with panelists calling for 2.5% growth over that period. Thus, respondents continue to suggest some moderation in growth moving into next year.

Overall, the panel anticipates **economic growth** in **2018** will be **stronger than** the **actual 2.2% annual real GDP growth rate in 2017**. On an annual basis, **real GDP**

growth in **2018** is **expected** to be **2.9%,** unchanged from the October forecast. For **2019**, respondents predict a **2.7% annual growth** rate in **real GDP**.

Nearly **three-quarters** of panelists perceive the **risks to GDP growth** are **tilted** to the **downside**, while 12% indicate that upside risks outweigh downside risks. Only 14% of respondents report that risks to GDP growth are balanced.

In light of recent U.S. trade policy and other nations' reactions, half (52%) of respondents reports no change in their 2018 GDP forecasts, while just over a third of respondents (37%) have reduced their forecasts by 0.25 percentage points (ppt) or less. For 2019, however, a large majority (80%) of panelists has lowered their forecasts, with two-thirds (63%) lowering their forecasts by 0.01 to 0.25 ppt. Additionally, 4% of respondents have curbed their 2019 forecasts by 0.26 to 0.5 ppt, with 4% reducing their forecasts by more than 0.5 ppt. Only 11% of panelists report no change to their outlook, while 9% have boosted their GDP growth forecasts by up to 0.25 ppt.

Almost two-thirds of panelists indicate they have lowered their forecasts for business investment in 2019 as a result of U.S. trade policy, while two-thirds have raised their inflation forecasts moderately. Forty-one percent of panelists indicate that they have lowered their forecasts for personal consumption expenditures, while a small majority reports that trade issues have had no impact on their forecasts for personal consumer expenditures.

ND Utility Regulators Approve MDU Gas Settlement, Authorize Rate Increase

by Monica Hlinka — S&P Global Market Intelligence – Sep. 27, 2018

MDU Resources Group Inc.'s **gas distribution rate case** nears the end as the **North Dakota Public Service Commission** approved a **settlement** Sept 26 that was filed by the utility and various entities. The now-approved settlement calls for the utility to increase gas rates by $2.5 million, or 2.3%. The rate increase reflects a **9.4% return on equity** (**51% of capital**) and a **7.24% rate of return**. The settlement is silent with respect to rate base.

The settlement was signed by MDU, the advocacy staff of the PSC and various federal executive agencies.

The authorized 9**.4% ROE** is **slightly below** the **9.55% average ROE** accorded gas utilities nationwide in cases decided during the first half of 2018 and the 9.72% average ROE authorized for gas utilities in cases decided during 2017, as calculated by Regulatory Research Associates, an offering of S&P Global Market Intelligence. For a discussion of historical rate of return authorizations, refer to Major Rate Case Decisions Quarterly Update.

The **settlement resolved** the revenue requirement issues with respect to the **2017 federal tax overhaul** that **lowered** the **corporate federal income tax rate to 21% from 35%.** The parties agreed that MDU will amortize all resultant plant-related excess deferred income taxes using the average rate assumption method, while all non-plant related excess deferred income taxes will be amortized over a three-year period.

With the rate increase being less than the authorized interim rate increase, MDU will submit a refund plan within 30 days of a final commission order approving the agreement.

MDU and the **other parties did not reach agreement** with **respect** to the **utility's proposed System Safety and Integrity Program**, or **SSIP**, and **associated recovery mechanism**. The utility proposed to establish an SSIP, which is a replacement program for early vintage steel pipe, early vintage plastic pipe, low pressure systems and inside meters. The proposed SSIP mechanism would allow the utility to "proactively address pipeline integrity while potentially avoiding costly rate cases and providing customers with more gradual rate increases over time." MDU estimates that the projected investment associated with the SSIP in 2019 would be approximately $6 million.

According to the **PSC staff**, the proposed SSIP "lacks (1) a clearly articulated plan laying out the timetable, performance metrics, and project selection process for the replacement of eligible infrastructure, (2) a well-defined cost recovery mechanism, (3) a demonstration of customer benefit, and (4) a demonstration that the program is the least-cost option for achieving that customer benefit." Furthermore, the PSC staff noted that the utility failed to demonstrate the "necessity and prudence" of the proposed projects on "grounds of normal replacement, system expansion, or reliability improvement."

The parties agreed that the determination of whether to adopt the program and mechanism would be an issue left to the commission to decide.

Regarding the proposed SSIP mechanism and related program, the PSC directed MDU to file a detailed plan to better evaluate potential replacement projects. The plan is to include information about the current status of MDU's gas system, information that can be used to identify and rank existing and potential threats, and factors used to justify replacement and timing of replacement.

Proceeding overview

This proceeding (Case No. PU-17-295) was initiated July 21, 2017, when MDU filed for commission approval of a $5.9 million, or 5.4%, permanent gas rate increase. The **requested** increase reflected a **10% return on equity** (**51% of capital**) and a 7**.54% return on an average rate base** valued at $135.5 million for a calendar-2018 test year. The utility later revised its request to reflect the changes in the federal tax law and supported a $3.6 million rate increase based on the aforementioned rate parameters and a $136.9 million rate base.

On Feb. 27, the commission approved MDU's request to revise its interim rate increase. MDU sought to implement a $2.7 million interim rate increase versus the $4.6 million that the commission approved in September 2017. The new interim rates went into effect on March 1, 2018.

Prior to the settlement, the PSC staff filed revised testimony and recommended that the commission authorize MDU a $867,496 gas rate increase reflecting a 9.23% return on equity (51% of capital) and a 7.15% return on an rate base valued at $132.3 million.

On July 19, the parties to the case filed the now-approved settlement with the PSC.

For a full listing of past and pending rate cases, rate case statistics and upcoming events, visit the S&P Global Market Intelligence Energy Research Home Page

Net Stock Buybacks and Net Borrowing Have Yet to Alarm

by John Lonski – Moody's Analytics – Nov. 1, 2018

Recent outsized advances by equity prices probably owe something to either **actual or anticipated buybacks of common stock**. Both the relative steadiness of corporate credit quality and ample amounts of corporate cash now improve the outlook for equity buybacks.

In the **Financial Accounts of** the **United States**, the **Fed**eral Reserve **supplies** an **estimate** of **net equity buybacks**, where the **estimate applies to net buybacks of** both **common and preferred equity**. Because of an often heavy use of preferred stock by financial companies, net buybacks of equity are the preferred measure when analyzing the behavior of net equity buybacks over time. For example, the $55 billion of total net equity buybacks for the year-ended June 2018 consisted of $485 billion of net stock buybacks by U.S. nonfinancial companies and $281 billion of net equity issuance by U.S. financial institutions.

Net equity buybacks reduce the equity capital buffer protecting creditors. Thus, **actual and anticipated increases in net stock buybacks can increase default risk and widen credit spreads**. Moreover, the damage done to corporate credit quality by net stock buybacks will be **amplified if** equity buybacks are **funded with increased debt**.

The moving yearlong ratio of nonfinancial-corporate net stock buybacks to nonfinancial-corporate cash offers insight regarding the financial risks stemming from net stock buybacks. The **lower net equity buybacks are relative to cash**, **the less downward pressure** will **equity buybacks put on corporate credit quality**.

The moving yearlong sum of net nonfinancial-corporate buybacks is derived from Table F103 of the Financial Accounts of the United States, while nonfinancial-corporate cash is derived from Table L103 of the same publication. The definition of cash employed in this exercise excludes nonfinancial-corporate holdings of equity and mutual funds that are included in the Federal Reserve's broad version of liquid financial assets.

Latest Ratio of Net Stock Buybacks to Cash Does Not Warn of Bear Market

For the year-ended June 2018, the $485 billion of net buybacks of nonfinancial-corporate equity approximated 22% of the group's $2.186 trillion in cash. The latest ratio hardly differed from its 20% average of the 30-years-ended 2017.

In stark contrast, **just prior to** the **outbreak** of the **Great Recession**, December 2007's yearlong ratio of **net stock buybacks to cash was** a **record high 53%**. In the final quarter of 2007, the market value of U.S. common stock set a cycle high.

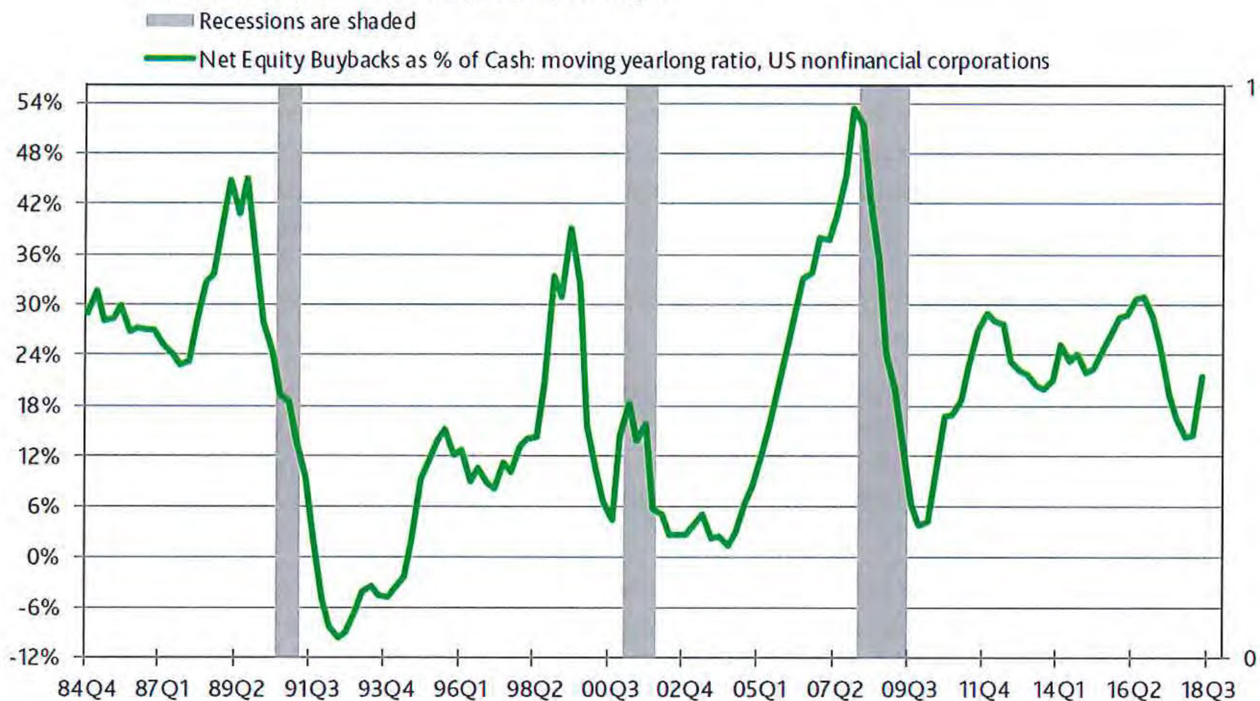
Moreover, the yearlong ratio of net equity buybacks to cash set previous cycle highs at the 39% of June 1999 and the 45% of September 1989. Not long thereafter, the U.S. equity market topped off in March 2000 and June 1990, respectively.

Thus far, the current recovery shows a September 2016 top of 31% for the yearlong ratio of net stock buybacks to cash. Though the latest ratio of 22% is up from a December 2017 bottom of 14%, the ratio is low enough to suggest that **many**

companies still have the **financial resources with which to fund stock buybacks**. In turn, it may be **premature** to **declare** the **nearness** of a **long-lasting peak for** the **U.S. equity market**.

Figure 1: Recent 22% Ratio of Net Stock Buybacks to Cash Is Well Under 2007's 53%

sources: Federal Reserve, NBER, Moody's Analytics



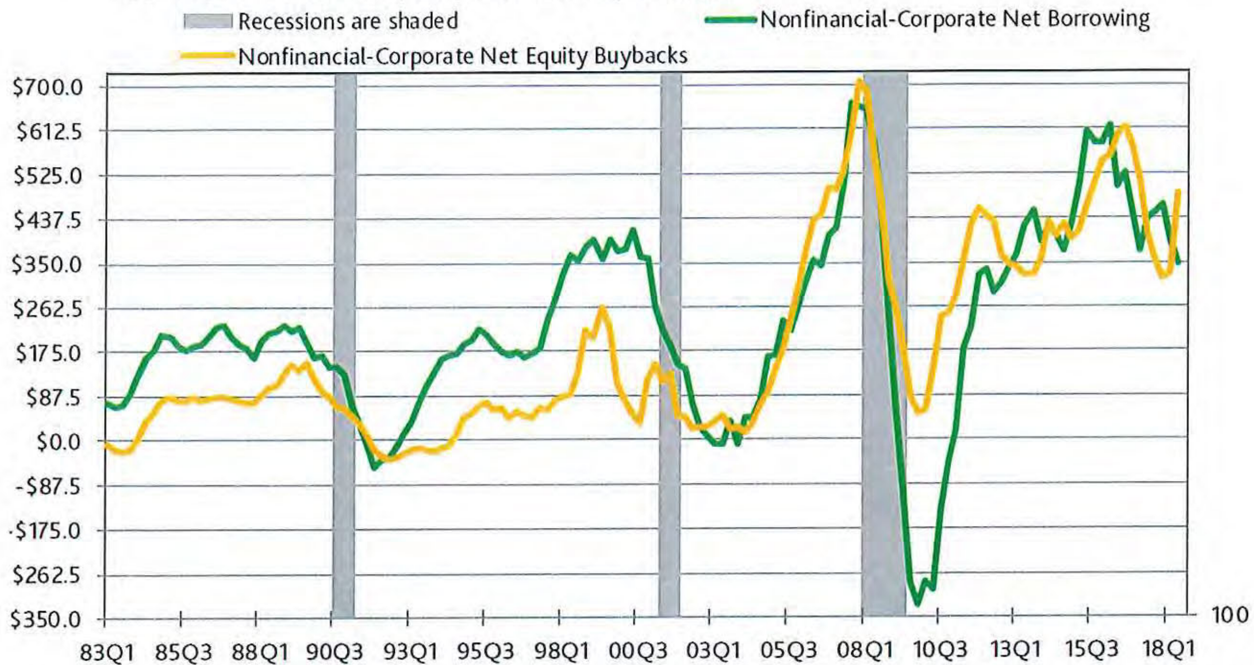
Slide by Net Borrowing Offsets Climb by Net Stock Buybacks

Net equity buybacks offer only a limited measure of the change in a company's capital structure. A more comprehensive estimate of the change in capital structure would add net borrowing to net equity buybacks. In terms of moving yearlong averages, though net stock buybacks rose from the $405 billion of the span-ended Q2-2017 to the $485 billion of the span-ended Q2-2018, nonfinancial-corporate net borrowing eased from $435 billion to $347 billion, respectively. Had net borrowing not subsided, current prospects for credit quality would have been worse than otherwise and corporate credit spreads would have been wider. Note that prior to the onset of the Great Recession, the calendar year averages rose from 2006's $403 billion to 2007's record-high $658 billion for net borrowing and from 2006's $497 billion to 2007's current zenith of $706 billion for net equity buybacks. **For now**, at least, **corporate net borrowing** and **net stock buybacks** fall considerably **short of what preceded** the **financial crisis**.

Figure 2: During the Past Year, Nonfinancial-Corporate Net Borrowing Slowed as Net Stock Buybacks Grew

yearlong sums in $ billions

sources: Federal Reserve, BEA, NBER, Moody's Analytics



Ratios of Net Borrowing and Net Buybacks to GDP Fall Way Short of 2007's Highs

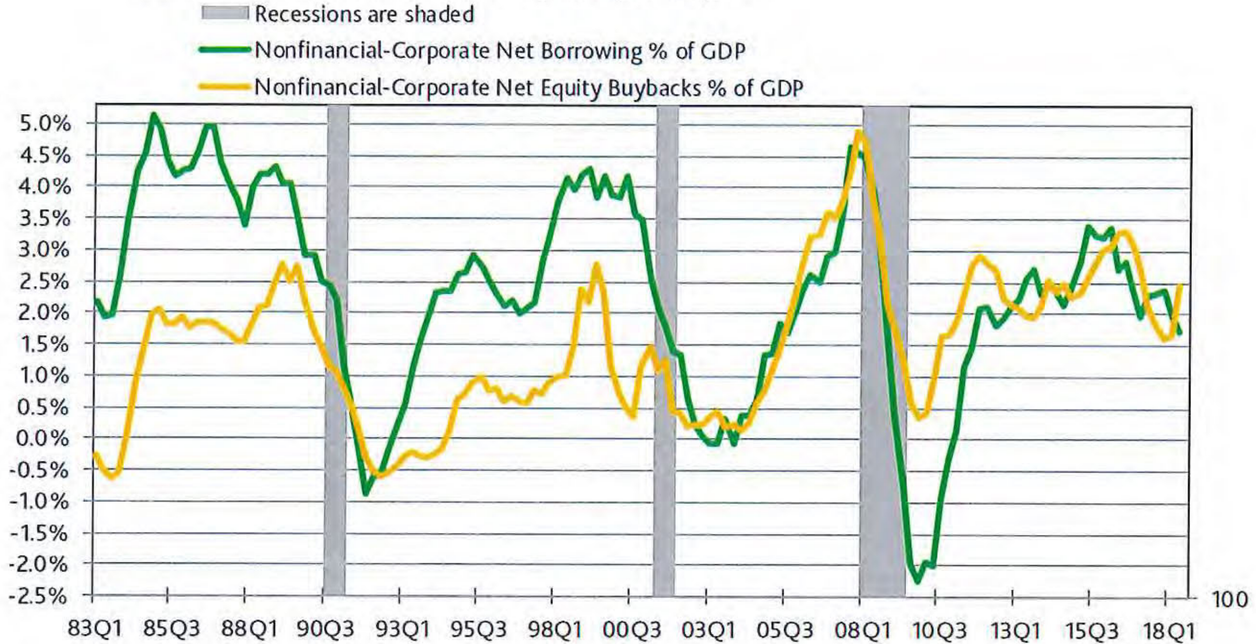
Relative to nominal GDP, **nonfinancial-corporate net borrowing has been subdued**, **while net equity buybacks have topped their long-term trend**. More specifically, during the 12-months-ended June 2018, nonfinancial-corporate net borrowing approximated 1.7% of nominal GDP, which was under its long-term median ratio of 2.4%. At the same time, **June 2018's 2.4% yearlong ratio of nonfinancial-corporate net stock buybacks to GDP exceeded its long-term median of 1.6%.**

The yearlong ratio of net borrowing to GDP set its record high in December 1984 at 5.1% and established its sample low at the -2.2% of December 2009. (Negative net borrowing implies that nonfinancial corporations reduced outstanding indebtedness.) In addition, the yearlong ratio of net stock buybacks to GDP set its zenith at December 2007's 4.9% and set multiple sample bottoms at the -0.6% of September 1983, December 1983, June 1992 and September 1992. (Negative net stock buybacks imply the issuance of common equity by nonfinancial companies exceeds the buyback, or retirement, of common equity.)

Figure 3: As Percent of GDP, Nonfinancial-Corporate Net Borrowing Is Below-Trend and Net Stock Buybacks Are Above-Trend

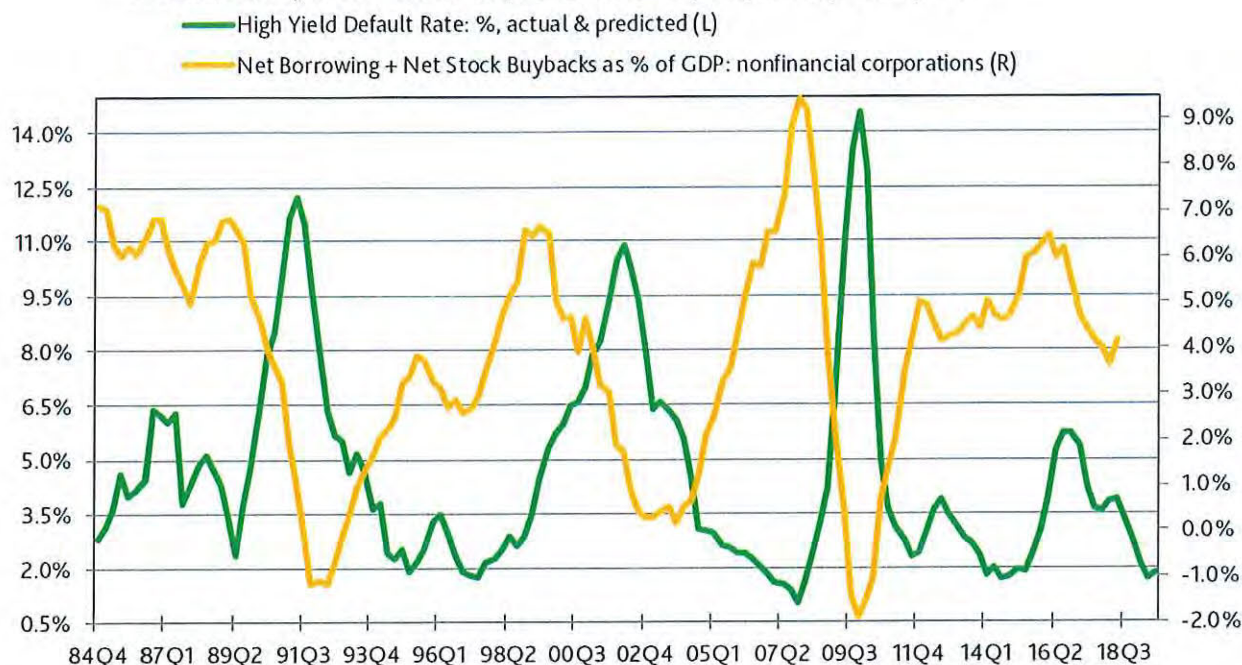
yearlong ratios in $ billions

sources: Federal Reserve, BEA, NBER, Moody's Analytics



Latest Net Leverage Ratio Complements a Still Benign Default Outlook

The sum of net borrowing as a percent of GDP plus net stock buybacks as a percent of GDP – or the net leverage ratio – offers insight regarding the likely direction of corporate credit quality. However, some time may pass before an increase by net borrowing and net stock buybacks relative to GDP helps to trigger a disruptive ascent by the default rates. I n fact, the high-yield default rate shows a coincident inverse correlation of -0.57 with the sum of net borrowing and net stock buybacks as a percent of GDP implying that the default rate declines as the net leverage ratio increases. Only by comparing the default rate with earlier net leverage ratios does the expected positive correlation emerge. For example, the default rate does not generate a positive correlation of at least 0.50 until the default rate is set against the net leverage ratio of seven quarters earlier. In fact, the default rate's peak correlation is 0.59 with the net leverage ratio of nine quarters earlier.



For the year-ended June 2018, the net leverage ratio of 4.2% matched its long-term median of 4.2%, which is well under March 2016's 6.4% high for the current business cycle upturn. The yearlong net leverage ratio set its record high at the 9.4% of December 2007 and had been as high as 6.5% at the end of 2006. Earlier peaks for the yearlong net leverage ratio were set at June 1999's 6.6%, March 1989's 6.8%, December 1986's 6.8%, and December 1987's 7.1%.

Thus, the latest modest ratio of net borrowing and net stock buybacks to GDP complements the benign outlook for high-yield defaults. Nevertheless, history still warns of significantly wider corporate credit spreads that presage a prolonged and disruptive climb by the default rate.

Outflows from U.S. Stocks Swell as Investors Seek Refuge in Bonds

by Michael Wursthorn and Daniel Kruger – WSJ – Jul. 26, 2018

An exodus from long-term mutual funds and exchange-traded funds coincides with tariffs between the U.S. and China.

Investors are fleeing U.S. stocks at a rapid clip as the possibility of a protracted **trade** dispute between the world's two largest economies pushes them to **seek safety among less risky assets such as U.S. Treasurys**.

More than $20 billion was pulled from long-term mutual funds and exchange-traded funds focused on U.S. stocks **in June**, capping the third-worst first half for equity flows over the past 10 years, according to data provider Morningstar LLC. The trend doesn't appear to be slowing: **Investors** redeemed more than $11.6 billion from domestic stock funds in the three weeks ended July 18, according to the Investment Company Institute.

The exodus coincides with the implementation of the first round of tariffs between the U.S. and China, as well as President Donald Trump's consideration of additional levies on more than $200 billion of goods. **But** it also comes against a backdrop of **robust corporate earnings** and **strong U.S. economic growth** that has pushed the **S&P 500 up 6.5% this year**.

Analysts have long been critical of the predictive power of **fund flows** in calling a broad market shift. The data reflect how money is moving across investment products but **aren't necessarily a good gauge of investor sentiment**. Plus, individual investors are often bad at timing the market, buying high and selling low.

Still, after a more than nine-year rally in U.S. stocks, several investors say this year's ongoing volatility and trade tensions are forcing them to pause to reconsider whether a stock-heavy portfolio can sustain a tit-for-tat trade conflict, not just with China but other major trading partners. Other investors appear to be waiting on the sidelines, with stock-trading volumes dropping to their lowest levels of the year in recent weeks

PNC Financial Services Group Inc., for one, has been urging clients with heavy exposure to stocks to pare those positions and buy more government bonds. Resurgent volatility has forced investors to confront a period when "stock prices not only go up, they can go down," said Jeff Mills, co-chief investment strategist for PNC, which manages $149 billion in assets. "We're making sure investors have their house in order."

Russell Investments, meanwhile, reiterated its "underweight" preference for U.S. stocks last month, which suggests investors reduce equity allocations, and shifted its view of U.S. government bonds to neutral from underweight.

Those sentiments helped drive more than $80 billion of inflows into taxable bond funds in the first half of the year, outpacing the roughly $60 billion that was pulled from

U.S. stocks over the same period, according to Morningstar's data. At the same time, asset managers including investment giant **BlackRock** Inc. have recently reported a substantial slowdown in inflows. **Money coming into passive funds that track the market dropped 44% through** the **first half of 2018**, Morningstar said.

Short-term bond yields have become more attractive in the meantime. As the Federal Reserve has continued its campaign to raise interest rates, the **yield** on the **two-year U.S. Treasury note recently rose to 2.655%, versus** the S&**P 500's dividend yield of 1.9%** – the widest disparity since the 2008 financial crisis, according to State Street Global Advisors.

"**Risk-adjusted returns on stocks versus Treasurys** are **not as compelling as they have been**," said Brian Nick, chief investment strategist at Nuveen

Outflows from stock-focused funds likely would have been more severe if the **U.S. market** weren't **on better footing than major indexes in Europe and Asia**, analysts said. Stocks overseas have seen more volatility in recent months amid the tariffs talks and signs of slowing economic growth.

"The U.S. economy is experiencing robust earnings," said Erik Knutzen, multiasset-class chief investment officer at Neuberger Berman, which has been increasing its exposure to large-cap stocks, a major contributor to the S&P 500's gains this year. "There's a strong short-term impulse in the U.S., and we want to make sure we have exposure to that." Mr. Knutzen added investors should remain cautious and consider reducing some of their biggest asset allocations to a more neutral stance as "we wait for more clarity on trade concerns" among other risks, such as a resurgent U.S. dollar and the midterm elections this fall.

Although analysts say companies are on their best financial footing in years, more investors fear stocks are going to languish in the second half of the year. The share of individual investors who expect stocks to fall over the next six months was 39% earlier this month, near its high of the year, according to an American Association of Individual Investors survey. Measures of consumer confidence and optimism among small-business owners also fell in the past month.

Demand for bonds, meanwhile, is expected to pick up as the Fed unwinds some of its massive bond portfolio. That has the potential to dramatically reshape investors' portfolios after years of easy-money policies made bonds relatively unattractive. Currently, stockholdings for nonbank investors are near their highest in the post-2008 period, while those for bonds are at new lows, according to JPMorgan Chase & Co.

The supply of debt is also rising. The **U.S. government sold $1.1 trillion of notes and bonds in the first six months of the year**, a **9.2% increase from** the **year before**. That amount is expected to continue climbing as the Treasury raises cash to help fund the $1.5 trillion tax cut passed in December.

You now have a risk-free asset that generates something of a real return – that explains a lot of the shift" to bonds from stocks, said Simona Mocuta, an economist with State Street Global Advisors. Investors no longer have to forgo investment income in order to preserve capital, she said. "The **risk-reward calculation** has **changed**."

Pensions Dial Back Targeted Returns

by Heather Gillers – WSJ – Jul. 23, 2018

The nation's two biggest public pension funds are doing better in 2018. The problem is they don't think it will last.

The **California State Teachers' Retirement System** and **California Public Employees' Retirement System** both earned more than 8% for the second fiscal year in a row, thanks to a robust performance by stocks and private equity. **Together** they **manage $575 billion for 2.8 million public workers and retirees**.

But the systems, known as **Calstrs and Calpers**, respectively, aren't counting on that type of performance over the long term. **Both rolled back their investment targets this year** in an effort to be m**ore realistic about what they can earn in** the **future**. **Calstrs** dropped its future goal to **7%**. **Calpers** initiated a **multistep drop** this year that will **end at 7%** in 2021.

Many other public pensions around the country are turning more cautious about future results following a nine-year bull market for U.S. stocks, which remain the single largest holding for most retirement systems. The funds rely on a combination of investment income and contributions from employees, states and cities to fund their mounting obligations to retirees.

Pensions Dial Back Targets

For many decades these funds clung to a belief that stocks, bonds and other holdings could earn at least **8%** and that those gains would fund hundreds of billions in liabilities. But **many are trimming those assumptions to 7%** and lower. The median assumed rate of return held by 130 public pension funds tracked by Wilshire Consulting dropped in 2017 to 7.25%. That rate was still 8% as recently as 2012.

"We probably want to temper our enthusiasm when we have a year or two years of strong returns because one thing we know for certain is that there will be challenging years," said Wilshire Consulting Chief Investment Officer Steve Foresti.

Pensions have long been criticized for using unrealistic investment assumptions, which proved costly during the last financial crisis. Many funds recorded big losses in 2008 and 2009, pulling their long-term returns well below the 8% barrier. As of June 2017 the **10-year annualized median return for all public pensions tracked by Wilshire Trust Universal Comparison Service was 5.57%**.

"Over 10 years, we struggled," Calstrs Chief Investment Officer Christopher Ailman said at a public meeting on Friday. **Calstrs has returned an average annualized 6.3% over 10 years as of June 30**.

But moving expectations below 8% isn't just an accounting move; it has real-life **consequences** for systems that use those predictions to calculate the present value of obligations owed to retirees. **Even slight cutbacks** in **return targets** often **mean budget-strained governments or workers** are **asked to pay significantly more** to account for liabilities that are expected to rise as life spans increase and more Americans retire.

In California, some local-government officials are concerned their costs will rise aggressively as Calpers lowers its expected return rate. Calpers has said the state and school districts participating in its system would have to pay at least $15 billion more over the next 20 years once the system's assumed rate of return drops to 7%.

Pension-fund officials in other parts of the country are making the same decision to drop their future targets even as they report strong results for fiscal 2018. The **Maine Public Employees Retirement System earned 10.3% for** the **year ended June 30 but this year dropped its long-term goal to 6.75%.** It has now reduced its rate-of-return assumption four times since 2009.

The moves mean the system now has more work to do if it hopes to fund all future benefits. Had the fund maintained its pre-crisis 7.75% goal, it could today report having enough assets to cover 91% of its liabilities according to executive director Sandy Matheson. Instead it has 81%, she said.

The **Illinois State Board of Investment** for years relied on an 8.5% assumed return rate for its state-employee retirement plan. In 2016 it **dropped to 7%**, one of many reasons it **now has just 35% of what it needs to pay for future benefits**. "If we were still 8.5% it might be 50% or 60% – **it would appear** to be a lot **better**," said Illinois State Board of Investment Chair Marc Levine. **But** it would be **total nonsense** because you **still owe** the **same** amount of **money**."

Donald Trump Says He's 'Not Happy' About Federal Reserve Interest-Rate Increases

by Nick Timiraos – WSJ – Jul. 19, 2018

Left US President Donald Trump in interview with CNBC. Comments break with **tradition that presidents refrain from commenting on monetary policy.**

President Donald Trump **said Thursday** he **hoped** the **Fed**eral Reserve **would stop raising interest rates**, delivering an unusual censure of the central bank.

"I am not happy about it," Mr. Trump said about interest-rate increases during an interview conducted Thursday by CNBC.

His comments depart from a convention in which presidents have refrained from speaking specifically on monetary policy.

The Fed has raised interest rates twice this year, in March and in June, to a range between 1.75% and 2%. Officials at the June meeting of the policy-setting Federal Open Market Committee also penciled in two more rate increases for the year. The Fed's chairman, Jerome Powell, was tapped by Mr. Trump last November to succeed Janet Yellen, and he took his post in February.

Mr. Trump said he was "not thrilled" because every time the economy strengthens "they want to raise rates again."

But he **also said he wouldn't interfere with** the **Fed**. "I'm letting them do what they feel is best," he said.

Mr. Trump also called Mr. Powell a "very good man" in the portion of the interview aired Thursday.

The **president**, who has previously **expressed support for** a **weaker dollar**, said he was frustrated that rising interest rates had caused the U.S. dollar to strengthen against other currencies.

Europe's "making money easy, and their currency is falling," Mr. Trump told CNBC. "China, their currency is dropping like a rock. Our currency is going up. I have to tell you, it puts us at a disadvantage." A **stronger greenback makes U.S. exports relatively more expensive on world markets**.

A Federal Reserve spokeswoman declined to comment Thursday.

The dollar weakened slightly against other major currencies when CNBC aired Mr. Trump's remarks, with the WSJ Dollar Index moving lower shortly after 1 p.m. EDT.

The Fed is charged by Congress to maximize employment and maintain stable prices, which it does by seeking to keep inflation at 2%. With the economy expanding solidly and the unemployment rate falling to its lowest levels in decades, the central bank has been gradually raising rates from historically very low levels to keep the economy on an even keel.

The **Fed cut its benchmark rate to near zero** to boost demand **after** the **2008 financial crisis**, and it **held** the **rate there** far **longer than** many observers **expected**. Officials **began** to **gradually lift rates in late 2015**. Last fall, the central bank **also began** to **slowly shrink the $4.3 trillion bond portfolio** it amassed during several rounds of asset purchases designed to lower long-term rates and further stimulate growth.

Central bankers have long argued for independence from political pressure. They say it allows them to make unpopular decisions in the economy's long-run best interest – such as raising rates to curb inflation even if it means slowing growth – as then-Fed chairman Paul Volcker did in the early 1980s.

In 1993, a top adviser to President Bill Clinton began enforcing a rule within the White House that the Fed's policy decisions shouldn't be publicly questioned. That rule largely held under the administrations of George W. Bush and Barack Obama. It also was followed until this year in the Trump White House.

Former White House economic adviser Gary Cohn emphasized to colleagues the importance to markets of not publicly second-guessing monetary policy decisions. He left the White House in April.

Mr. Trump had been highly critical of Ms. Yellen during his campaign for the presidency. He accused her of keeping interest rates low to help Democrats. Ms. Yellen denied the accusation and said politics didn't factor into the Fed's decisions.

Mr. Trump said he knew some people didn't think it was **appropriate for** the **president** to **comment on interest rates or** the **dollar**, **but he said** of those concerns, "I **couldn't care less** what they say."

Political pressure on Fed Chairman William McChesney Martin by the Johnson administration and on Arthur Burns by the Nixon administration to follow easy-money policies is widely blamed for the inflation surges of the 1970s

At a conference in Sweden earlier this year, Mr. Powell said an erosion of trust in public institutions had created special challenges for central banks. Those institutions "cannot take our measure of independence for granted," he said.

Mr. Powell, who hasn't met with or spoken to Mr. Trump since his confirmation, said last week he wasn't worried about political pressure from the White House.

"We have a long tradition here of conducting policy ... independent of all political concerns. We do our work in a strictly nonpolitical way, based on detailed analysis, which we put on the record transparently," Mr. Powell said in an interview with American Public Media's "Marketplace" radio program.

The nonpolitical approach "is deep in our DNA," Mr. Powell added.

The Real Problem with Stock Buybacks

by Jesse M. Fried and Charles C.Y. Wang – WSJ – Jul. 9, 2018

Prof. **Fried** is a **professor** at **Harvard Law** School, and Prof. **Wang** is an associate **professor** at **Harvard Business School**.

There is a problem with share buybacks – but it isn't the one many critics and legislators are obsessed with.

Some critics claim that repurchases starve firms of capital they could invest for the long term, harming workers to enrich shareholders. Democratic Sens. Chuck Schumer of New York and Tammy Baldwin of Wisconsin agree and have introduced legislation to "rein in" corporate stock buybacks. The bill would give the Securities and Exchange Commission authority to reject buybacks that, in its judgment, hurt workers. It also would require boards to "certify" that a repurchase is in the "best long-term financial interest of the company." Sen. Baldwin has introduced another bill, cosponsored by Sen. Elizabeth Warren (D., Mass.), that goes even further: It bans all open-market repurchases.

This criticism of buybacks is flawed; there is simply no evidence that the overall volume of dividends and repurchases is excessive. The **real problem with buybacks is** that **they tend to enrich executives at** the **expense of shareholders**. Fortunately, there is a simple remedy.

Flawed Argument

Buyback critics say S& P 500 firms don't have enough investment capital because dividends and repurchases routinely exceed 90% of their net income. Between 2007 and 2016, for example, these companies distributed $7 trillion to shareholders, mostly via repurchases. That was 96% of total net income. But our research shows that public firms recover from shareholders – directly or indirectly – about 80% of the capital distributed via repurchases. Shareholders return this capital by buying newly issued shares, mostly from employees paid with stock, but also directly from firms. Taking into account all types of equity issuances, net shareholder payouts in S& P 500 firms during the decade 2007-2016 were only about $3.7 trillion, or 50% of total net income.

At this level, net shareholder payouts don't appear to impair investment capacity. Indeed, our research shows that total R& D expenditures by public firms are at the highest level ever. A broader measure of investment intensity at public firms, the ratio of capital expenditures and R& D to revenue, has been rising over the past 10 years and is near peak levels not seen since the late 1990s.

One might argue that firms would invest even more if they had more cash at their disposal. But there is no shortage of cash. During 2007-16, cash balances at S& P 500 firms also rose by 50%, reaching around $4 trillion, providing ample dry powder for

additional expenditures. This astonishing level of idle cash suggests that net shareholder payouts may actually be too low.

The **real problem** is that **buybacks**, **unlike dividends, can be used to systematically transfer value from shareholders to executives**. Researchers have shown that **executives opportunistically use repurchases** to **shrink** the **share count and** thereby **trigger earnings-per-share-based bonuses**. **Executives also use buybacks** to **create temporary additional demand for shares, nudging up** the **short-term stock price as executives unload equity**. **Finally, managers who know the stock is cheap use open-market repurchases to secretly buy back shares**, boosting the value of their long-term equity. Although continuing public shareholders also profit from this indirect insider trading, selling public shareholders lose by a greater amount, reducing investor returns in aggregate.

Executives can use repurchases to enrich themselves because disclosure requirements are woefully inadequate. **When executives trade personally**, they **must publicly disclose** the **details** of each trade **within two business days**. The **spotlight** created by such real-time, fine-grained disclosure helps curb trading abuses by executives. **By contrast**, the **SEC only requires a firm to report, in each quarterly filing**, the **number of shares repurchased in each month of the quarter and** the **average price paid per share**. **Investors see** this **filing** a month or so into the **next quarter**, **one to four months after** the **buybacks occur**. And they **never see individual repurchases**, **just aggregate transaction data**. Researchers can detect the existence of buyback abuses across a large sample of public firms, but investors cannot easily identify the particular executive teams using repurchases to line their own pockets.

A Solution

A simple, common-sense regulatory change would curb such abuses. In particular, the SEC should require a firm to disclose each trade in its own shares within two business days, as it does for executives personally trading company stock. This two-day rule would shine a spotlight on repurchases, discouraging executives from using them opportunistically. For example, if such real-time disclosure leads investors to believe that executives are using a buyback to buy underpriced stock, the stock price would start rising, reducing executives' indirect profits from any subsequent repurchases, and thereby increasing public investors' returns.

A two-day rule won't unduly burden firms' use of repurchases for proper purposes, just as the rule doesn't unduly burden individual insiders. Indeed, some of the largest stock markets outside the U.S. already require even more timely disclosure by firms trading in their own shares. In the U.K. and Hong Kong, firms must report a repurchase to the stock exchange before trading begins the next day. Japan requires same-day disclosure, and Swiss investors see these trades in real-time.

Even if the two-day disclosure rule doesn't eliminate completely executives' abuse of buybacks, it will generate fine-grained data about repurchases that can be used to decide whether more aggressive regulation is desirable.

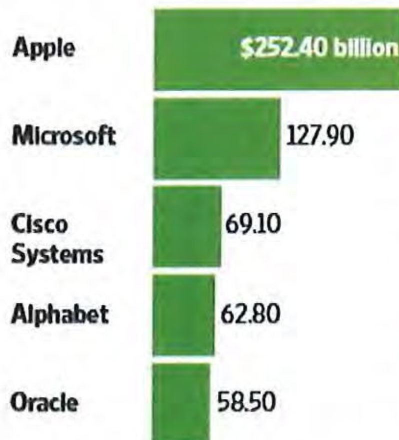
The regulatory reforms currently under consideration, such as empowering the SEC to block buybacks, might curb these abuses even more. But they also could generate huge economic costs by impairing the circulation of capital in the economy. It would be foolish to go straight to such drastic measures rather than start with a modest regulatory tweak: **subject**ing **firms to** the **same trade-disclosure requirement as** their **own executives**.

Repatriation Frenzy Is Just Starting

by Chyelsey Dulaney – WSJ – Jun. 28, 2018

Stockpiling

Tech giants hold the most cash overseas.



Note: Data includes cash, short-term and long-term liquid investments held by the companies' foreign units at the end of 2017.
Source: S&P Global Ratings

U.S. companies have **brought home only** a **sliver of** their more than **$2 trillion in profits stashed overseas**, a **sign** that this year's **corporate-spending spree on** things such as **buybacks** and **new equipment** is only **just beginning**.

Companies have built up billions of dollars in overseas profit stashes over the past decade in order to avoid U.S. taxes. But December's U.S. tax overhaul implemented a lower onetime tax rate on overseas cash, creating an incentive for companies to repatriate that money.

It appears to be working. **U.S. companies repatriated** roughly **$217 billion** in the **first quarter**, according to JPMorgan Chase & Co. That is **about 10%** of the $2.1 trillion it believes is sitting overseas. (Estimates vary: S& P Global Ratings pegged the overseas cash at $1.3 trillion in a report this week.) JPMorgan said U.S. companies could eventually bring home more than $400 billion in overseas earnings. What will companies do with all that money? Send it back to shareholders, analysts say.

Companies already **spent** a **record $189 billion on buybacks** in the **first quarter**, up about $50 billion from the fourth quarter. Tech giants such as Apple, Alphabet and Microsoft – which have some of the largest overseas profit stashes – have announced plans to ramp up returns to shareholders via buybacks and dividends.

Companies **also** are using the money to **pay down debt**, strike **deals** and **boost investment in** their **own businesses**. **Capital spending rose** about **20%** from a year earlier in the first quarter, according to S& P Dow Jones Indices. Share buybacks have helped support U.S. stock markets in recent months. When a company buys back its stock, it lowers the outstanding share count and boosts per-share earnings.

Apple is among the technology giants that have some of the largest overseas profit stashes.

An acceleration in repatriation also could add fuel to the dollar's recent rally as companies swap profits held in foreign currencies into the U.S. currency. Data from Bank of America Merrill Lynch shows corporations have recently

ramped up dollar purchases, while the greenback is up 1.7% this month against a basket of peers.

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How Do Recent Jurisdictional Authorized ROEs Compare to Nationwide Averages? Summary

by Lisa Fontanella – Regulatory Research Associates (RRA)
S&P Global Market Intellgence – Aug. 2, 2018

Rate case activity has been robust over the last several years, driven by the need to address capital investment for infrastructure modernization and expansion and new generation to replace retiring facilities, costs associated with reliability initiatives such as vegetation management, environmental compliance and renewable resource and energy efficiency mandates, and increased operation and maintenance expenses. These factors have been exacerbated by slow demand growth due to the impact of conservation and distributed resources. These issues will remain prevalent for the foreseeable future and with the need to address the impacts of federal tax reform enacted in 2017 added to the mix, there is little doubt that rate case activity will remain elevated.

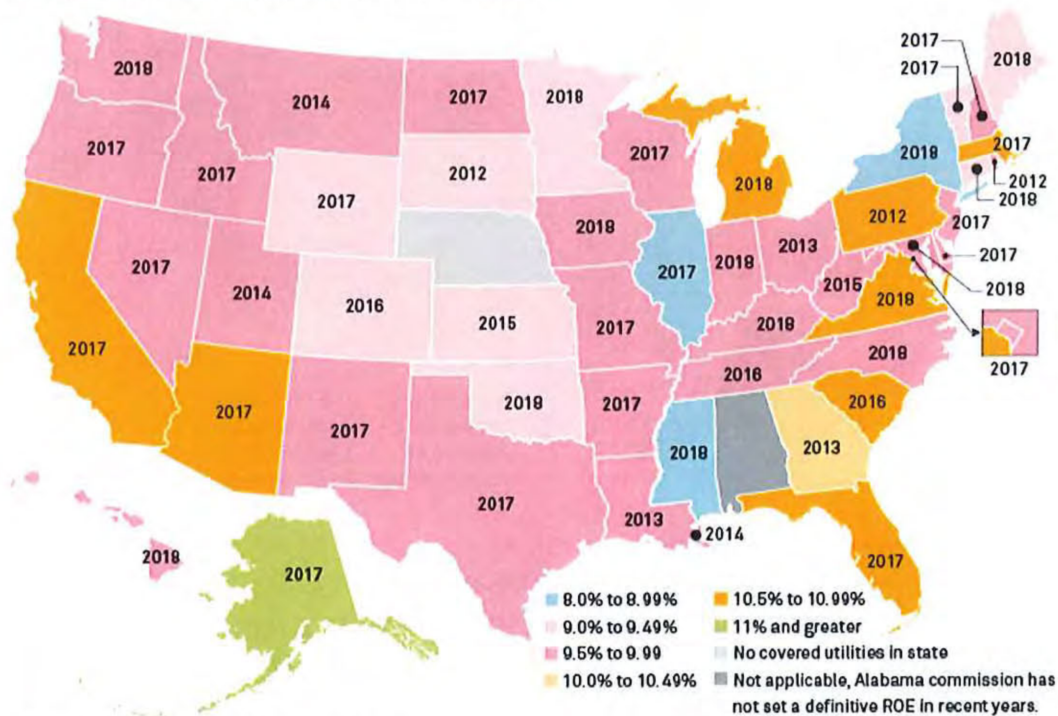
During 2017, there were 129 electric and gas rate cases in which a commission decision was rendered and two cases were withdrawn with no commission action in the 53 jurisdictions covered by Regulatory Research Associates, an offering of S&P Global Market Intelligence. Thus far in 2018, as of July 27, there were 58 electric and gas rate cases in which a commission decision was rendered; two cases were dismissed with no commission action.

An additional roughly 90 cases are pending. With this level of rate case activity comes an increasing focus on authorized returns on equity and how they might be impacted by such factors as the evolving interest rate environment, the recent changes in federal tax law and the regulators'/customers' tolerance for a continuous string of rate changes. While it is too soon to predict how these competing forces will ultimately impact authorized ROEs going forward, it is instructive to examine how the returns approved by the various jurisdictions in recent years have compared to prevailing national averages. With the exception of a handful of states including Alabama, most of the jurisdictions followed by RRA have issued orders establishing new electric and/or gas ROEs in recent years.

As noted in the maps, the bulk of the most recent electric and gas ROEs authorized by state public utility commissions have ranged from 9% to 9.99%. **Since the 1980s, virtually no ROE determinations have been below 9%**. In those cases where an ROE below 9% was authorized, the determination was part of a formula rate plan or a settlement.

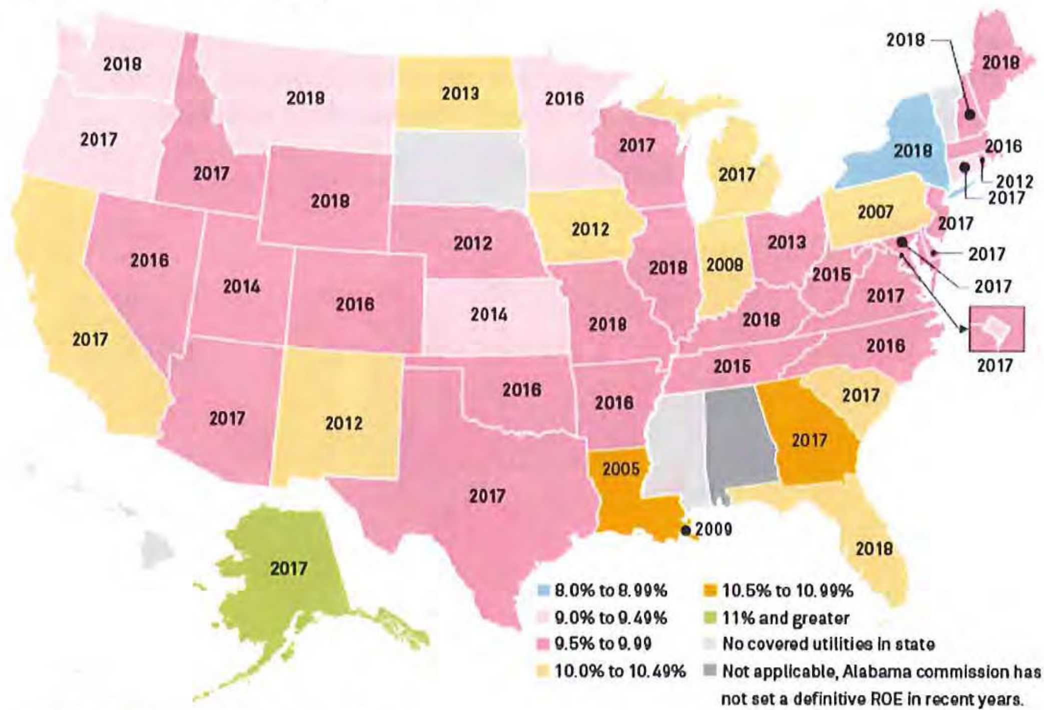
The **average allowed ROEs for electric and gas utilities have fallen steadily over the past few years**. This trend has been **driven by** a **persistently low interest rate** environment and the **proliferation of expedited recovery mechanisms that reduce business risk**. Even **though interest rates have begun to rise** in the broader economy, average **authorized ROEs have not immediately followed**.

Last electric ROE authorized by commission*



* Based on covered companies in rate case data base.
Data as of July 27, 2018.
Source: Regulatory Research Associates, an offering of S&P Global Market Intelligence

Last gas ROE authorized by commission*



* Based on covered companies in rate case data base.
Data as of July 27, 2018.
Source: Regulatory Research Associates, an offering of S&P Global Market Intelligence

The average authorized electric utility ROE was 9.65% in rate cased decided in the first half of 2018, a record low, and a nine-basis point decline from 9.74% in 2017. These figures include several limited issue rider cases, where premiums above a base ROE were authorized – such as certain generation riders approved in Virginia. Excluding these cases from the data, the **average authorized ROE** was **9.58%** in **electric rate cased decided** in the **first two quarters** of **2018, down from 9.68** in **full-year 2017**. The authorized ROEs fell within a range of 8.8% to 10% with a median of 9.6 percent.

The **average authorized gas** utility **ROE** was **9.55%** in cases decided through the **first half** of **2018**, **down from 9.72%** in **full year 2017. The authorized ROEs were in a range of 8.8% to 10.19% with a median of 9.5%.**

Average Electric, Gas ROE Authorizations Continue Downward Trend from 2017

by Lisa Fontanella – Regulatory Research Associates (RRA)
An affiliate of S&P Global Market Intelligence – Oct. 11, 2018

The **average ROE authorized electric utilities** was **9.64% in rate cases decided** in the **first three quarters of 2018**, somewhat **below** the **9.74%** average for cases decided in **calendar 2017**. There were 37 electric ROE determinations in the first nine months of 2018 versus 53 in full year 2017.

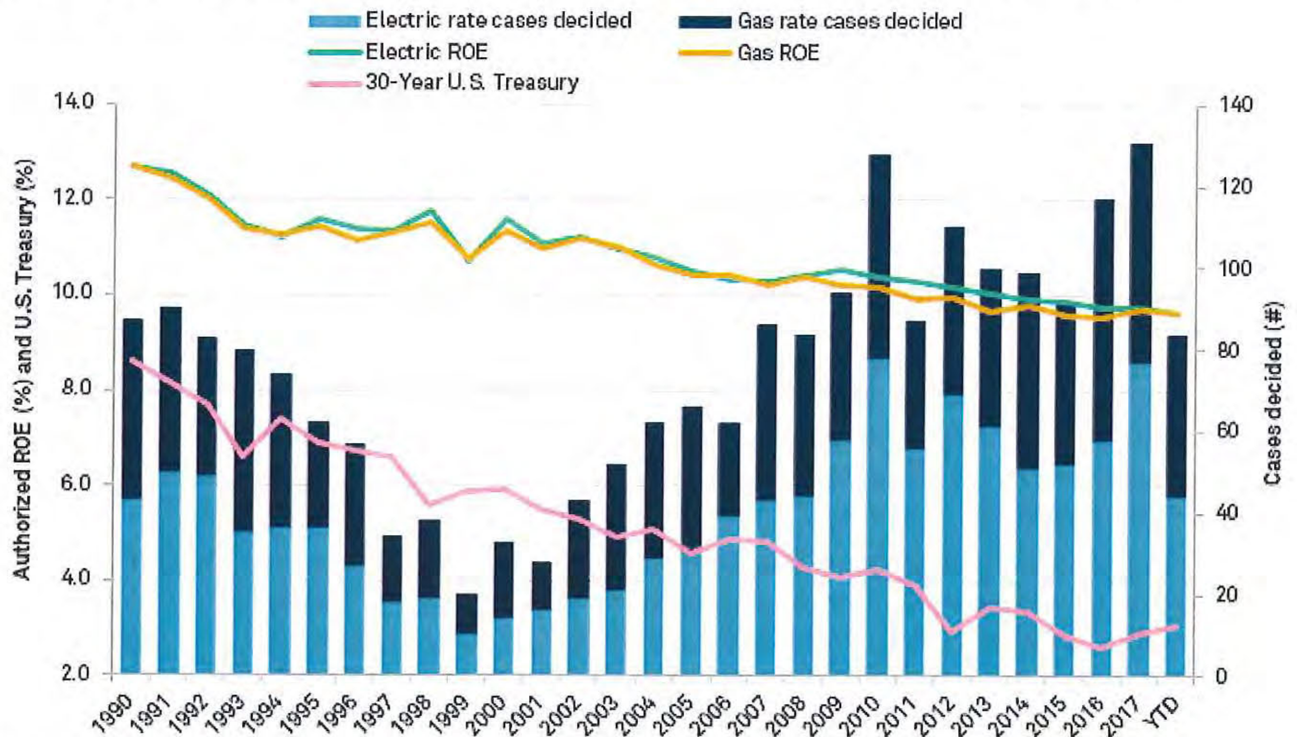
This **data includes several limited-issue rider cases**. **Excluding these** cases from the data, the **average authorized ROE** was **9.59% in rate cases decided** in the **first nine months of 2018**, somewhat **below** the 9.**68% average** for **full year 2017**. The **difference** between the ROE averages including rider cases and those excluding the rider cases is largely **driven by ROE premiums** of **up to 200 basis points approved by** the **Virginia State Corporation Commission** in riders related to certain generation projects; see the Virginia Commission Profile.

For **vertically integrated electric utilities**, the **average ROE authorized** was **9.69%** in cases decided during the **first three quarters** of **2018 versus 9.8%** for cases decided in **calendar 2017**. For **electric distribution-only utilities**, the **average ROE authorized** in the **first three quarters** of **2018** was **9.38% versus 9.43% in all of 2017**.

The **average ROE authorized gas utilities** was **9.62%** in cases decided during the **first three quarters of 2018 versus 9.72%** in **full year 2017**. There were 26 gas cases that included an ROE determination in the first nine months of 2018, versus 24 in full year 2017. Regulatory Research Associates, an offering of S&P Global Market Intelligence, notes that the **2017 data includes** an **11.88% ROE** determination for an Alaska utility. **Absent** this "**outlier**," the **2017 gas ROE average** is **9.63%**.

In the **first nine months of 2018**, the **median authorized ROE** in all **electric** utility rate cases was **9.7%, up from 9.6%** from **full year 2017**. For **gas** utilities, the **median authorized ROE** in cases decided in the **first nine months** of **2018** was **9.55%,** versus 9.6% in 2017.

Over the last several years, the **persistently low-interest-rate environment** has **put downward pressure on authorized ROEs**. As shown in the graph below, the **annual average ROE** has **generally declined since 1990** and has been below 10% for electric utilities since 2014 and below 10% for gas utilities since 2011.



Data compiled Oct. 10, 2018.
YTD = year-to-date, through Sept. 30, 2018.
Source: Regulatory Research Associates, an offering of S&P Global Market Intelligence

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SCANA Slashes Quarterly Dividend by 80%

by Nephele Kirong – S&P Global Market Intelligence – Jun. 28, 2018

SCANA Corp. **reduced** its **quarterly cash dividend rate by 80%,** one day after **South Carolina lawmakers** approved a compromise legislation that would **cut South Carolina Electric & Gas** Co.'s **rates by about 15% tied to** the **abandoned V.C. Summer nuclear expansion project**.

The lawmakers' move also **could jeopardize Dominion** Energy Inc.'s **offer to acquire SCE&G parent SCANA**. "The board made this reduction to preserve its options as the company continues to seek a resolution to the recovery of costs for the VC Summer new nuclear construction project," SCANA said in a June 28 release.

The company will pay a **second-quarter cash dividend** of **12.37 cents per share**, **down from 61.25 cents per share** paid in the **first quarter**. The dividend is payable July 18 to shareholders of record July 10.

Sharp Decline Puts Dow in Correction Territory

by Corrie Driebusch and Riva Gold – WSJ – Dec. 14, 2018

Three major indexes close week lower, putting **all three more than 10% below their peaks**.

The Dow Jones Industrial Average tumbled into correction territory Friday as disappointing economic data from China and the euro-zone sparked a retreat by investors and traders hesitant to enter the weekend with big bets.

The blue-chip index declined nearly 500 points, putting all three major U.S. stock indexes simultaneously in **correction** territory – typically **defined** as a **fall of at least 10% from a recent high** – for the first time since March 2016.

A steep drop at the end of a week has become a pattern during the recent stretch of market volatility: The Dow's 2% fall Friday is its third steepest this month. The other two declines also came a day before the stock market was set to be closed.

Investors and traders say they are uneasy entering a weekend with large bets on stocks in such volatile times, especially because of frequent geopolitical developments when stock markets are closed.

"We have a political machine that's able to communicate any time of the day," said Andrew Slimmon, senior portfolio manager with Morgan Stanley Investment Management. "Who wants to take the risk that something comes up and you're long?"

The Dow industrials declined 496.87 points, or 2%, to 24100.51. The S&P 500 fell 50.59 points, or 1.9%, to 2599.95, and the Nasdaq Composite dropped 159.67 points, or 2.3%, to 6910.66. With those losses, all three indexes ended the week lower. The S&P 500 is down more than 11% from its recent high, hit in September, while the Nasdaq is off nearly 15% from its August high.

Friday's declines, led by technology and other companies closely linked to the Chinese and global economy, signaled the weeks-long choppiness in markets around the globe isn't over, despite a slight reprieve earlier in the week.

"It's been hard to avoid the damage in the markets the past couple weeks," said Matthew Forester, chief investment officer at BNY Mellon's Lockwood Advisors.

The damage has come at a time when markets tend to be calm. Stocks typically rise in December, but this month has proved to be an anomaly. All three major U.S. stock indexes are down 5.5% or more, their worst starts to December since 1980, according to Dow Jones Market Data.

Mr. Forester said he has been favoring bonds with higher credit quality and longer durations, but it has been trickier to shift his stockholdings due to the all-inclusive nature of the selling.

Friday's losses followed a similar pattern, with real estate and **utilities** shares **posting smaller declines than other sectors**. They tend to be favored by investors in volatile times for their steady payouts. **All 11 sectors in the index finished lower**

Health-care stocks were the worst performers as Johnson & Johnson slumped $14.84, or 10%, to $133 after Reuters reported the company knew for years that its baby powder sometimes contained asbestos. The drop took about 100 points off the Dow industrials and pushed the S&P's health-care sector down 3.4%.

Energy stocks in the S&P 500 declined 2.4% as oil prices resumed their slide. U.S. crude dropped 2.6% to $51.20 a barrel.

The selloff came as data showed China's economic downturn deepened last month more than economists expected, as Beijing works to halt a slowdown while grappling with a trade conflict.

Official figures showed a November slowdown in industrial production amid issues among auto makers and property markets, while growth in retail sales dropped to its lowest level in more than 15 years.

"For a while, the Chinese economy was the extra bit that kept the global total going," said Alastair Winter, chief economist at Daniel Stewart & Co.

Mao Shengyong, a spokesman for China's National Bureau of Statistics, said China's economic growth was nonetheless on track to achieve its annual target in 2018.

Hong Kong's Hang Seng Index fell 1.6%, while the Nikkei Stock Average lost 2%. Declines spread to European markets, where the Stoxx Europe 600 lost 0.6%.

Adding to the downbeat tone, purchasing managers' surveys separately showed that French business activity unexpectedly contracted for the first time in 2½ years, according to IHS Markit, while German's composite purchasing managers index reached its lowest level in four years.

That came a day after the European Central Bank cut its economic growth forecasts, highlighting the climate of uncertainty around trade tensions and market volatility.

Worries about world growth and trade relations have contributed to steep swings in stock and bonds markets recently, even as the U.S. economy has been relatively steady.

The concerns have sparked a broad retreat from risky assets. In the week through Wednesday, investors withdrew record amounts from global equity funds, according to EPFR Global.

Friday's moves came after world stocks had rebounded earlier this week as The Wall Street Journal reported that China was set to introduce an industrial policy that is friendlier to foreign businesses. President Trump said on Twitter earlier in the week that "productive" trade talks were under way.

Many economists expect the trade conflict to continue despite a 90-day tariff truce that Mr. Trump and his Chinese counterpart, Xi Jinping, reached in early December.

Sizing-Up Bond Market's Signals

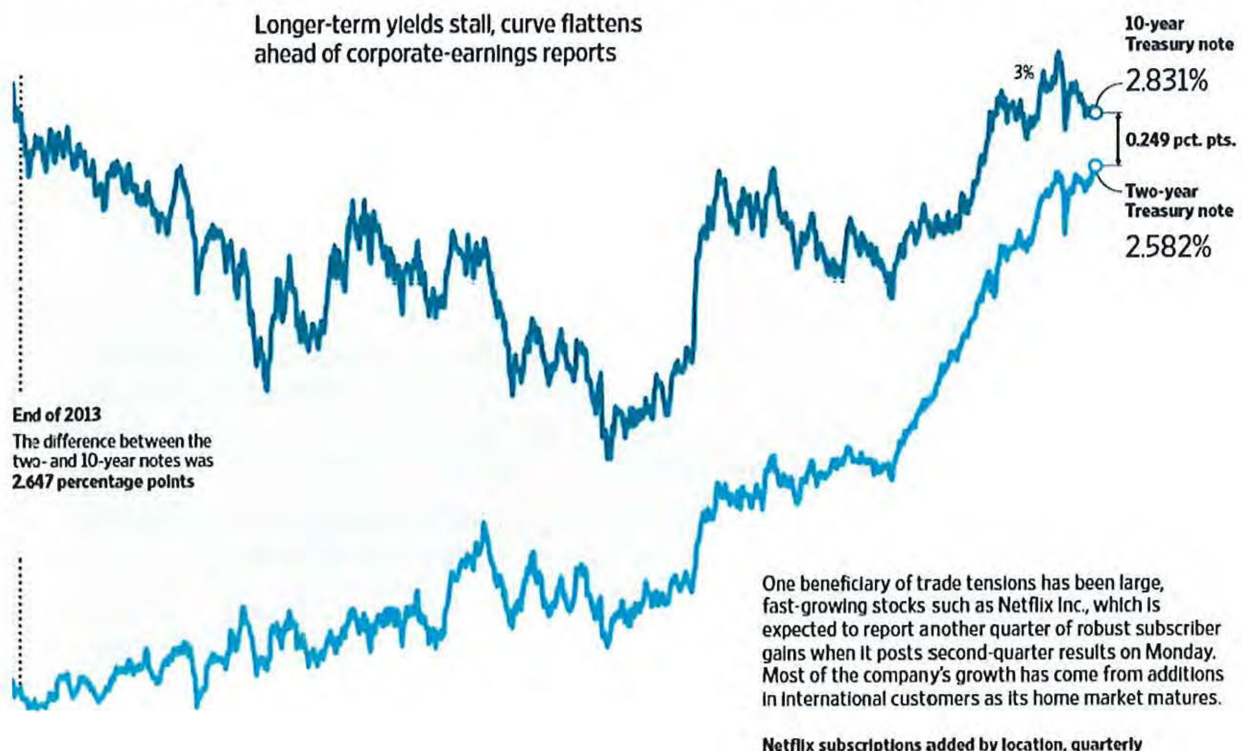
by Daniel Kruger – WSJ – Jul. 16, 2017

Investors will take a fresh look at U.S. government-bond yields this week, after a tame inflation report and **concerns** about **trade frictions** helped **push** the **yield** on the benchmark **10-year Treasury** note **to** a **fifth consecutive weekly decline**.

Yet even as jittery global markets spur demand for the relative safety of government debt, investors see the potential for yields to reverse course yet again. Speculative bets against the 10-year note recently hit a record, highlighting the potential for a shift that many worry could spur a new wave of volatility.

While the **10-year yield** has **stalled**, the **yield on** the **two-year** note, which typically moves in line with expectations for monetary policy, has **climbed**. That is a sign of a narrowing dispersion between shorter-and longer-term rates, known as a **flattening yield curve**.

Many view a flattening curve as a **sign of economic slowdown**, even **though few see** a **recession** on the horizon, leaving analysts debating the signal's meaning. Investors may get more clarity from the week's corporate-earnings reports.



One beneficiary of trade tensions has been large, fast-growing stocks such as Netflix Inc., which is expected to report another quarter of robust subscriber gains when it posts second-quarter results on Monday. Most of the company's growth has come from additions in international customers as its home market matures.

Netflix subscriptions added by location, quarterly

Libor Alternative Passes Big Test

by Vipal Monga and Daniel Kruger – WSJ – Jul. 27, 2018

A benchmark lending rate that regulators and investors hope can replace the scandal-plagued Libor as the foundation for trillions of dollars of debt from credit cards to business loans easily passed a key test.

Mortgage finance giant Fannie Mae sold $6 billion of adjustable-rate securities in the first major trial run of the new index Thursday. The sale marked a milestone for borrowers, investors and bankers as **Libor**, the **London interbank offered rate**, begins its planned wind-down from ubiquitous metric to expiration at the end of 2021.

Once obscure, Libor eventually became the foundation for trillions of dollars of derivatives and other financial contracts. More recently, it was **discredited after** evidence emerged that **bank traders were manipulating it to boost trading profits**.

Banks were fined billions of dollars, and several traders were sent to prison. Since 2012, Libor has been under the supervision of U.K. regulators.

On Thursday, investor demand for the Libor-replacement proved strong enough that it could inspire other borrowers to use the **new benchmark**, analysts said. Known as the **secured overnight financing rate**, or **SOFR**, the new index was developed by a panel of banks and investors overseen by the Federal Reserve, as part of an effort to move contracts away from Libor.

The new product is one of several that aims to address a major challenge for the financial markets, replacing Libor. The Libor-based contracts cover many borrowings including floating-rate home mortgages, business loans and complex financial instruments.

"There is a massive amount of work to do to move all that risk from Libor to another index," said Michael Cloherty, head of interest-rate strategy at RBC Capital Markets. "It's a long, long path." Fannie Mae is part of a group of financial industry associations and banks convened by the Fed in 2014 to address replacing Libor. Last year, the group approved the new rate as an alternative to U.S.-dollar- based Libor.

Libor has been calculated by asking banks how much it theoretically would cost them to borrow money from other banks, making it possible to manipulate.

The new **SOFR rate** is **averaged** from more than **$750 billion of short-term loans made every day,** known as **repurchase agreements** or "**repo**" **trades**, backed by **Treasury securities as collateral**. Analysts expect it to be resistant to attempts at manipulation.

As of **Wednesday**, the **SOFR rate was 1.87%,** based on $753 billion worth of transactions, according the Federal Reserve Bank of New York. Fannie Mae's bonds were priced in three segments, maturing in six, 12 and 18 months, carrying rates that exceeded SOFR by 0.08, 0.12 and 0.16 percentage points, respectively.

The rate is "**more robust**" **than Libor because** it's **based on actual market trades** that reflect the price at which banks and other financial institutions can borrow,

said Greg Moore, head of U.S. fixed-income currencies and commodities at TD Securities USA, which was one of the lead managers on Fannie Mae's offering, along with Barclays Capital Inc. and Nomura Securities International Inc.

Supporting the Libor replacement has been a pressing priority for regulators and market participants as the old benchmark moves closer to disappearing.

Left: **Fed Vice Chairman for Supervision Randal Quarles** last week revealed data showing the dearth of transactions that reference Libor each day, and said banks are "justifiably uncomfortable" with how thin the underlying markets for Libor have become.

Still, Mr. Quarles said the transition toward the replacement rate was proceeding "ahead of schedule."

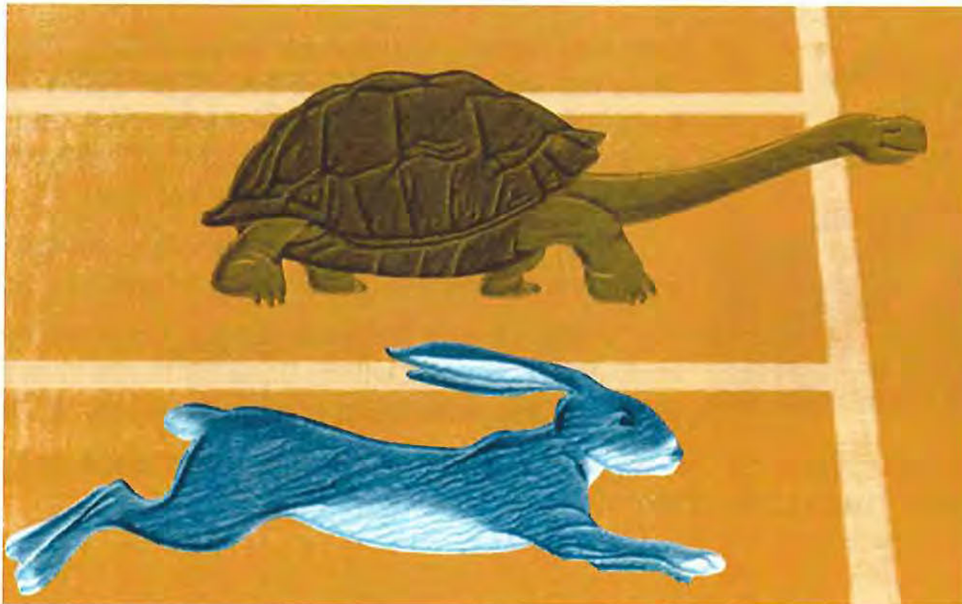
While **Libor's** history has been troubled, the rate will likely continue to be widely used for some time to come, said Moti Jungreis, head of global markets at TD.

In part, that is because the rate is still used in trillions of dollars worth of contracts that were signed before the index fell out of favor.

Sometimes, It's Bonds for the Long Run

by Jason Zweig, Intelligent Investor Column – WSJ – Nov. 2, 2018

When measured in three-decade increments, bonds did better than stocks as recently as 2011.



Maybe investors should **question** the **dogma** of "**stocks for the long run**." History shows that **a portfolio of bonds has outperformed stocks surprisingly often and for shockingly long periods**.

That's the intriguing argument in a **new research paper by Edward McQuarrie**, a **retired business professor at Santa Clara University**. Investors have long taken it as an article of faith that stocks have always beaten bonds – and always will – if you can just hang on long enough. Prof. McQuarrie's research is a **healthy reminder** that this **belief is wrong**. His findings also show the **limits and dangers of extrapolating from** the **past**.

Stocks offer a stake in a business's variable profits in the indefinite future. **Bonds are contracts conferring rights to a fixed stream of income over a certain period**. If stocks didn't offer the prospect of higher return, investors wouldn't want to brave the uncertainty of owning them. But **whether stocks deliver** that **higher return depends** largely **on** how they are **price**d **relative to bonds**.

The popular belief that there's never been a 30-year period in which stocks had lower returns than bonds is false. As recently as **2011**, **bonds had earned higher returns than stocks over** the **prior 30 years** (**long-term Treasury bonds, 10.7% annually**; **U.S. stocks, 10.4%**).

Bonds have **underperformed** **stocks** for **most of history**, **but not always.** New measures suggest the **long-term advantage of stocks** may be **weaker than many investors think**.

That's no aberration, says Prof. McQuarrie. Using digitized antique newspapers to supplement an online database of U.S. stock and bond prices, he assembled an index of bonds back to 1793.

That has enabled him to calculate 30-year returns beginning in 1823. Between then and 2013, he shows, **bonds earned higher returns than stocks in one-quarter of all 191 three-decade-long periods**.

Most of those stretches were in the 19th century. But much of the data on which **Jeremy Siegel**, a finance professor at the University of Pennsylvania's Wharton School, relied for his best-selling 1994 book "Stocks for the Long Run" also came from the same era.

The **difference**: **Prof. McQuarrie constructed his early data with a wide variety of bonds that would have been available to investors at the time**. **Prof. Siegel chose the highest-quality and lowest-yielding bonds available** – often a single U.S. Treasury bond or as few as two municipal bonds.

According to Prof. McQuarrie, the issues tracked in "Stocks for the Long Run" account for less than 5% of the total bond market in much of the 19th century.

Prof. Siegel used so **small** a **sample** in order **to approximate** what economists call the "**risk-free rate**," or the return on a bond with the lowest possible danger of defaulting.

In **academic theory**, that **makes perfect sense**. **In** the **real world**, the **early U.S. had no risk-free rate**. Not only was the **survival of** the **nation often in doubt**, but **from 1835 through 1841** the **U.S. Treasury didn't even have any debt outstanding**. **By** the **1840s eight states had defaulted**. **Most bonds were risky**, so they **often had to offer yields of 5% or more**.

Seen through that wider lens, says Prof. McQuarrie, stocks don't overwhelmingly dominate bonds. "**Sometimes bonds give you a better return; sometimes, stocks do**." Calculations of bond returns based on only a sliver of the market are a "heroic extrapolation," he says.

That the bonds in "Stocks for the Long Run" might have been "a tiny part of the market does not bother me," says Prof. Siegel. He points out that three-month Treasury bills, often used as today's risk-free rate, are also a small fraction of the market.

Could bonds as a whole – as opposed to a handful of high-quality issues – have done better than stocks in the early U.S.?

"That's **possible**, and it might be in the data," **says Prof. Siegel**. "Clearly, in that early period, with bonds that had higher yields, it could well be that the broad bond market may have outperformed stocks."

Prof. McQuarrie calculates that bonds did slightly better than stocks – an average of 5.9% annually versus 5.8%, after inflation – all the way from the beginning of 1793 through the end of 1877.

To come out ahead of bonds back then, you would have had to hold stocks continually for more than 85 years – probably a tad longer than what most investors have in mind when they think of the phrase "stocks for the long run."

Are these returns from the days of steamboats and stovepipe hats relevant today?

The **pattern identified by Prof. McQuarrie has held in** several countries in the modern era. In **France**, **Italy**, **Japan** and Spain, among other nations, **bonds have earned better returns than stocks** – **after inflation—for decades on end** in the post-1900 era.

"Is it **likely** that **stocks will outperform bonds**?" asks **Prof. Siegel**. "**Of course**. **But** should we never **expect** to **find periods when bonds outperform stocks**? No, no, no. We should expect to find that, absolutely."

No one should ever assume that the outperformance of stocks over bonds, even over extremely long periods, **is** "**predestined or foreordained**," he says. That's especially true when interest rates start at high levels.

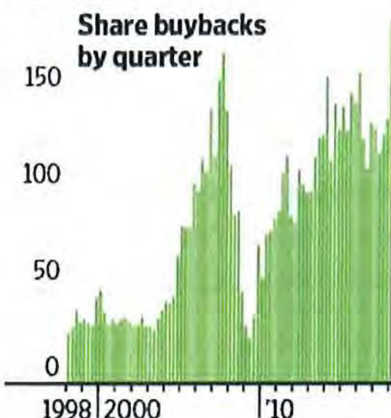
Many investors have put blind faith in stocks, confident that history will repeat itself. **Someday it might** – in a way that investors who have all their money in stocks should hedge against before it's too late.

Stock Prices Defy Surge in Buybacks

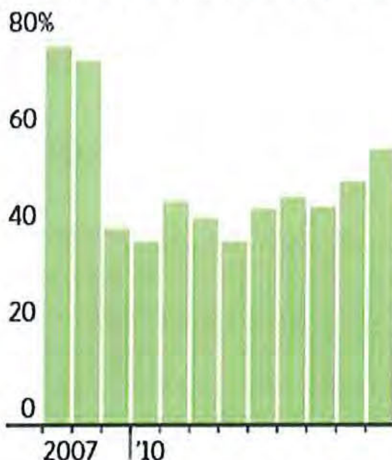
by Michael Wursthorn – WSJ – Jul. 9, 2018

Buyback Bonanza

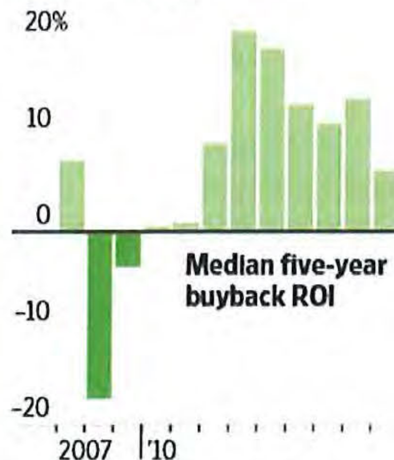
Share repurchases among S&P 500 companies have jumped this year and are set to top a record set in 2007.



The percentage of current S&P 500 companies that bought back shares and failed to beat the S&P 500's annual return is on the rise.



Returns on investment for share buybacks in the S&P 500 is at its lowest point since 2011.



Sources: S&P Dow Jones Indices (share repurchases); FactSet (S&P 500 companies that bought back shares); Fortuna Advisors (ROI)

THE WALL STREET JOURNAL.

U.S. companies are buying back record amounts of stock this year, but their shares aren't getting the boost they bargained for.

S& P 500 companies are on track to repurchase as much as $800 billion in stock this year, a record that would eclipse 2007's buyback bonanza. Among the biggest buyers are companies like Oracle Corp., Bank of America Corp. and JP-Morgan Chase & Co.

But 57% of the more than 350 companies in the S& P 500 that bought back shares this year are trailing the index's 3.2% increase. That is the highest percentage of companies to fall short of the benchmark's gain since the onset of the financial crisis in 2008, according to a Wall Street Journal analysis of share buyback and performance data from FactSet.

The historic spending spree on share buybacks has **some analysts worried companies** are **buying their shares at excessive valuations during** the **peak of** the **economic cycle** and at a time the market rally is nine years old. **Others warn** the **billions of dollars spent to buy back shares could have gone toward capital improvements like new factories or technology** that could lead to stronger long-term growth.

"There has been less of a reward for companies engaging in new buybacks over the last 18 months," said Kate Moore, chief equity strategist and a managing director at

asset- management firm Black-Rock Inc. "It's fair for investors to **ask whether companies are buying at** the **right point**."

The S& P 500 Buyback index, which tracks the share performance of the 100 biggest stock repurchasers, has gained just 1.3% this year, well underperforming the S& P 500.

Share buybacks have become corporate America's go-to strategy for boosting stock prices and earnings over the past 30 years. The point of buybacks is to try to make a company's stock more valuable. By mopping up shares, a company shrinks the stock pie, which boosts earnings per share. That, in turn, should push the share price higher.

The potential problem: **Executives directing buybacks are** essentially **timing** the **market** and **often** they end up **buying high**.

Buyback activity reached a frenzy in the early 2000s; the previous record for share repurchases was $589.1 billion in 2007. But that was just a year before the stock market tumbled into the worst financial crisis since the Great Depression. The result: Companies like Exxon Mobil Corp., Microsoft Corp. and International Business Machine Corp. each paid more than $18 billion to repurchase stock at a peak, only to see their share prices slump a year later.

Stock buybacks appear just as **ill-timed** now, some analysts and investors said, especially as companies ramp up spending after last year's $1.5 trillion tax overhaul put extra cash in their coffers.

Oracle has been one of the biggest buyers of its own stock in recent years and spent $11.8 billion on stock repurchases last year, when shares gained nearly 23%. But that gamble hasn't looked smart this year as the networking-device maker has struggled alongside the broader market, pulling its shares down 6%.

Still, Oracle's board approved a fresh round of share buybacks totaling $12 billion in February, and executives appear to have spent nearly half that sum already. A representative from Oracle declined to comment on its share-buyback program, but the company said in a recent Securities and Exchange Commission filing that it "cannot guarantee" its share repurchase "will enhance long-term stockholder value."

Others like McDonald's Corp., Bank of America and JP-Morgan Chase have spent billions on share repurchases this year but haven't seen a short-term bounce in share prices. McDonald's bought back $1.6 billion of shares in the first quarter, but the fast-food chain's stock is down 7.4% this year. Bank of America and JP-Morgan Chase have both spent more than $4.5 billion to buy back their shares, which are down 5% and 2.7%, respectively.

All three companies also spent multibillion-dollar sums on buybacks in 2017 as the stock market hit repeated highs.

Companies in the S& P 500 that have repurchased shares are expected to see a return on investment of about 6.4% this year, a percentage that falls below the past six

rolling five-year periods as measured by Fortuna Advisors, a financial consulting firm that has examined buyback trends going back to 2007.

Returns on investment for buybacks peaked in 2013, according to Fortuna's analysis, as companies used share repurchases to boost earnings and dig themselves out of the depths of the financial crisis. With stock prices relatively low at the time and economic activity tepid, share buybacks were one of companies' key sources of earnings growth.

But even as the stock market steadied in the subsequent years and economic growth around the world picked up to help boost profits, corporate **executives continued to spend wildly on share repurchases** – often **at** the **expense** of other types of spending, including **dividends and capital improvements**. Spending on capital expenditures rose to $166 billion in the first quarter, up 24% from a year earlier, according to Credit Suisse, but still well below the $189 billion spent on buybacks.

"The majority of capital deployed is going right back to shareholders and not reinvestment in businesses," said Gregory Milano, chief executive at Fortuna. "If that's the only thing you're relying on, it's going to end badly."

Some share buybacks do pay off, but that tends to be among companies that show a high level of sales and earnings growth on their own, analysts said. Apple Inc., for example, has bought back $22.8 billion worth of stock this year. Its shares have risen 11%, with much of the boost coming after it reported strong gains in second-fiscal-quarter revenue and profit – as well as a record $100 billion plan to buy back more stock.

The Great Cheapening of 2018:
Global Stock Valuations Now at Five-Year Lows

by Mike Bird – WSJ – Dec. 12, 2018
Saumya Vaishampayan contributed to this article

The stumble in global equity markets this year has outrun a moderation in expectations for earnings growth, leaving stock valuations at their cheapest in about half a decade by some measures.

What's Happening

The **forward price to earnings ratio for global stocks** is **at five-year lows**, having **dropped to** about **13.3 times**. That's **down from more than 16 times in early 2018**, according to FactSet's World stock index, which includes tens of thousands of listed securities around the world.

The price to earnings ratio is a favorite among analysts and investors for valuing companies.

Valuations for some blue-chip stocks have plumbed multiyear lows: Japan's Honda Motor Co. and U.S. computing giant International Business Machines Corp, for example, have both seen their PE ratios fall to around 10-year lows this quarter.

On one alternative, **price to free cash flow**, which **measures** the **money** a **company has generated after operating expenses and capital spending**, the trend is even more clear. By that measure, **stocks** are the **cheapest** they have been **since early 2012**, when the euro-zone sovereign debt crisis was still raging.

Though price to earnings ratios have fallen in the U.S., the **sharpest proportional declines** have come from **Europe and China**.

The pullback reflects the fact that for all the choppiness in asset markets this year, expectations for earnings growth are still solid. Earnings-per-share of stocks listed on FactSet's World Index are expected to rise about 15.9% in the next 12 months.

That's down from the highs of above 25% earlier this year, but well above the 5.8% average seen in the past five years.

What It Means

Company valuations can't be looked at on their own. **Rising bond yields mean stocks may be cheaper for a reason**: Investors can access a higher risk-free return from ultra-safe government bonds than before, making equities less attractive in general for conservative investors.

Many asset managers have waxed lyrical during the current selloff about the valuation opportunities emerging, but the continued fall in world stocks through the fourth quarter suggests they're not yet in the majority.

"Within Asia, we see most of the emergence of value coming from a couple of places. One is China," said Louis Lau, director of investments at Brandes Investment Partners, who said he had added to his holdings of Chinese banks. He said they were

hoping for another 5% to 10% pullback to get more excited about valuations in the Asian region.

Despite the cross-border slump in valuations, the fact that **U.S. stocks remain more expensive than** their peers **elsewhere in** the **world** is making some investors cautious.

"I am more constructive on the prospects for European, U.K., and Asian markets over the next few years in regard to their ability to generate returns," said Nick Mustoe, one of Invesco's chief investment officers.

Note: Valuations based on 12-month forward expectations. *Data through Tuesday
Source: FactSet

THE WALL STREET JOURNAL.

Bloomberg Businessweek

Tit for Tat for Tit for Tat ...

"Economics" Column by Peter Coy, Andrew Mayeda and Sofia Horta e Costa
edited by Cristina Lindblad – Bloomberg Businessweek – Jun 25, 0118

Gaming out how the trade spat between the U.S. and China could end.

Picking a fight with a trading partner seems like a bad idea, but it's not necessarily irrational. Probing a partner's weaknesses can be an effective way to get a better trade deal, according to **game theory**, the branch of mathematics that deals with strategy; It sometimes makes sense for countries to "test each other's resolve," says Ethan Harris, head of global economics at Bank of America Merrill Lynch. "The act of putting on tariffs teaches you something about the other side," in particular its willingness to retaliate, Harris says. It worked for the U.S. when it threatened South Korea with steel and aluminum tariffs; the Koreans quickly made concessions to escape the tariffs.

The **problem** with tit for tat is not irrationality, but **miscalculation**. If each country keeps escalating in the mistaken expectation that the other side will eventually back down, the result will be high tariff barriers and a reduction in cross-border commerce that leaves both sides worse off. That's the risk the U.S. and China are courting.

Tit: On June 15, President Trump said the U.S. would soon begin charging duties on $50 billion worth of Chinese imports in response to what he says are decades of theft of American know-how. Trump has also signaled he wants to reduce America's $376 billion trade deficit in goods with China.

Tat: China's Ministry of Commerce immediately responded with a statement saying it would counter Trump's measure with "equal scale, equal intensity." Beijing is targeting soybeans, corn, wheat, rice, sorghum, beef, pork, poultry, fish, dairy products, nuts and vegetables, and autos, among other products.

Tit: Unhappy with China's reaction, Trump on June 18 asked his staff to produce a list of $200 billion worth of additional Chinese goods that he could subject to punitive tariffs.

Tat: China said that "if the U.S. loses its senses and publishes such a list, China will have to take comprehensive quantitative and qualitative measures."

Experts surveyed by Bloomberg News lay out four scenarios for how the U.S. trade 'conflict with China could end: Both sides back down, which now seems unlikely in the short term; China blinks; the U.S. blinks; or both sides keep escalating.

The "China blinks" scenario assumes President Xi Jinping won't want to endure a downturn in the Chinese economy, which showed signs it underperformed in May. The "U.S. blinks" scenario assumes China calls Trump's bluff, knowing how much he enjoys a strong economy, rising stock market, and the support of voters in farm states that China could target.

The fourth scenario, in which neither blinks, is the most damaging. "We're not there yet, but it's scary, because it seems like we're on a path toward major conflict, and it's hard to see the off ramp," says Michael Smart, managing director at Rock Creek Global Advisors LLC in Washington and a former international trade director on the National Security Council.

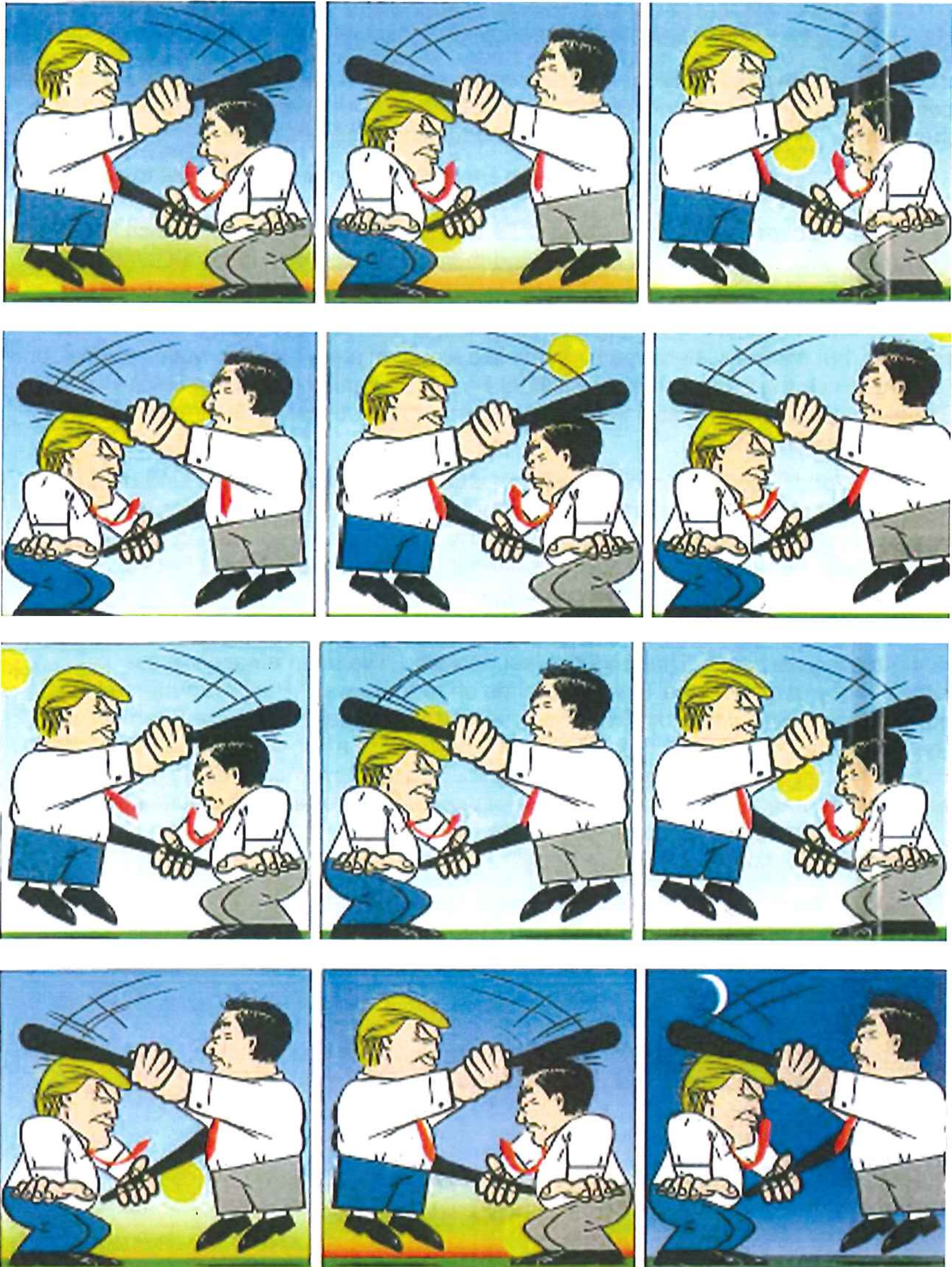
The World Trade Organization was created to prevent exactly this kind of bluffing and brinkmanship. "Trade agreements are a way of escaping from a prisoner's dilemma in which each country acting rationally is stuck doing something that is bad for it individually, but they can't get out of it without a collective agreement," says Dartmouth College economist Robert Staiger.

Trump is convinced he can do better. So far, U.S. stocks have held up pretty well, strengthening his hand. That may not last, though. "I've been amazed at the complacency of markets as Trump marches off to trade war," Paul Krugman, a Nobel laureate economist, wrote on Twitter on June 19. Chinese stocks have been sinking; The Shanghai Composite Index fell almost 4 percent, to a two-year low, on June 19. It rose slightly the next day after People's Bank of China Governor Yi Gang made reassuring remarks. "Things could get a lot worse if the trade war escalates and China fights back in an unconventional way," says Hao Hong, chief strategist with Bocom International Holdings Co, in Hong Kong.

No one's backing down yet. Says Merrill Lynch's Harris: "China thinks they can wait it out longer. Trump thinks he can hit them harder. They're not just beating each other up for the fun of it. They think they have an advantage, and they're only slowly learning that maybe they don't."

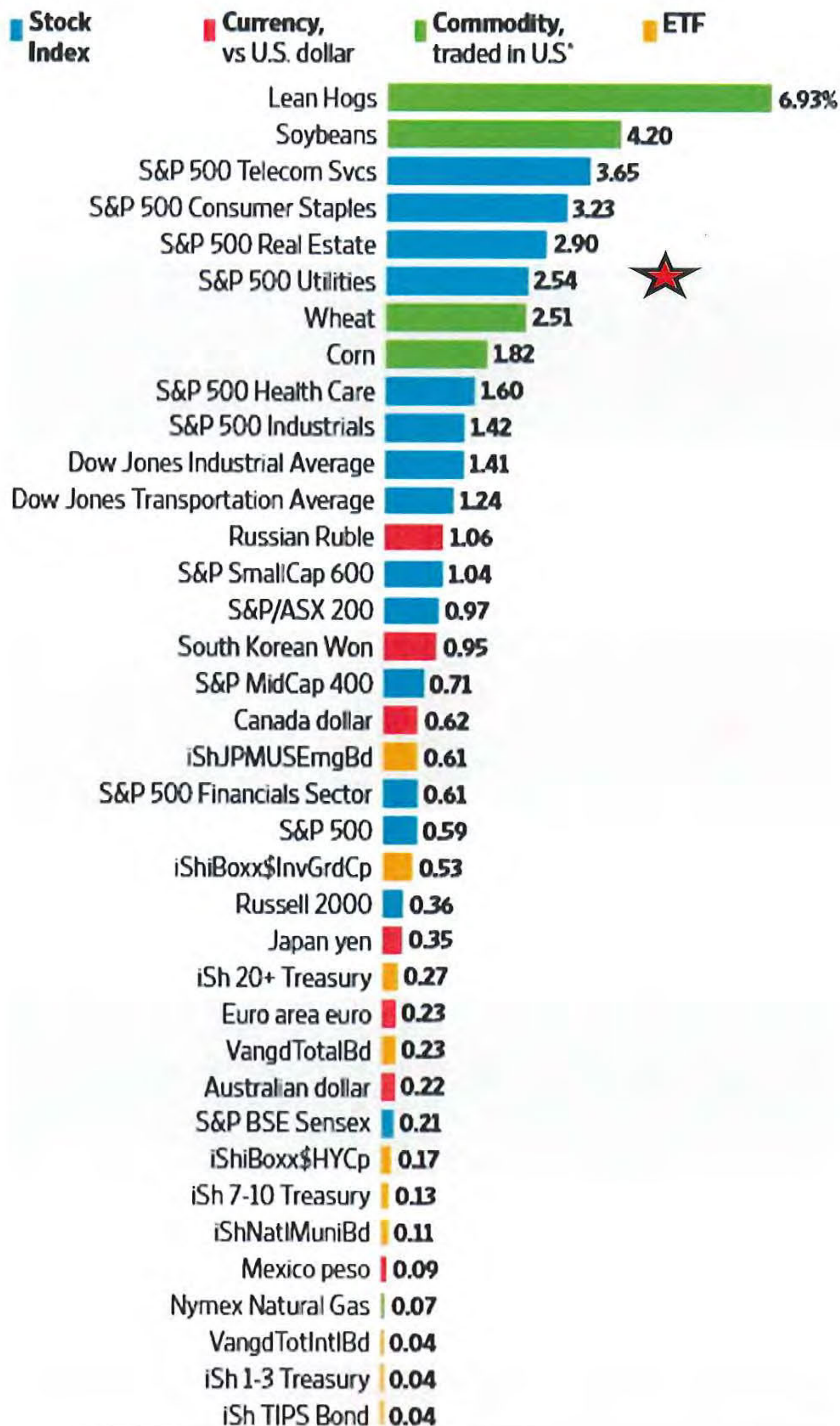
The Bottom Line:

There are four possible outcomes to the U.S.- China trade dispute. A lot depends on how much economic damage each side is willing to tolerate.



Track the Markets: Winners for the Week.

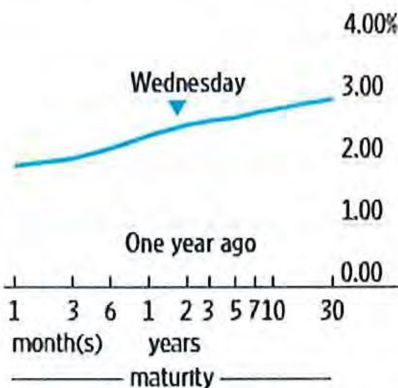
WSJ – Aug. 18, 2018


Stock Index
Currency, vs U.S. dollar
Commodity, traded in U.S.*
ETF
Lean Hogs 6.93%
Soybeans 4.20
S&P 500 Telecom Svcs 3.65
S&P 500 Consumer Staples 3.23
S&P 500 Real Estate 2.90
S&P 500 Utilities 2.54
Wheat 2.51
Corn 1.82
S&P 500 Health Care 1.60
S&P 500 Industrials 1.42
Dow Jones Industrial Average 1.41
Dow Jones Transportation Average 1.24
Russian Ruble 1.06
S&P SmallCap 600 1.04
S&P/ASX 200 0.97
South Korean Won 0.95
S&P MidCap 400 0.71
Canada dollar 0.62
iShJPMUSEmgBd 0.61
S&P 500 Financials Sector 0.61
S&P 500 0.59
iShiBoxx$InvGrdCp 0.53
Russell 2000 0.36
Japan yen 0.35
iSh 20+ Treasury 0.27
Euro area euro 0.23
VangdTotalBd 0.23
Australian dollar 0.22
S&P BSE Sensex 0.21
iShiBoxx$HYCp 0.17
iSh 7-10 Treasury 0.13
iShNatlMuniBd 0.11
Mexico peso 0.09
Nymex Natural Gas 0.07
VangdTotIntlBd 0.04
iSh 1-3 Treasury 0.04
iSh TIPS Bond 0.04

Treasury Yields Fall In Search for Havens

by Akane Otani – WSJ – Aug. 16, 2018

U.S. Treasury yields fell as **fears** of an emerging-market rout rippling into developed markets kept global investors cautious.



The **yield** on the **benchmark 10-year U.S. Treasury note settled at 2.852%, down** from 2.893% Tuesday. **Yields, which fall as bond prices rise**, slipped overnight and held on to their declines as major stock indexes in China, Europe and the U.S. lost ground and commodities prices tumbled.

The downbeat mood among equity investors helped stoke **demand for Treasurys**, which are often considered **havens when** the **outlook for growth looks shaky**.

The recent **collapse** in the **Turkish lira**, which has taken a toll on other currencies such as the Indonesian rupiah, Mexican peso and South African rand, has raised fears among investors of a broader pullback from emerging-market assets. On Wednesday, Indonesia's central bank raised interest rates for the fourth time in three months, the latest measure that officials there have taken to attempt to bolster the country's currency.

Corporate Borrowing Rates and Yields

Bond total return index	Close	Yield (%) Last	Yield (%) Week ago	52-Week High	52-Week Low	Total Return (%) 52-wk	Total Return (%) 3-yr
Treasury Ryan ALM	1446.022	**2.778**	2.880	2.945	1.818	**-1.359**	0.807
10-yr Treasury, Ryan ALM	1690.619	**2.852**	2.969	3.109	2.058	**-3.107**	0.079

"A weakening currency has foreign investors running for the hills, so it is a vicious downward cycle that is difficult for governments and their senior monetary officials to break free of and restore market and business confidence," said Chris Rupkey, chief financial economist at MUFG.

Worries about the **global outlook** persisted even as the lira rebounded Wednesday and upbeat economic data in the U.S. pointed to sustained resilience in the domestic economy.

Commerce Department data showed U.S. retail sales jumped 0.5% in July from the prior month, extending a rebound in consumer spending that began in the second quarter.

Despite the strong data, the yield on the 10-year Treasury remained lower for the day, suggesting **investors** are **bidding up haven assets**.

Treasury Yields Fall In Search for Havens

by Akane Otani – WSJ – Aug. 16, 2018

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Sources: Ryan ALM; Tullett Prebon; Dow Jones Market Data

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U.S. Bond Market Gets More Domestic

by Daniel Kruger – WSJ – Aug. 20, 2018

The **U.S. government** has been **issuing more debt this year**. **So far, U.S. investors have largely financed that increase**.

Foreign holdings of federal debt have **remained essentially flat**, though the **government's borrowing has risen by $500 billion**, giving **overseas investors** the **smallest share of U.S. government debt since 2003**.

Even as yields on **Treasury securities** have risen to **multi-year highs**, **foreign demand for debt at government bond auctions** has slowed to the **weakest level since 2008**.

One of the possible reasons: some foreign investors are concerned that the $1.5 trillion tax cut passed by Congress in December will overstimulate the U.S. economy, leading to an acceleration in inflation and potentially higher bond yields and interest rates.

While the tax cuts are stimulative, shifts in Federal Reserve policy and foreign purchases have led U.S. investors to purchase roughly $300 billion more Treasurys than would have been the case had Fed policy remained unchanged and foreign investors added to their holdings at their previous pace.

The **drop in foreign demand** is happening **as Treasury yields approach** their **highest premiums over German and Japanese debt since** the **1980s** and as the dollar is in the middle of a rally that caught many investors by surprise. The drop-off also coincides with a Fed decision to reduce its government bond holdings.

U.S. Economy Grew at 4.1% Rate in Second Quarter

by Harriet Torry – WSJ – Jul. 27, 2018
Theo Francis, Eric Morath and Vivian Salama contributed to this article.

Consumer spending, **exports** and **business investment power strongest growth pace in nearly four years**

The U.S. economy grew at the fastest pace in nearly four years this spring, reflecting **broad-based momentum** that suggests the second-longest expansion on record isn't yet running out of fuel.

Robust consumer spending, solid business investment, surging exports and **increased government outlays** were among the factors that boosted gross domestic product – the value of all goods and services produced across the economy –- at a seasonally- and inflation-adjusted annual rate of 4.1% in the second quarter, the Commerce Department said Friday.

That was up from the first quarter's revised growth rate of 2.2% and the strongest growth since the third quarter of 2014.

While some of the growth came from a burst of exports that some analysts warned could be a temporary response to looming trade tariffs, the details of the report suggest **underlying strength** that could tee up one of the best years in the current expansion, which began in 2009.

After stripping out the volatile categories of trade, inventories and government spending, sales to private domestic buyers rose at an annual rate of 4.3% – even better than the overall GDP number.

"The **outlook for** the **industrial economy remains solid**," **United Parcel Service** Inc. Chief Executive David Abney said during a call with investors on Wednesday.

Friday's report makes it highly likely the Federal Reserve will continue gradually raising short-term interest rates to prevent the economy from overheating. Central bank officials have raised rates twice this year, and penciled in two more increases in 2018 and three in 2019.

The Fed is widely expected to leave its benchmark rate unchanged at its policy meeting next week and then increase it in September by a quarter of a percentage point, to a range between 2% and 2.25%.

Consumers – buoyed by low unemployment, steady job growth and recent tax cuts – ramped up their spending at a robust 4% annual pace in the second quarter.

Isaac Gary, 22, who works full time as a telecommunications project administrator in Chicago, said he recently bought himself a used car and is planning to go on a cruise to Cozumel, Mexico, for his birthday in September.

Mr. Gary said he also works for a private security firm on weekends and has a small online shoe reselling business, "so I was pretty comfortable shopping for a new car." Referring to his multiple income sources, he added, "I do feel confident because I have different networks coming in."

As Americans spent more, however, they saved less. The personal saving rate was 6.8% in the period, down from 7.2% in the first three months of the year.

In a potential warning signal for future spending, consumer sentiment cooled in July, continuing to moderate from a 14-year high the index of consumer sentiment touched earlier this year, the University of Michigan said Friday. "Concerns about tariffs greatly accelerated in the July survey," said Richard Curtin, the survey's chief economist.

Trade contributed strongly to the economy's performance. Net exports added 1.06 percentage point to the second quarter's 4.1% GDP growth rate, which likely reflected a surge in soybean exports as buyers abroad rushed to get their supplies before China's 25% retaliatory tariffs on the U.S. crop hit in July.

"Some giveback in this unusual spike should be expected," JPMorgan Chase economist Michael Feroli said in a note, adding "ongoing dollar strength is another reason to believe that last quarter's big net export addition to GDP growth won't be repeated soon."

According to MasterCard Inc. CEO Ajay Banga, however, recent trade tensions hadn't yet caused widespread economic damage.

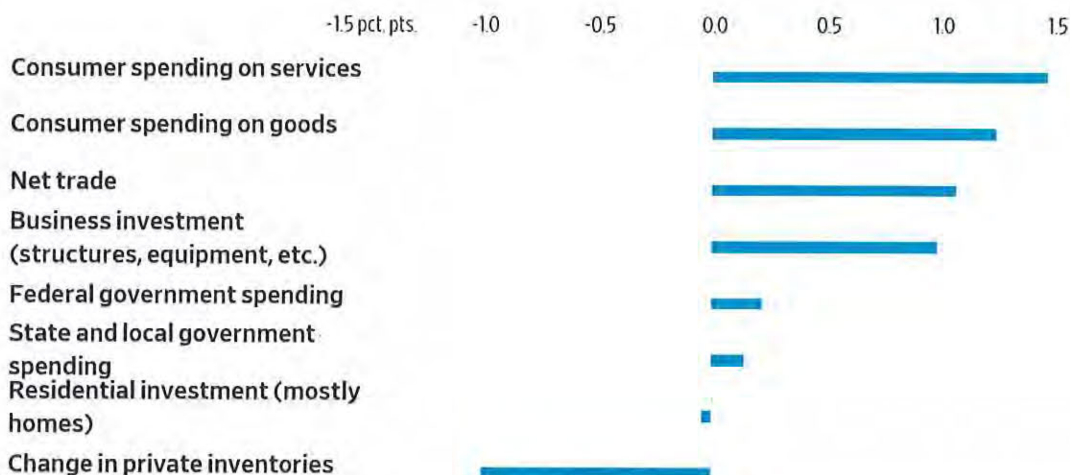
"There are geopolitical and trade-related risks that we are keeping a close eye on," Mr. Banga told investors on a call Thursday. "But as of now, they had limited impact to date and global economic trends remained generally positive."

For some Americans, trade barriers are causing anxiety. Terry Schultz, president of Madison, S.D.-based seed producer Mustang Seeds, said tariffs on U.S. soybean exports have "ramped up pressure on profitability" for the farming sector, which has already been under pressure from lower commodity prices in recent years.

"Our sales numbers are good. What's always a concern is the profitability of our customers and their ability to pay us," Mr. Schultz said.

A key measure of business spending moderated from the first quarter but remained robust. Nonresidential fixed investment – reflecting spending on commercial construction, equipment and intellectual property products such as software – rose at a 7.3% rate after rising 11.5% in the first quarter.

Contributions to Annualized Growth



The 2017 tax overhaul was designed to encourage such investments by lowering the corporate tax rate and by letting companies immediately deduct certain capital expenditures instead of depreciating them over time.

Tax cuts were part of President Donald Trump's plan to boost economic growth to the above-3% annual growth rate that marked the robust expansions of the 20th century.

He hailed the GDP report Friday, saying the economy is growing at a "very sustainable" pace and predicting it will expand at least 3% this year.

Economic forecasters largely agreed the **tax legislation** would **boost growth in** the **near term**, **but** were split over whether the legislation would increase the economy's growth rate over the **long term** in the face of an **aging population** and **meager productivity growth.**

Output rose 2.8% in the second quarter from the same period of 2017. F ed officials expect to see growth hit the same pace in the fourth quarter of this year from a year earlier, which would mark the best calendar year since 2005. However, they forecast growth to ebb to 1.8% a year in the long run.

"Enjoy it while it lasts," Ian Shepherdson, chief economist at Pantheon Macroeconomics, said of the strong second quarter. He expects consumer spending to slow in the third quarter as the boost from the tax cuts fades.

The GDP report included two main soft spots—housing and inventories.

Residential fixed investment fell at a 1.1% rate in the second quarter. That could reflect higher mortgage rates, low housing inventory and tax-code changes that diminished decades-old perks that encouraged homeownership.

A drop in inventories subtracted 1 percentage point from the second-quarter growth rate, largely offsetting the gain from exports.

Some analysts said, however, that could help boost third-quarter growth if businesses restock their shelves in anticipation of continued strong demand.

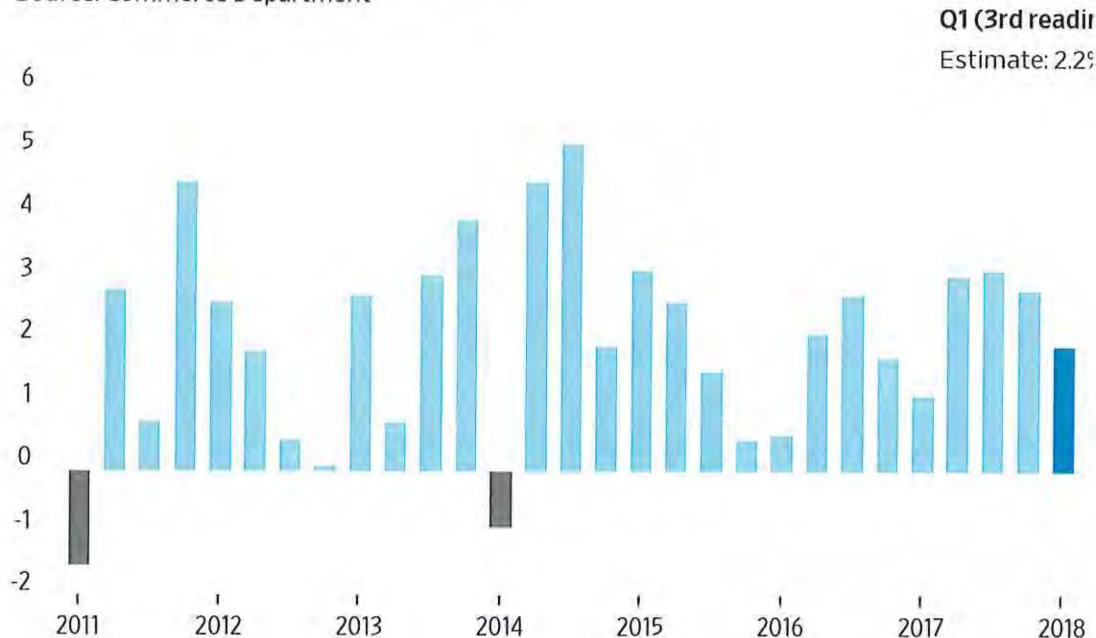
Growth has been **lackluster during** the **current expansion compared with** its **recent predecessors**: From the second quarter of 2009 through the second quarter, GDP increased at an average annual rate of 2.3%, below the 2.9% rate during the 2001-07 expansion and the 3.6% rate from 1991 to 2001.

U.S. Economy Was Weaker Last Quarter Than We Thought

by Sharon Nunn – WSJ – Jun. 28, 2018

Consumers spent less, and the housing market continued to weigh on growth

GDP Annualized Quarterly Change



Economic growth was slower at the **beginning** of this **year than** the **government previously reported**, as consumers pulled back spending and the housing market weighed down output.

Gross domestic product, a broad measure of the goods and services produced across the U.S., expanded at a seasonally and inflation-adjusted annual rate of **2%** in the **first quarter**, the **Commerce Department** reported Thursday. That was weaker than an earlier estimate of 2.2% growth.

Consumers spent less on services than previously thought. Health-care purchases by nonprofits and spending on finance and insurance services were all weaker than the government previously reported. The economy also saw less private inventory investment, chiefly in retail inventories.

Still, investment outside of the housing market, such as computer software and research and development, was stronger than earlier thought, growing by the fastest pace in about three years.

"Although GDP growth in the first quarter was revised lower, and was softer than in the last three quarters of 2017 when growth averaged 2.7%, the economy is in much better shape than the headline number would indicate," said PNC chief economist Gus Faucher.

One potential issue: First-quarter growth has been weaker compared with other quarters in recent years because of issues with the way the government seasonally adjusts economic data. In the longer term, the economy grew 2.8% in the first quarter from a year earlier.

Analysis suggests **growth has picked up in the second quarter**. Forecasting firm Macroeconomic Advisers on Wednesday projected GDP growth would hit a 5.3% annual rate in the second quarter while the **Federal Reserve Bank of Atlanta's GDPNow model projected output would grow 4.5%**. The **Commerce Department will release second-quarter growth data** at the **end of July**, along with **comprehensive revisions of historical data**.

Economists think growth will remain robust throughout 2018, buoyed by an ultralow unemployment rate and steady job and wage growth. At the same time, the late-2017 tax overhaul could encourage spending by businesses and consumers.

A gauge of company earnings, profits after tax without inventory valuation and capital consumption adjustments, rose a seasonally adjusted 10.6% in the first quarter, above the previous reading that showed a 7.8% increase. This could signal the newly lowered federal corporate tax rate, which was cut to 21% from 35%, and other tax-law changes may have affected businesses' bottom lines substantially.

The first quarter saw residential investment weigh on growth. Home building and renovations declined at a revised annual rate of 1.1%. This could reverse in the second quarter. U.S. housing starts rebounded last month to the highest level since 2007.

Meanwhile, consumer spending, which accounts for more than two-thirds of total U.S. economic output, increased at a 0.9% annual pace last quarter. This signals pullback from more robust spending notched during the second half of 2017, which saw a strong holiday buying season and a swell of hurricane-related purchases, like replacement cars. A particularly harsh winter has also been blamed for part of the weaker purchasing in the first quarter.

"The slowdown in consumer spending in particular may raise an eyebrow, but the softer result should be viewed with a healthy dose of skepticism," said Jim Baird, chief investment officer at Plante Moran Financial Advisors. "Growth in the second quarter is largely believed to have regathered momentum."

Personal-consumption expenditures, a measure of household spending, increased a seasonally adjusted 0.6% in April from the prior month, according to the Commerce Department. That was the largest increase in five months, signaling a rebound in spending.

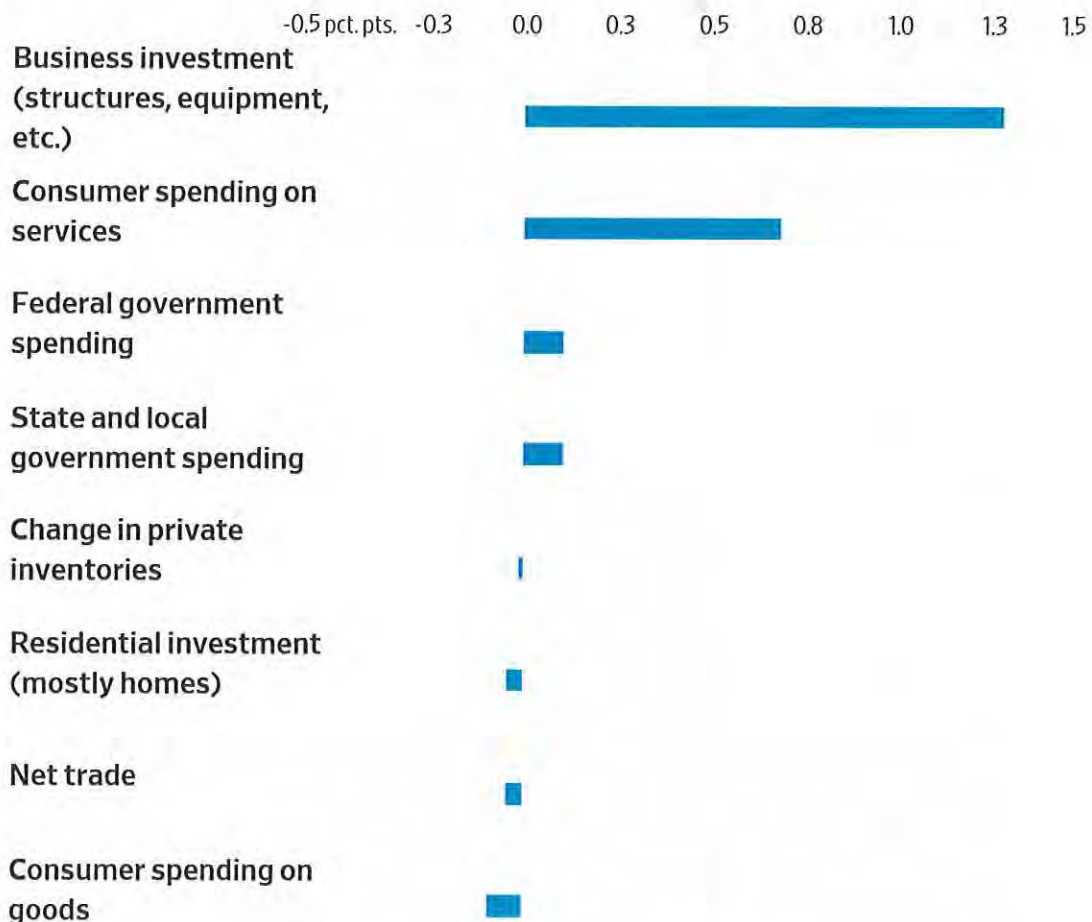
Francesca's Holdings Corp. , which sells women's apparel, accessories and home goods, saw net sales for the first quarter decline, largely because of lower foot traffic in stores and fewer customers actually making purchases when they did walk through the door. Still, the company saw the decline moderate heading into the spring.

"I know there's been various reports out there, weather impact on business in [the first quarter]," Steven Lawrence, Francesca's chief executive, said on a recent earnings

call. "But clearly, you could see it in the seasonal categories. We did definitely see the apparel trends pick up as we got deeper into that April time period and the weather warmed up."

Business as Usual:

The GDP grew at a 2.0% annual rate in the first quarter on continued momentum in business investment, though gains were offset by a slowdown in consumer spending and residential Investment.



Source: Commerce Department. Note: Adjusted for inflation and seasonality

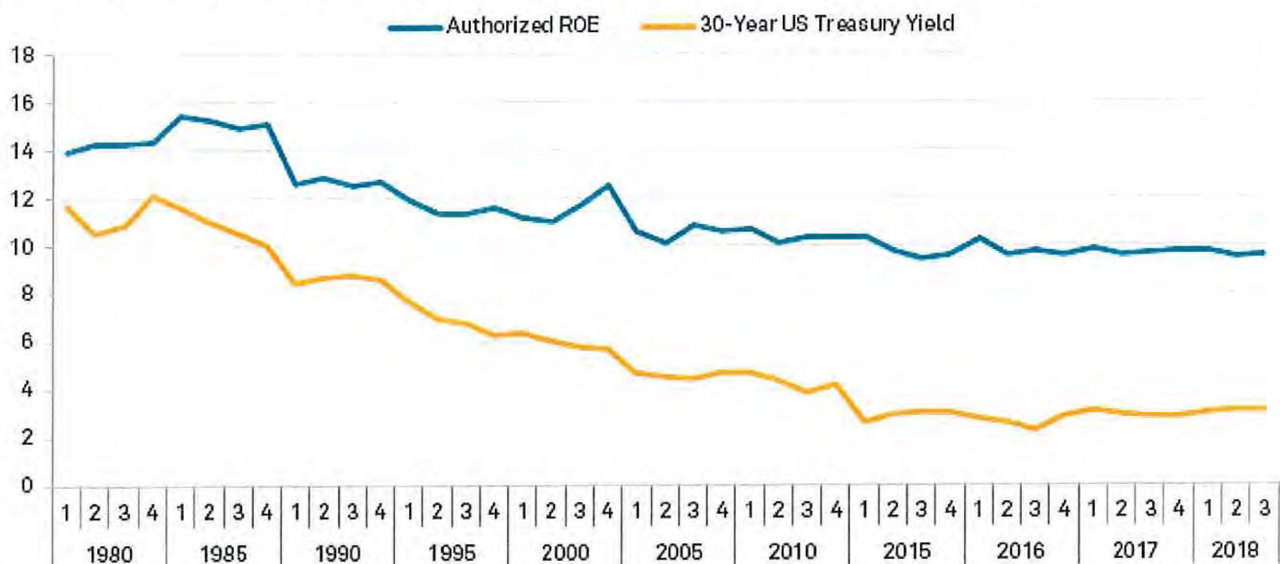
The report also showed government spending grew at a 1.3% annual pace last quarter, with **federal and state spending slowing** from stronger spending seen at the end of last year.

Net exports docked 0.04 percentage point from the overall GDP growth rate in the first quarter. Change in private inventories subtracted 0.01 percentage point. Both categories tend to be volatile from quarter to quarter.

US Electric Returns on Equity Authorizations for 2018 Year-to-Date

by Lisa Fontanella – Regulatory Research Associates (RRA)
An affiliate of S&P Global Market Intelligence – Oct. 25, 2018

The **average allowed returns on equity for electric utilities have trended lower since the 1980s**. The **downward trend** in **authorized ROE over** the **past several years** is **consistent** with the **declining interest rate environment**. **In addition**, the **proliferation** of **automatic adjustment** and **investment recovery mechanisms** that **reduce** the **business risk of** a **utility** have often been cited as a **contributing** factor by **commissions** in **authorizing lower ROEs**.



Looking at recent years, the average authorized ROEs for all electric utilities have declined from 10.03% in 2013, to 9.91% in 2014, 9.85% in 2015, 9.77% in 2016, 9.74% in 2017 and 9.64% in the first three quarters of 2018. The yield on the U.S. Treasury 30-Year bond has increased slightly since bottoming out in 2016. Even **though interest rates** have **begun to rise** in the broader economy, **average authorized ROEs have not followed suit.**

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Average electric return on equity authorizations (%)

Data compiled Oct. 24, 2018; 2018 YTD reflects return authorizations from Jan. 1, 2018, through Sept. 30, 2018.
Source: Regulatory Research Associates, an offering of S&P Global Market Intelligence

This aforementioned returns include several **limited-issue rider cases**. **Excluding these cases** from the 2018 data, the authorized ROEs set by state public utility commissions have **averaged 9.59% in rate cases decided in the first nine months of 2018**, somewhat **below** the **9.68% average for the full year 2017**. The difference between the ROE averages including rider cases and those excluding the rider cases is largely driven by **ROE premiums of up to 200 basis points approved by** the **Virginia State Corporation Commission** in riders related to certain generation projects (see the Virginia Commission Profile). For further information regarding rate of return trends, refer to RRA's Major Rate Case Decisions Quarterly Update.

There were 37 electric ROE determinations in the first nine months of 2018 rendered in 22 different state jurisdictions and the District of Columbia. The ROE determinations authorized by state public utility commissions during this period have ranged from 8.58% to 11.20%, with a median of 9.7% and an average of 9.64%. Of those 37 determinations, 19 were authorized in vertically integrated cases, nine were authorized in distribution only cases and nine were authorized in limited-issue rider proceedings. In the relevant nine-month period, 20 of the 37 cases were settled and 17 were fully litigated.

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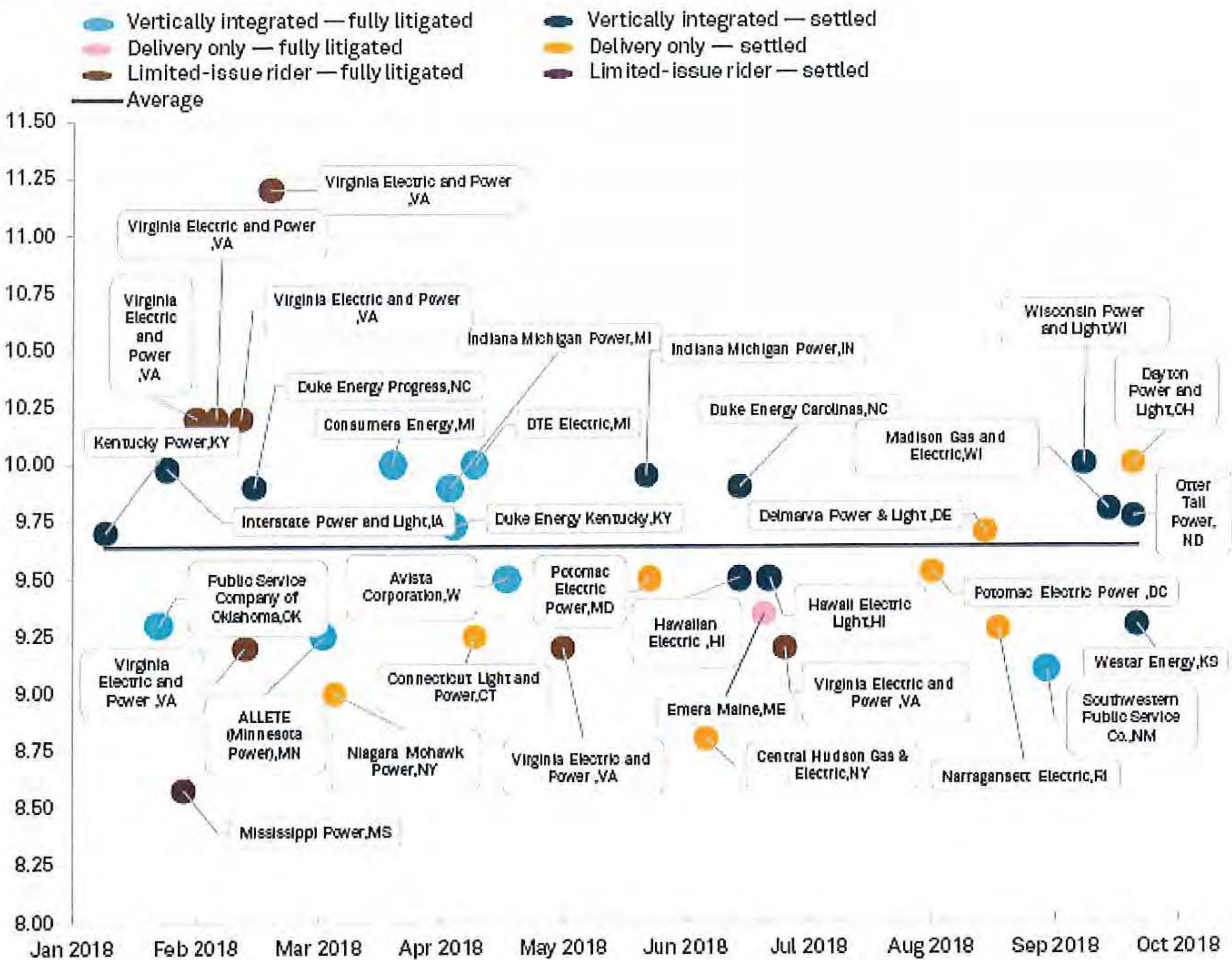

Data compiled Oct. 24, 2018; reflects return authorizations from Jan. 1, 2018, through Sept. 30, 2018.
Source: Regulatory Research Associates, an offering of S&P Global Market Intelligence

As noted in the accompanying chart, for those electric companies in which an ROE authorization was rendered in a case decided in the first nine months of 2018, both the highest and lowest electric ROEs have been authorized in limited-issue rider proceedings. Authorized ROEs in these cases have ranged from 8.58% to 11.2%, averaging 9.8% for the first nine months of 2018, with a median of 10.2%.

The **highest ROE authorized** in the limited-issue proceedings, at **11.2%,** was **authorized** by the **Virginia State Corporation Commission**, or **SCC**, in a proceeding for Virginia Electric and Power Co's. **investment** in **biomass conversions** at the Hopewell - Polyester, Altavista and Southampton VA plants. The conversions were completed in 2013. The rider was initially approved in 2012, at which time the SCC indicated that, as permitted by law, a **200-basis-point premium** would apply to the projects beginning with construction through the first five years of the units' useful lives.

The **11.2% ROE includes** the **200-basis-point incentive**. The **underlying base ROE** of **9.2% was below** the **industry average**.

The **lowest ROE authorized**, at **8.58%,** was approved by the **Mississippi P**ublic **S**ervice **C**ommission for Mississippi Power Co. following a settlement in a limited issue proceeding that pertained to the company's integrated coal gasification combined-cycle Kemper plant.

The **19 authorized ROEs in vertically integrated cases** ranged from **9.1% to 10%**, with a median of 9.77% and an **average of 9.69%** over the **first nine months of 2018**. The **highest** ROEs, **at 10%,** were **approved** by the **Michigan P**ublic **S**ervice **C**ommission as part of fully litigated rate case proceedings for both Consumers Energy Co. and DTE Electric Co. in March and April and by the Public Service Commission of Wisconsin for Wisconsin Power and Light Co., or WP&L, in September.

For CMS Energy subsidiary Consumers Energy, the PSC found a 10% ROE to "best achieve the goals of providing appropriate compensation for risk, ensuring the financial soundness of the business, and maintaining a strong ability to attract capital." For DTE Energy subsidiary DTE Electric, the **PSC** indicated that it **factored into** its **determination** the **company's unique circumstances** and **characteristics** and **rising interest rates.**

The 10% ROE adopted by the Wisconsin commission for WP&L followed the adoption of a settlement that freezes the company's electric and gas rates at 2017 levels for 2018 and 2019. WP&L's settlement is the first application of a new settlement law for the state of Wisconsin. The law, enacted Jan. 31, gives the PSC authority to approve rate case settlements negotiated between utilities and intervening parties. Prior to 2018, Wisconsin law did not contain a specific statutory provision related to settlements. The new law embodies the substantive standards under existing law that were previously applied by the commission for approving previous settlements and adds additional procedural and substantive criteria. The new law encourages parties to enter into settlements when possible and allows parties to file objections or non-objections within 30 days after service of the settlement agreement. WP&L is a unit of Alliant Energy Corp.

The **lowest authorized equity return**, at **9.1%,** was authorized by the **New Mexico P**ublic **R**egulation **Commission** in a **fully litigated case** for Xcel Energy Inc. subsidiary Southwestern Public Service Co. In adopting this below industry average return, the commission found that this ROE "would result in **fair compensation for investors** and **no higher cost than necessary to retail customers** and would **also** support SPS's **financial integrity** and **credit standing**."

The **second lowest ROE** determination for this group was **9.25%,** which was authorized by the **Minnesota P**ublic **U**tilities **C**ommission in a **fully litigated case** for ALLETE Inc. utility Minnesota Power Inc. The **commission found** a 9.25% equity **return** to be "**sufficient** to **establish just and reasonable rates**, while **adequately assuring** a **fair and reasonable return** in light of the Company's unique **risk profile**, **capital structure**, and **costs of obtaining equity investment**."

The nine **ROE authorizations** rendered in **delivery only cases ranged from 9% to 10%, averaging 9.38%** over the **first three quarters of 2018**, with a median of 9.35%.

For utilities engaged in **distribution only operations**, the **highest** return, **just shy of 10%**, was issued for AES Corp. subsidiary Dayton Power and Light Co., or DP&L, by the **P**ublic **U**tilities **C**ommission of **Ohio** following the adoption of a settlement. The DP&L decision was the first electric authorization rendered by the commission since 2013 and the first ROE authorized the company since 1992.

The **lowest ROE authorized** for **delivery only cases**, at **8.8%,** was authorized by the **New York P**ublic **S**ervice **C**ommission for Central Hudson Gas & Electric Corp., following the adoption of a **settlement**. The adopted 8.8% ROE is lower than the equity returns authorized for the state's major utilities operating under a PSC approved multiyear rate plan. However in this case, the commission adopted settlement authorizes a capital structure with an increasing equity ratio during the course of the rate plan, 48% in rate year 1, 49% in rate year 2, and 50% in rate year 3, in large part to address concerns regarding the negative credit implications on the company as a result of the federal tax reform law. The PSC's longstanding practice has been to cap a utility's equity ratio for ratemaking purposes at 48% absent extenuating circumstances. Central Hudson Gas & Electric is a subsidiary of CH Energy Group Inc., which is a subsidiary of Fortis Inc.

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2018 Electric return on equity authorizations through Sept. 30

Vertically integrated cases

Companies	State	Date of decision	ROE (%)	Decision type
Kentucky Power	KY	1/18/2018	9.70	Settled
Public Service Company of Oklahoma	OK	1/31/2018	9.30	Fully litigated
Interstate Power and Light	IA	2/2/2018	9.98	Settled
Duke Energy Progress	NC	2/23/2018	9.90	Settled
ALLETE (Minnesota Power)	MN	3/12/2018	9.25	Fully litigated
Consumers Energy	MI	3/29/2018	10.00	Fully litigated
Indiana Michigan Power	MI	4/12/2018	9.90	Fully litigated
Duke Energy Kentucky	KY	4/13/2018	9.73	Fully litigated
DTE Electric	MI	4/18/2018	10.00	Fully litigated
Avista Corporation	WA	4/26/2018	9.50	Fully litigated
Indiana Michigan Power	IN	5/30/2018	9.95	Settled
Duke Energy Carolinas	NC	6/22/2018	9.90	Settled
Hawaiian Electric	HI	6/22/2018	9.50	Settled
Hawaii Electric Light	HI	6/29/2018	9.50	Settled
Southwestern Public Service Co.	NM	9/5/2018	9.10	Fully litigated
Wisconsin Power and Light	WI	9/14/2018	10.00	Settled
Madison Gas and Electric	WI	9/20/2018	9.80	Settled
Otter Tail Power	ND	9/26/2018	9.77	Settled
Westar Energy	KS	9/27/2018	9.30	Settled
Average			9.69	
Median			9.77	

Delivery only cases

Companies	State	Date of decision	ROE (%)	Decision type
Niagara Mohawk Power	NY	3/15/2018	9.00	Settled
Connecticut Light and Power	CT	4/18/2018	9.25	Settled
Potomac Electric Power	MD	5/31/2018	9.50	Settled
Central Hudson Gas & Electric	NY	6/14/2018	8.80	Settled
Emera Maine	ME	6/28/2018	9.35	Fully litigated
Potomac Electric Power	DC	8/9/2018	9.53	Settled
Delmarva Power & Light	DE	8/21/2018	9.70	Settled
Narragansett Electric	RI	8/24/2018	9.28	Settled
Dayton Power and Light	OH	9/26/2018	9.99	Settled
Average			9.38	
Median			9.35	

Limited-issue rider cases

Companies	State	Date of decision	ROE (%)	Decision type
Mississippi Power	MS	2/6/2018	8.58	Settled
Virginia Electric and Power	VA	2/9/2018	10.20	Fully litigated
Virginia Electric and Power	VA	2/14/2018	10.20	Fully litigated
Virginia Electric and Power	VA	2/20/2018	10.20	Fully litigated
Virginia Electric and Power	VA	2/21/2018	9.20	Fully litigated
Virginia Electric and Power	VA	2/27/2018	11.20	Fully litigated
Virginia Electric and Power	VA	5/10/2018	9.20	Fully litigated
Virginia Electric and Power	VA	7/3/2018	9.20	Fully litigated
Virginia Electric and Power	VA	7/3/2018	10.20	Fully litigated
Average			9.80	

The Washington Post

As U.S. Fertility Rates Collapse, Finger-Pointing and Blame Follow

by Ariana Eunjung Cha – Washington Post – Oct. 19, 2018

https://www.washingtonpost.com/health/2018/10/19/us-fertility-rates-collapse-finger-pointing-blame-follow/?noredirect=on&utm_term=.712423a02e1d

New data confirms historic declines across all races, in both urban and rural areas. **Women** are **now having fewer babies and at older ages than** in the **past three decades**.

As 2017 drew to a close, House Speaker Paul D. Ryan (R-Wis.) urged Americans to have more children. To keep the country great, he said, we're "going to need more people."

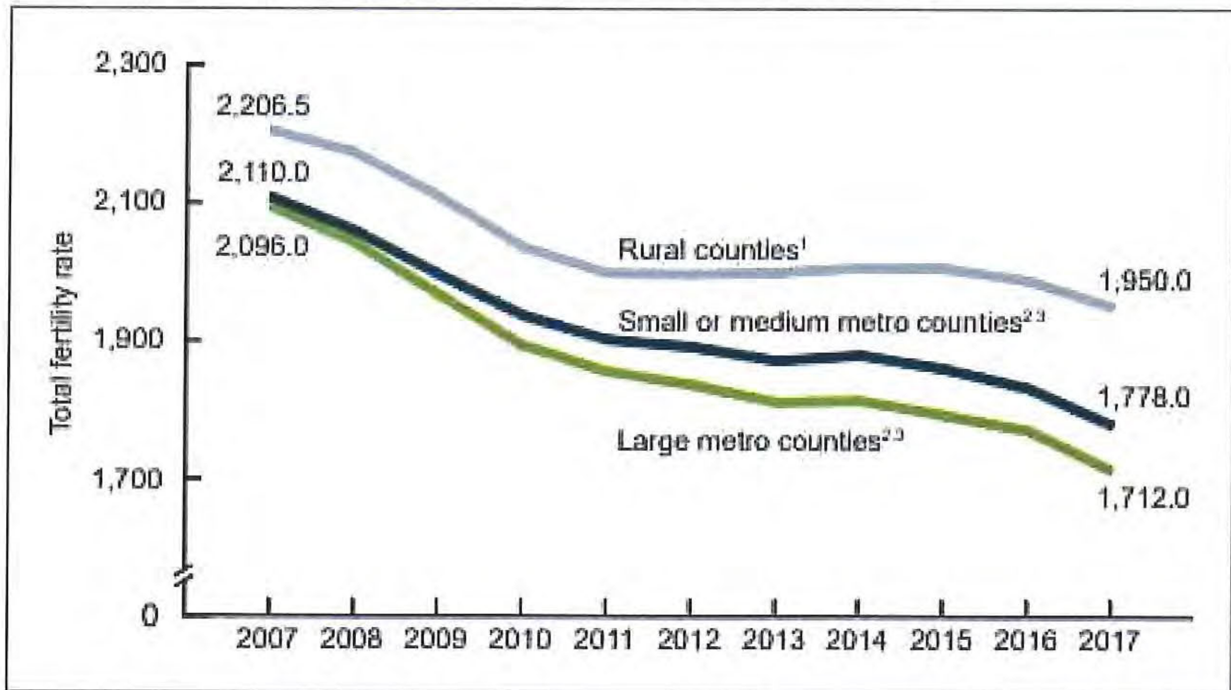
"I did my part," the father of three declared.

Ryan's remarks drew some eye rolls at the time, but as new data about the country's collapsing fertility rates has emerged, concern has deepened over what's causing the changes, whether it constitutes a crisis that will fundamentally change the demographic trajectory of the country – and what should be done about it.

Women are now having fewer babies and at older ages than in the past three decades, a change that the Centers for Disease Control and Prevention's National Center for Health Statistics (NCHS) reported this year, and which was **confirmed this week** with the release of **additional data** that shows that the trend holds across races and for urban and rural areas.

The **CDC said Wednesday** that the total **fertility rate** – a theoretical figure that estimates the **number of births a woman will have in her lifetime** – **fell by 18 percent from 2007 to 2017** in **large metropolitan areas**, **16 percent** in **smaller metro areas** and **12 percent** in **rural areas**. A **similar downward** trend **holds for white**, **black** and **Hispanic women**.

Figure 1. Total fertility rate, by urbanization level: United States, 2007–2017



[1]Significant decreasing trend for 2007–2011 ($p < 0.05$); stable trend for 2011–2017.
[2]Significant decreasing trend for 2007–2017 ($p < 0.05$).
[3]Significant difference in rate compared with rural counties for all years ($p < 0.05$).
NOTES: Total fertility rate is based on births per 1,000 women in a specified area. County designation is based on mother's county of residence. County classification is based on the 2006 and 2013 NCHS Urban–Rural Classification Scheme for Counties. Access data table for Figure 1 at: https://www.cdc.gov/nchs/data/databriefs/db323_table-508.pdf#1.
SOURCE: NCHS, National Vital Statistics System, 2007–2017.

From 2007 through 2017, total fertility rates declined for each urbanization level, but differences between rural and metro counties widened.

Fertility and birthrates are among the most closely monitored indicators of a country's economic health. When too high, a surging youth population might be unable to find work and become susceptible to unrest. When too low, economies can rapidly contract, and a small working-age population has to support a large retired population. The **United States** is **somewhat** more **buffered because of** its relatively **high** levels of **immigration**, **but if** the **decline** in **fertility continues**, demographers say, the **country may face** an **extreme population imbalance in** the **future**.

Theories – social, economic, scientific, environmental – about why fertility is falling so sharply in the United States abound. Many agree that cultural shifts, such as women getting married later and focusing on education or work, play a big role. But there's considerable debate, some of it more political than evidence-based, about other possible causes.

Economist Lyman Stone has blamed the United States' less-than-generous parental leave and pay policies. Human Life International, a missionary group, blames

"pro-abortion population control groups like Planned Parenthood." Tucker Carlson claims it has to do with immigration, arguing that immigrants drive wages down, which hurts the attractiveness of men as potential spouses – "thus reducing fertility."

Some have even wondered whether the decline might be influenced by sperm quality. Recent medical journal publications have indicated that exposure to pollutants might be harming reproductive health, including the motility and quantity of sperm, which could delay childbearing and overall fertility.

The University of Pennsylvania's Hans-Peter Kohler, who studies fertility and birthrates, said the data indicated that many shifts affecting fertility are occurring "in the transition to adulthood." The biggest recent drops in birthrate have been among teenagers as well as people in their 20s. In 2016, the teen birthrate hit at an all-time low after peaking in 1991.

"The declining total fertility rates are children not born in the moment, but the hope is that they are delayed, not forgone," Kohler said. "The exact details we won't know until the young adults who are currently delaying having children are in their 30s or 40s."

William h. frey, a demographer with the Brookings Institution, said that what struck him about the new report is the figures on **hispanic women**, who have **traditionally had high fertility rates** – from **2007 to 2017**, hispanic women experienced a **26 percent drop** in **fertility rates** in **rural** areas, a **29 percent drop** in **smaller metro** areas **and** a **30 percent decline** in **large metro** areas.

He said the fertility rates for hispanic women in urban areas are now below the "replacement rate" of **2.1 children per woman**, **which would keep** the **population stable**.

"They may be following the same pattern as the rest of the population," Frey said, an important finding that should figure into the debate over immigration.

John Rowe, a professor of health policy and aging at Columbia University Mailman School of Public Health, predicts that fertility rates will drop even lower in the coming years. He said he thinks the country should be ready to deal with the **impact** on **Social Security and** the **workforce** but that he does not believe there's reason to panic. He said that some other wealthy countries, such as Japan and Germany, are grappling with low fertility rates, and there's a lot to learn about how they have managed their smaller workforce to maintain high productivity.

"The **emphasis should not just be on** the **number of people but their productivity**. So we have to invest in education to enhance the productivity of younger individuals to compensate for reduction in numbers," Rowe said.

U.S. Stocks Rise, Fall and Repeat

by Stan Choe – Oregonian, Associated Press (AP) – Dec. 12, 2018

U.S. stocks careened between big gains and modest losses on Tuesday before indexes ended the day mixed, the latest dizzying run for a market that's been dominated by them In recent months.

A morning burst driven by hopes for U.S.-China talks gave way to losses triggered by falling bank stocks and President Donald Trump's threat of a federal government shutdown. The result of Tuesday's trip through the spin cycle, though, belies all the action. Indexes ended the day nearly where they began.

It's the **latest in** a **series** of **stock market turns in** the **direction of** the **market**, which has **lurched up and mostly down since late September** as investors recalibrate how worried they are about the global trade war, rising interest rates and expectations for a slowing economy.

The **whipsaw action** is a nerve-wracking **departure from much** of the **past decade**, when investors enjoyed a **largely calm, rising market**, and analysts are debating how big a turning point it is for the longest bull market on record.

"It's the last gasps of a bull market," said Rich Weiss, chief investment officer of multi-asset strategies at American Century Investments. Weiss has become more cautious about stocks as he's watched leadership shift from high-flying technology companies to makers of household products and other stocks that tend to do better in the **late stages of a bull market**.

Jan Adams, senior investment strategist at BMO Global Asset Management, is more optimistic that stocks can keep rising. But he says investors should get used to this **increase in volatility**, which **follows a calmer-than-usual run**.

'We **came from** a **very low-volatility, benign environment** in **2017**, and I think we're getting **to** a **more normal level of volatility** although a bit higher than historically," he said. "I think investors need to brace themselves for a higher level of volatility."

Behind that volatility is **many forces pushing and pulling** the **market in different directions**, and how optimistic or pessimistic investors are feeling about them on a given day. Several were on display Tuesday.

Early in the morning, the S&P 500 jumped as much as 1.4 percent after China's Commerce Ministry said that U.S. Treasury Secretary Steven Mnuchin and Chinese Vice Premier Liu He spoke by phone about "the promotion of the next economic and trade consultations."

Media reports also said that China agreed to reduce tariffs on U.S. autos. That raised hopes that the two countries can make progress on their trade dispute. Investors worry weaker global trade would dent economic growth around the world and corporate profits.

Indexes veered to losses in the afternoon, hurt by falling bank stocks. Financial stocks in the S&P 500 fell at least 1 percent for the fifth straight day, and the S&P 500 was down as much as 0.6 percent at one point.

Also weighing on the market was President Donald Trump's threat to shut down the government if Congress doesn't provide money to build a wall at the Mexican border.

Treasurys Advance as Politics Stir Fears

by Okane Otani – WSJ – Jun. 22, 2018

U.S. government bond prices rose Thursday as concerns about growing political risk around the world kept investors on edge.

The yield on the benchmark 10-year U.S. Treasury note settled at 2.899%, compared with 2.928% Wednesday.

Yields, which fall as bond prices rise, slipped overnight as reports that Italy tapped a euro-skeptic as head of its Senate Finance Committee and that auto maker Daimler warned its profit would take a hit from Chinese tariffs. Investors tend to buy Treasurys and other assets perceived as safe, like the Japanese yen, when they feel the outlook for growth looks shaky.

Worries that increasingly restrictive trade policies could cut into global economic growth have kept stocks and bond yields under pressure in recent weeks, bringing Treasury yields off their highs for the year.

The rally in long-dated debt has also compressed the yield curve, the spread between yields on two- and 10-year Treasurys, which hovered Thursday at 0.358 percentage point—around the smallest gap since August 2007. A flatter yield curve typically signals investors are less optimistic about long-term economic growth.

"I still think many market participants are turning a blind eye to what is currently going on in Europe," Mark Grant, chief global strategist and managing director at B. Riley FBR wrote in a note. "In my mind's eye, the neon sign is flashing."

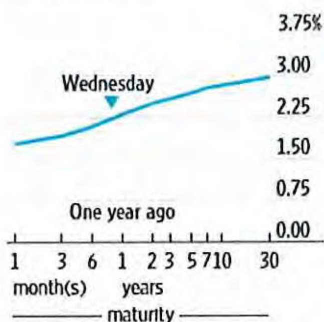
Treasurys Advance;
Auction Goes Well

by Danile Kruger – WSJ – Jun. 28, 2018

U.S. government-bond prices rose Wednesday **as investors focused on** the **risk** that **rifts between** the **largest global trading partners could widen**, **potentially slowing economic activity around** the **world**. The **yield** on the **benchmark 10-year Treasury note fell** to **2.827%,** the **lowest closing level since May 31**, from 2.882% Tuesday. **Yields fall as bond prices rise**.

Treasury yield curve

Yield to maturity of current bills, notes and bonds



Corporate Borrowing Rates and Yields

Bond total return index	Close	Yield (%) Last	Yield (%) Week ago	52-Week High	52-Week Low	Total Return (%) 52-wk	Total Return (%) 3-yr
Treasury, Ryan ALM	1444.173	**2.730**	2.818	2.945	1.818	**-1.211**	1.571
10-yr Treasury, Ryan ALM	1687.755	**2.827**	2.928	3.109	2.058	**-3.042**	0.951
DJ Corporate	369.654	**3.905**	3.955	3.995	2.879	**-1.552**	3.288
Aggregate, Barclays Capital	1914.380	**3.290**	3.340	3.430	2.380	**-0.733**	1.950
High Yield 100, Merrill Lynch	n.a.	**n.a.**	5.827	n.a.	n.a.	**n.a.**	n.a.
Fixed-Rate MBS, Barclays	1969.350	**3.450**	3.460	3.580	2.660	**-0.167**	1.645
Muni Master, Merrill	n.a.	**n.a.**	2.464	n.a.	n.a.	**n.a.**	n.a.
EMBI Global, J.P. Morgan	765.241	**6.716**	6.756	6.822	5.279	**-2.847**	4.270

Sources: J.P. Morgan; Ryan ALM; S&P Dow Jones Indices; Barclays Capital; Merrill Lynch

Yields fell even as the Trump administration appeared to back away from imposing restrictions on Chinese investment in the U.S. as investors and analysts said it was likely that the move was more likely to reflect tactics than a substantive policy change.

The Trump administration has decided that relying on existing laws updated by Congress and dropping consideration of alternative approaches that would have allowed the White House to impose stricter limits on its own "is the best approach to protect U.S. technology," a senior administration official said Wednesday.

The Treasury's auction of $36 billion of five-year notes Wednesday was met with strong demand, following Tuesday's sale of $34 billion of two-year notes which attracted investor demand in line with recent averages.

While investors and analysts have expressed concern with the rising size of U.S. government-bond sales needed to fund last year's $1.5 trillion tax cut, "it's difficult to look at that as supply indigestion," said Ian Lyngen, head of U.S. government bond strategy at BMO Capital Markets.

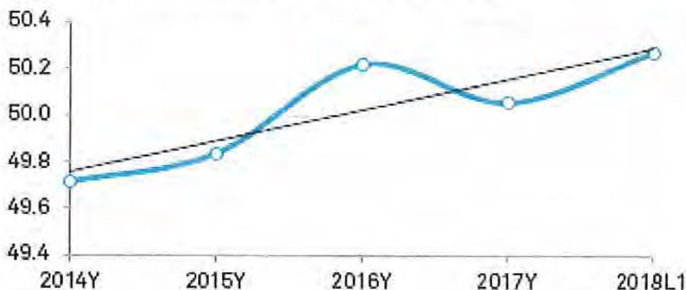
Average Utility Equity Ratio Rises Slightly, Possibly From Tax Reform Fallout

by Dennis Sperduto – Regulatory Research Associates (RRA)
An affiliate of S&P Global Market Intelligence – Jun. 26, 2018

Some provisions of the tax reform legislation that was enacted in December 2017 have relatively obvious financial implications for utilities. For instance, rate regulated utilities will, with very few exceptions, be required to lower customer rates to account for the reduced tax expense due to the **decline in** the **corporate tax rate to 21% from 35%**. In addition, the corporate tax rate reduction will require utilities to recalculate their deferred income tax balances at the new lower rate, which will lead to the companies having reduced deferred income tax balances.

One of the **not-so-apparent implications** of the tax reform legislation is that **utility credit metrics** will likely experience some **strain** due to the lower customer rates, revenues and cash flows resulting from the corporate tax rate reduction. Utilities can offset the pressure to their credit metrics in several ways. One approach is to reduce capital expenditures, which, while not increasing earnings or cash flow or rates, would conserve funds and counteract the strain on credit metrics. However, data contained in a RRA Financial Focus report that was published on April 20, Utility Capital Expenditures Update, indicates that a pullback in utility CapEx plans has not occurred.

Another approach is that **utilities can** petition regulators for an increase in their authorized equity returns as a **means of offsetting** the **negative credit ramifications** of the new tax law. In addition, the companies can **increase** the **equity components** of their **capital structures** which, when approved by regulators, would serve **to increase rates, earnings, and cash flow**.



As of March 31, 2018.
2018L1 = 12 months ended March 31, 2018
Source: S&P Global Market Intelligence

This article examines capital structure data contained in a June 20 Financial Focus Quality Measures report for 83 utility operating companies. The data indicates that the **average equity component** of capital increased slightly for this group of companies, **from 50.1% at year-end 2017 to 50.3% at the conclusion of 2018's first quarter**.

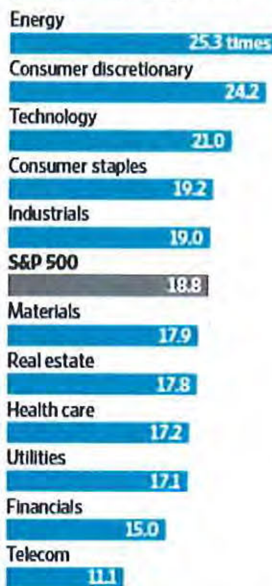
We note that the three months covered by the Quality Measures report that have elapsed since the new tax law became effective on Jan. 1, represent a short time frame in which to evaluate whether any significant trend has emerged. However, as the data indicates, a trend, albeit a slight one, may have commenced in the first quarter of 2018. We expect this nascent trend toward increased equity ratios to garner at least modest momentum in the remainder of 2018, given the anticipated pressure on utility credit metrics.

RRA also notes that two other metrics contained in the Quality Measures report, pretax interest coverage and fixed charge coverage, did not deteriorate because of tax reform. In fact, these measures slightly improved for the 12 months ended March 31 versus calendar 2017. Average pretax interest coverage for the 83 utility companies strengthened to 4.4x from 4.26x, while fixed charge coverage increased slightly to 3.28x from 3.25x. We note that limited customer rate reductions reflecting the lower corporate tax rate were actually implemented in the first quarter of 2018; these are occurring with greater frequency in second quarter and are expected to continue to do so in the third quarter of this year

Valuations Slip as Stocks near Records

by Michael Wursthorn – WSJ – Aug. 10, 2018

Stock-market valuations are **lower** now than they have been for a while, but that **doesn't mean shares** are **cheap**.

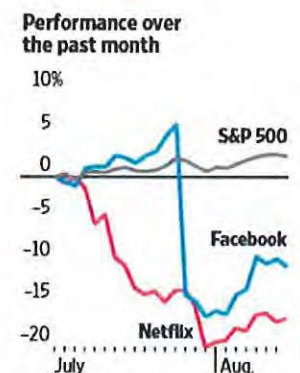


Despite another robust corporate earnings season, the S& P 500 has inched up less than 1.5% over the past three weeks as simmering trade tensions and signs of slowing growth at big technology companies sapped investor confidence.

Those issues have helped drive stock valuations down near their lowest levels of the year, even with the broad stock-market index hovering just 0.7% shy of its January high.

The **S&P 500 trades at 18.8 times earnings over** the **past 12 months**, a basement valuation that is lower than the market's February trough, when the index's valuation was around 19 times earnings, according to FactSet. At the S&P 500's peak in **January**, the index traded at nearly **22 times earnings**.

Strong corporate earnings are **making stocks look less pricey** than they did before. Companies in the S& P 500 have posted double-digit profit growth for the past three quarters to help earnings catch up with the S& P 500's 6.7% advance this year. For the latest quarter, **profits** are on track to register a **rise of 25% from** a **year earlier**, one of the fastest rates of earnings growth since 2010, according to FactSet.



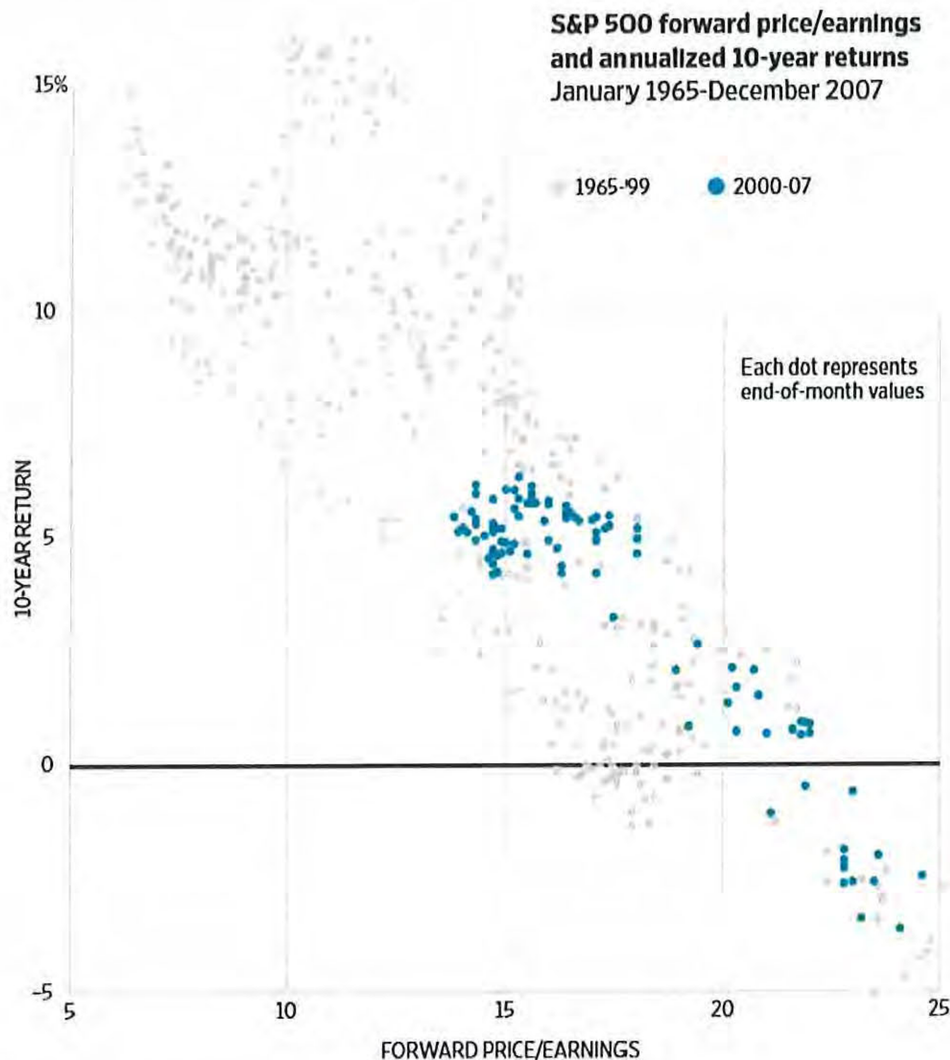
But **by other measures**, **stocks still** look **expensive**: The S& P 500 is currently trading in the 88th percentile of historical valuation, Goldman Sachs said in a recent report, while the median stock is at the 97th percentile.

Stock prices are steep, **in part**, because of the **surge** in shares of **technology companies**.

The popular corner of the market, which has been a big contributor to the run-up in major indexes over the past several years, continues to command big multiples that worry some investors.

"Valuations have gotten more extreme in the last three to five years," said Mike Balkin, a portfolio manager at William Blair. "The **FANG stocks** have looked **especially expensive**, **but if you didn't own them**, **your performance suffered**," he said, referring to the crowded trade of **Facebook** Inc., **Amazon**.com Inc., **Netflix** Inc. and **Google** parent **Alphabet** Inc.

Tech companies in the S& P 500 are trading at 21 times their earnings over the past 12 months, well above the broader index and most other sectors.



That is partly because investors have sought safety among shares of technology companies, which have contributed to much of the long-running rally, at any sign of trouble in the market this year.

But some analysts warn that higher-valuation stocks tend to struggle over the long term. An analysis of price/earnings ratios found that stocks with richer valuations led to weaker returns over a 10-year stretch, according to Credit Suisse Group AG.

Wall Street's infatuation with technology stocks briefly stalled last month after Facebook and Netflix reported financial results below investors' expectations. Those stocks have stumbled 11% and 17%, respectively, over the past month and trimmed valuations of S& P 500 tech companies slightly.

Investors are questioning whether those companies and others in the tech sector can continue their heady growth paths unabated. New regulations in Europe and the prospect for tougher oversight in the U.S. have dented performance. Facebook, for example, said its European user base took a hit after a tough new European privacy law went into effect in the second quarter.

"Investors are now asking how long can growth stocks really continue to outperform," said Matt Forester, chief investment officer at BNY Mellon's Lockwood

Advisors. "It's reasonable to question whether some of those expectations had been too high."

Some money managers are using the weakness among tech companies to urge clients to trim tech-heavy portfolios and put that money into the market's cheaper corners. Wells Fargo Investment Institute, for example, cut its view of tech stocks to "neutral" for the second half of the year and is favoring shares of financial companies.

Inflows into tech-focused funds have slowed this year, so much so that some funds, such as the iShares U.S. Technology exchange-traded fund has lost $350 million this year, according to FactSet.

Some investors have been **plowing** that **money into** other assets, such as **short-term government bonds**, whose yields have jumped to their widest margin against the S& P 500's dividend yield in years, while **others** have **opted for more-defensive** footing among equities, such as shares of financial firms, **utilities** and health-care companies, where valuations are more attractive.

The shifting landscape has led to a rare break in leadership for tech stocks. The health-care and the financial sectors of the S& P 500, corners of the market that had been out of favor, are outpacing the tech sector's 6% gain so far this quarter, while industrial stocks aren't far off.

Facebook's earnings spooked investors enough **to "begin shifting assets to** the more **value-oriented areas" of** the **market**, said Robert Pavlik, a senior portfolio manager at SlateStone Wealth, in a recent note to investors. "We believe this is just the beginning foray into these groups."

What Does the Trend Line Say About Stocks? Not Much.

by Mark Hulbert – WSJ – Dec. 9, 2018

Mr. Hulbert is the founder of the Hulbert Financial Digest and a senior columnist for MarketWatch

Forecasts depend a lot on what two points you choose to define the trend line.

When looking at stock-market trends, it always comes down to the period of history that you cherry-pick.

In the **world of stocks**, the **past** is a funny thing. It **doesn't** really **tell us much about** the **future**. Yet most investors, market professionals and amateurs alike operate as if it does.

If the pace of stocks' growth were predictable, as the widespread study of market trends and past performance assumes it to be, one might reasonably conclude that the S&P 500 today should be 95% higher than it currently is, based on a **trend line** that **begins** with the index's **1932 low** and is **drawn through** its **March 2000 high**. Such a line **suggests** that the **stock market** is **significantly undervalued**.

But one could just as easily draw a **trend line based on** the **high in 1929 and** the **low in 2009**, and that trend line is 58% lower than where the S&P stands today. For anyone drawing conclusions based on this second trend line, it's "**look out below**."

Of course, neither such outlook – rosy or doom-laden – seems particularly warranted by current market conditions. The truth is, though both trend lines are based on a common forecasting technique that extrapolates into the future the annualized return of the S&P 500's inflation-adjusted values between two points, in reality, any number of **different forecasts could be drawn depending** on **what two points** are used to **define** the **trend line**.

So what is an investor to do?

We need to give up the notion that history speaks with one voice about what the future has in store.

'Accidental and arbitrary'

To be sure, both of these trend lines were cherry-picked to maximize or minimize stocks' historical return. But we're fooling ourselves if we think that we can avoid being at least somewhat subjective when picking the start and end dates of whatever database is used to draw the lessons of history, according to **Edward McQuarrie**, a **professor emeritus** at the **Leavey School of Business** at **Santa Clara University** who has devoted himself to reconstructing U.S. stock-market history.

This is even true of the academic databases on which researchers rely, whose start dates are "accidental and arbitrary," says Prof. McQuarrie.

Consider the **stock-pricing database** that is perhaps the **most widely used** both **by academics and** by numerous **researchers on Wall Street**: the one **maintained by** the **Center for Research in Security Prices**, or **CRSP**, **at** the **University of Chicago**, which **dates back to 1926**. This database reflects **New York Stock Exchange**-**listed stocks back** to the **mid-1920s**; **American Stock Exchange** stocks **starting in 1962**; and **Nasdaq stocks from 1972 on**. The famous **Ibbotson yearbook** "**Stocks**, **Bonds**, **Bills, and Inflation**" **is based on this data set**. When the CRSP database was set up in the 1960s, its creators could have chosen an even earlier starting point. They had access to stock prices going back decades further, but "the sample felt big enough, and 1926 wasn't an obviously bad start date," so they simply stopped there, Prof. McQuarrie says.

One consequence of the **1926 start date**, however, is it **doesn't reflect** the **devastatingly poor performance** of **stocks during World War I.** The **stock market** on a price-only, inflation-adjusted basis **fell by almost as much in** the **1910s as** it **did in** the **1929 crash** and its aftermath. **Investors who focus on just** the **CRSP/Ibbotson database would never know** there was a **30-year period that suffered two separate declines each in excess of 75%.**

In fact, it wasn't until 1984 that the S&P 500 on an inflation-adjusted basis rose for good above the level at which its predecessor index stood in late 1909. Given today's low dividend yields, it has to be a **sobering thought** indeed that there **could be** a **75-year period** in which, **after inflation**, **all equity** investors would **have** to show **for** their **risk**-taking is the **dividends** they **received** along the way.

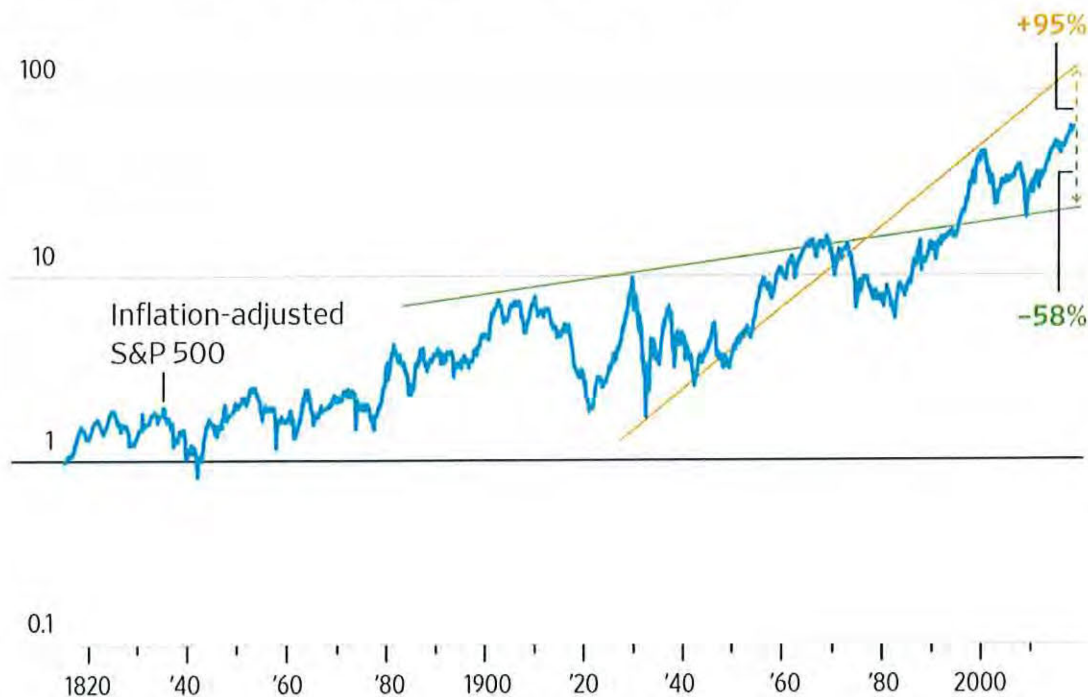
Reason for Hope?

To be sure, there are some who believe that, because today's dividend yields are so low, stock prices in coming years will rise at a faster pace than history would otherwise suggest. Perhaps the best-known proponent of this argument is **Jeremy Siegel,** a **finance professor** at the **University of Pennsylvania's Wharton School** and **author** of "**Stocks for** the **Long Run**." Prof. Siegel's **theory** is that **companies** will **invest in growth with** the **cash they** otherwise **don't pay out as dividends, leading to** a **faster pace** of **earnings growth**. Supporting his argument is the fast pace of the

S&P 500's price-only inflation-adjusted return over the past three decades of unusually low dividend yields.

Which Trend Is Your Friend?

The S&P 500 (and predecessor indexes) on an inflation-adjusted basis, along with two possible trend lines. Leveled to 1.0 on January 1815.



Source: Edward McQuarrie, Leavey School of Business at Santa Clara University (data)

There are many who question this narrative, however. Cliff Asness, managing and founding principal at AQR Capital Management, says in an email that research he conducted with Research Affiliates founder and chairman Robert Arnott found that companies' earnings growth rates are actually lower, on average, when their dividend yields are low. He adds that the S&P 500's rapid price-only appreciation over the past couple of decades hardly settles the matter, since his research found the contrary over nearly a century.

You don't have to take sides in this debate to see the monkey wrench this throws into efforts to extrapolate the past into the future. Notice that, once again we are forced into **having to decide which period of history** is **most relevant**.

You might think that the obvious solution to the challenge of arbitrariness is **to focus on** all **of U.S. stock-market history**. But that creates a different problem, **says Prof. McQuarrie**: As the period over which a trend line is drawn grows, it **tells less about an investor's actual experience over a typical investment horizon**.

To illustrate this point, consider the following thought experiment. Bear in mind that the **U.S. stock market dates back to 1791** and that its **inflation-adjusted total**

return over the subsequent **228 years** is **6.3% annualized**. Now **consider** what its annualized return since 1791 will be in 2048 **if** the **stock market over** the **next 30 years loses half its value**. Believe it or not, **it** will **have slipped only slightly** – **to** just **5.3%.**

In other words, **a 30-year loss of 50% causes** the **stock market's very long-term annualized return to barely budge**. Such is the tyranny that long-term annualized returns have over the investment horizons of the typical investor.

There is no easy answer. Prof. McQuarrie, however, says that because investors tend to extrapolate the immediate past into the indefinite future, one of the most helpful roles stock-market historians can play is to "cherry-pick historical periods with outcomes maximally discrepant from those which investors have recently experienced."

And right now that **means pointing out** that **the stock market in** the **past has endured 30-year periods in which** it **failed to even keep pace with inflation**.

World's Biggest Companies Hog Gains from Innovation

by Jason Douglas, Jon Sindreu and Georgi Kantchev – WSJ – Jul. 16, 2018

Benefits aren't trickling down, a **possible choke on productivity growth**.

As far back as the **industrial revolution, major innovations have traveled swiftly from company to company and industry to industry, an economy-boosting phenomenon called diffusion.**

Today, there is mounting evidence this engine of growth seems to be misfiring, a phenomenon some economists say helps explain the **slowdown in productivity growth** bedeviling developed economies.

Productivity, usually measured as **output per hour or per worker**, refers to the **efficiency** with which goods and services are produced in an economy. **Boosting productivity** – raising the amount of goods and services produced by each worker – is one of the most important long-term **drivers of rising living standards**.

Lately, economists have discovered an unsettling phenomenon: While **top companies** are **getting more productive**, gains are **stalling for everyone else**. And the **gap** between the two is **widening**, with globalization and new technology delivering outsize rewards to the titans of the global economy.

"Whatever **good stuff** is happening **at** the **high end** is **not diffusing down to** the **tail**," says Andrew Haldane, chief economist at the Bank of England.

Productivity ills can ultimately hurt living standards, and any gap between top companies and the rest can exacerbate income and wealth disparities.

Innovation Seen at Big Companies

So what is going wrong with the spread of innovation?

In the tiny town of Gullringen, Sweden, one of the world's largest construction firms, **Skanska** AB, has a partnership with furniture behemoth **IKEA** that has brought innovative ideas to the construction of affordable houses. The venture, called BoKlok, relies heavily on **robot**s to build ready-made rooms inside a **factory**. Later, on construction sites throughout Northern Europe, the rooms are put together like Lego houses.

Skanska says the process **cut in half**, to nine months, the **time** it takes **to erect and furnish** a **four-story apartment building** – right down to the clothes hangers in the wardrobes—and **reduced costs by 35%**. The **Gullringen facility churns out 1,200 affordable houses a year** and is **poised to increase capacity by 50%.**

The project shows how **big firms can exploit economies of scale** offered by **new technology** and **global markets**. Companies with more orders can **better shoulder upfront investments because each new unit produced** will be **less expensive**.

"Now we are aiming at increasing our level of automation significantly, when we really know the demand from the market and have the volumes to pay for it," says

Jerker Lessing, BoKlok's director of research and development. "We benefit from Skanska being a global company."

Factory Shutdown

Three hours away, in the town of Hallstahammar, a smaller Swedish construction firm focused on the domestic market also tried to industrialize production a few years ago. The company, NCC AB, couldn't make it work, and the factory was shut down.

"It is difficult to have housing factories or other solutions with high fixed ongoing costs when the market fluctuates as it does in Sweden," says Madeleine Nobs, business-development manager. NCC says it now focuses on standardized design processes that optimize costs without the need for a factory.

Since the **2008 financial crisis, U.S. productivity** has **grown** by about **1.2% a year**. That is **half** the rate it clocked in the **1970s** and around **one-third** of what it was in the **decades after World War II**, once adjusted to strip out the temporary effects of economic booms and busts. **Japan and Europe** – **especially** the **U.K. and Italy** – have fared even **worse**.

Researchers have blamed the productivity slowdown on a range of factors including ultralow interest rates, mismeasurement of output in a digital world and a decline in humanity's innovative prowess. Most theories don't seem to explain the whole puzzle.

Researchers now are **zeroing in on diffusion**. According to data on advanced economies from the Organization for Economic Cooperation and Development, the **most productive 5%** of **manufacturers increased** their **productivity by 33% between 2001 and 2013**, while **productivity leaders in services** boosted theirs **by 44%.**

Over that period, **all other manufacturers** managed to improve productivity by **only 7%**, while **other service providers** recorded **only** a **5% increase**.

"The laggards are increasingly falling behind," says Dan Andrews, the economist who led the OECD's research.

The bifurcation of the global economy has pocketbook consequences for workers. The National Bureau of Economic Research found that nearly all of the increase in wage inequality in the U.S. since 1978 stems from pay disparity between workers at different companies. Pay gaps within companies remained mostly unchanged.

The productivity disparity dates back to before the financial crisis. The McKinsey Global Institute, the research arm of a U.S. consulting company, found that one-quarter of U.S. productivity growth between 1995 and 2000 was driven by retailers, with almost one-sixth of that by a single company, Walmart Inc. Smaller rivals were left in its wake, if they survived at all.

Online Competition

These days, retailers are under **threat from** online competitors such as **Amazon**.com Inc., **spurring** a new **productivity race at** the **top**. In May, Kroger Co., the largest U.S. grocery chain, increased its stake in tech-heavy British grocer Ocado Group PLC. **Within three years**, **Kroger** will be able to use Ocado's **robots to run 20 automated warehouses**, the company said.

Data show the most productive companies are usually the biggest. Globalization allowed them to grow bigger, while giving some specialized niche firms a big enough market to succeed.

For digital titans such as Amazon, Google parent Alphabet Inc. and Facebook Inc., the benefits of scale are substantial. Not only are their customers not limited by geography, but whenever more sellers sign up in Amazon's platform or more users join Facebook's social network, the service they offer gets more valuable for everyone else.

Another advantage: Researchers have found that bigger firms are better at protecting their technological advantages by patenting them. Only **25 companies accounted for half of all tech-related patents** filed with the **European Patents Office between 2011 and 2016**, official data show.

Scale makes it possible to experiment with advanced technology that is out of reach for many companies. A separate McKinsey Global Institute report, published in April, found early adopters of artificial intelligence may already have gained "an insurmountable advantage" in earnings over competitors who have yet to take the plunge.

Gains at the top have been the key driver of productivity since the days of the industrial revolution, and the whole economy benefited. What is different now?

Some economists say it could be that good managers have flocked to top firms – enticed by the larger pay offered by multinationals – and the laggards need to catch up. According to the World Management Survey, smaller firms are consistently worse run and are responsible for most differences in management across countries.

There is a "**lack of self-awareness among lots of firms**," says John **Van Reenen**, **professor** of **economics** at the Massachusetts Institute of Technology. "**Some think they are awesome**. **But** they are **actually doing pretty badly**."

Some public and private efforts to reverse this are taking place in **Britain**, where **productivity** has become a political hot potato after a decade of poor growth. **Output per hour worked** there is **23% and 26% lower than in** the **U.S. and Germany**, **respectively**.

At the U.K.'s Manufacturing Technology Centre in Coventry, England, Dean Baker leads a group of experienced former engineers who offer tips to small and midsize firms on how to improve their manufacturing processes. They also try to demystify the latest technology, such as 3-D printing, robotics and machine learning, which can appear daunting. They argue that the cost of using such innovations is falling.

"It's to show that these things can be used by everyday companies," says Mr. Baker.

A big chunk of productivity growth comes from automation, but some economists warn it is a double-edged sword. While some companies become more productive by substituting machines for laborers, there is no guarantee that the displaced workers will find a job that is equally productive.

"In the standard economy model, when one industry declines, all the workers and machines can be redeployed to more productive activities," says University of Cambridge professor Ha-Joon Chang. "But in reality, it doesn't work like that."

Employment Shift

Globalization made it easier to automate sectors that produce goods and services that can be traded around the world, but this means those sectors now employ far fewer people than they did 40 years ago. Recent research finds that the result may be a shift in employment toward lower-productivity jobs such as delivering fast food by bike or cleaning offices – much harder tasks to automate.

Paul Pritchard is a manager of Abacus Consultancy, an accounting firm that employs six people in London. He is passionate about the latest technology and has set up a platform that allows his clients to manage their finances remotely.

His competition is auditing giant **PricewaterhouseCoopers** LLP, which recently developed a **software tool** that **can scour thousands of pages of legal contracts in minutes**. It allows one client media company to review contracts related to media rights **30 times faster than** doing it **manually**, and **at one-eighth** of **the cost**, **says PwC's** forensic technology partner Craig McKeown.

By developing the **technology itself**, **PwC reaps all** the **productivity gains**. Abacus Consulting has access to a similar tool, but it has to pay another software company to use it, reducing its productivity gain.

Building the software "wouldn't be viable for a small business like mine, as the costs would be too high for development and we wouldn't be able to offer the same security as larger providers can," says Mr. Pritchard.

Jürgen Maier, chief executive of the U.K. arm of Siemens AG, says reviving diffusion is in the interests of the biggest, most productive companies, because many laggards are their suppliers. "If we get our supply chains more productive, more agile, delivering in time, that's good for everybody in the ecosystem," Mr. Maier says.

Don't Worry about the End of QE, Worry about Rates

by James Mackintosh – WSJ – Aug. 6, 2018

The Fed is putting quantitative easing into reverse, but investors should focus instead on interest rates

The Federal Reserve aims to cut its holdings of bonds by $40 billion a month, rising to $50 billion by the end of the year.

More money is good, less money is bad. That's the basic principle of an increasingly popular case for being bearish: The Federal Reserve is putting quantitative easing into reverse, removing trillions of dollars it printed to support the economy.

The case does not stand up to close scrutiny, however. There are good reasons to worry about tighter monetary policy, but the **focus** should be **on** the **price of money** – **interest rates** – **not** the **amount of money**.

The bear case runs like this. The **Fed** has **bought more than $3.5 trillion of Treasurys and mortgage-backed bonds since 2009**. The flood of liquidity overflowed from the bond market to boost the price of stocks, property, commodities and even art. Now that the Fed is selling what it bought, that tide runs back out. The effects are already showing up in the riskiest places, notably emerging markets.

The theory typically gets wrong **how money enters the economy**, by confusing central-bank money – deposits at the Fed, held as reserves in the banking system – with the ordinary money we use every day, which is actually a credit on a commercial bank. The only way ordinary investors and most other non-banks can hold Fed money directly is in **physical dollar bills**, and the **Fed hasn't been printing any more of them than usual**.

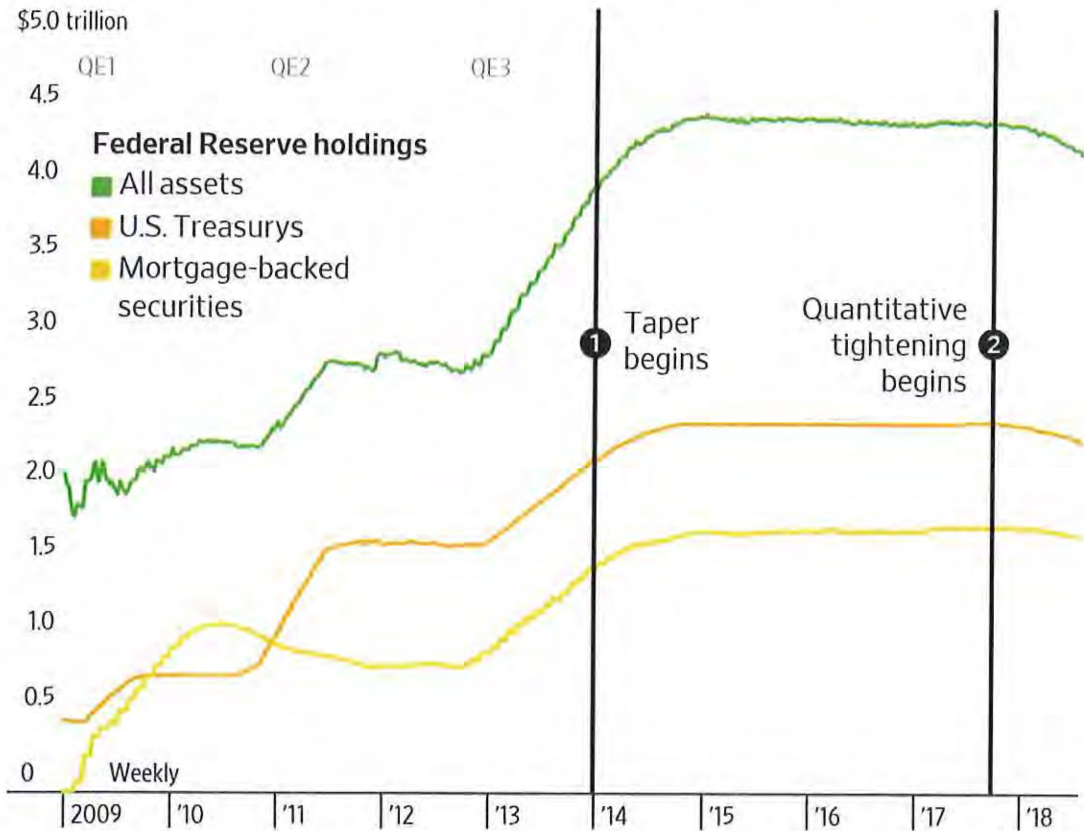
The **Fed**'s **bond-buying program did boost** the **amount of ordinary dollars available**: When the Fed pays a non-bank investor for a bond, it does so by crediting his or her bank with more reserves; the bank in turn credits the investor with more ordinary money in the form of a bigger account balance. There's no money creation, though, if banks sell their own holdings of Treasurys to the Fed, or if investors use the proceeds to pay down existing debt.

Those offsets matter – the Bank of England estimated that about 40% of the effect of its quantitative easing, or QE, was canceled out through such "leakage." What about the rest of it?

Central bankers focus on what they call "**portfolio rebalancing**": investors who would have owned Treasurys being pushed into riskier assets instead, such as equities and corporate bonds. Critically, the reason investors take more risk in their portfolio is because the Fed's buying makes bond yields go down compared with where they would have been, prompting the hunt for yield so familiar to anyone watching the markets. It is thus about price, not about how much money investors have in their bank accounts.

A Quantity of Tightening

The Federal Reserve has begun to shrink its balance sheet, but slowly and from a high level.

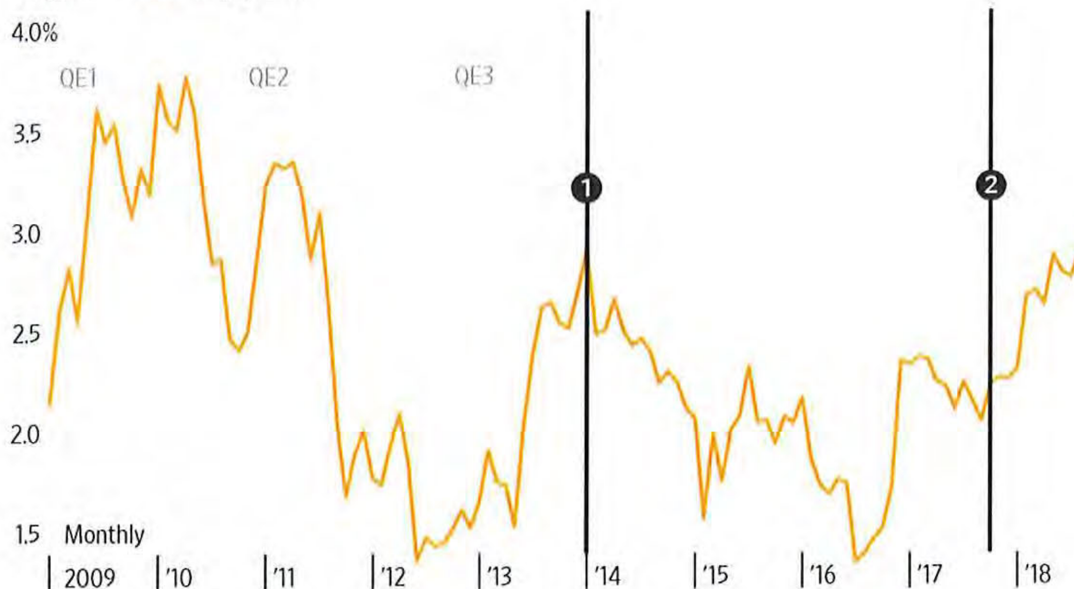


So could the turnaround in QE change prices? The Fed aims to cut its holdings of bonds by $40 billion a month, rising to $50 billion by the end of the year. If that makes bond yields rise, investors who had abandoned Treasurys might be tempted back, reducing demand for riskier assets and so their prices. At the end of the chain are emerging markets, the riskiest assets that saw the biggest inflows during the bull market, and it is reasonable to expect them to suffer most from such a rise in yields.

That's the theory. In reality, Treasury yields are tightly linked to expectations about the economy, inflation and future interest rates – -not anyone's buying and selling. Over each of the three QE periods 10-year Treasury yields rose, the opposite of what would be expected, because investors grew more confident about growth, and after each ended yields fell back. If the Fed was responsible, the general sense that it is doing something, and the signal that sends, seems to be more important than what it actually does.

One way to measure the pure supply-and-demand effect of Fed bond buying is through the **term premium**, the extra reward for holding long-dated Treasurys above the expected path of interest rates. Fed buying should depress this premium, although

once again it did not behave as expected during QE periods, and has fallen sharply since the Fed began to taper bond purchases in 2014. According to a New York Fed estimate of the term premium, it is at about the same level it was in October, suggesting that **quantitative tightening – QT** – has had no effect, at least so far.



Sources: Federal Reserve Bank of St. Louis (balance sheet); Thomson Reuters (Treasurys)

The **Fed is running down its balance** sheet **slowly** and deliberately. But even if QT pushed up the term premium a lot, bond yields are moved around just as much by changing views of the economy and interest rates.

Even more confusing for investors is that the **relationship between bond yields and stocks is not fixed**. Since the late 1990s stocks have tended to go up on days when bond yields rose, and vice versa, most likely because both were pushed around by changing economic sentiment. But for two decades before that the relationship had been the other way around, probably because investors were more focused on inflation.

QT might start to have an effect on bond yields, and it might not be drowned out by broader economic shifts, and it might then hurt stocks. But anyone really worried about this should **just watch** the **bond yield and** the **term premium**, rather than getting too concerned about the size of the Fed's balance sheet.

Money Supply

The narrow M1 measure of the money supply has decelerated sharply this year as the Fed shrank its balance sheet, but a broader measure appears unaffected.

Change from previous year in M1 and M2 money stock

Notes: Monthly average; Seasonally-adjusted data

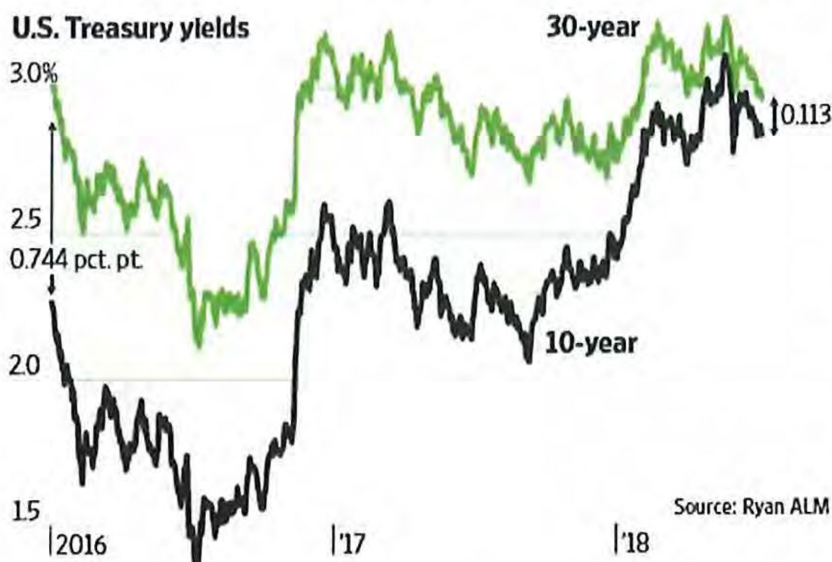
Source: Federal Reserve Bank of St. Louis

Yield Curve Squeezed From Both Sides

by Daniel Kruger – WSJ – Jul. 6, 2018

Yield Curve Feels a Squeeze

The yield on the 30-year bond has been falling recently, in part as companies buy long-dated debt to shore up pension funds. B1, B12



Fed rate rises push up short-term yields as tariff fight is weighing on long-term ones. The gap between yields on short- and longer-term Treasurys has narrowed to nearly 11-year lows, a sign investors remain cautious about the outlook for economic growth even as they expect the Federal Reserve to continue raising interest rates. The difference between the yields on two- and 10-year U.S. government notes on Thursday settled at 0.279, its narrowest since August 2007, according to data from Ryan ALM. Two-year yields typically climb along with investor expectations for tighter Fed interest-rate policy, while longer-term yields are more responsive to sentiment about the outlook for growth and inflation.

The **dispersion between shorter-term and longer-term rates**, **known as the yield curve**, is a crucial indicator of sentiment about the prospects for economic growth. **Investors monitor the curve closely because** short-term rates have exceeded longer-term ones **before each recession since at least 1975** – a phenomenon known as an **inverted yield curve**.

The flattening has occurred as U.S. economic growth remains steady and few analysts see signs of an imminent slowdown. That leaves many split on what the signal shows now.

Investors will be watching Friday's June jobs report from the Labor Department for signs a tight labor market is producing wage inflation, which could push long-term yields higher and steepen the curve. Low wage growth, in contrast, could drag longer-term yields down, flattening the curve further. Inflation poses a threat to the value of government debt, especially longer-dated bonds, because it erodes the purchasing power of their fixed payments.

For now, many analysts remain sanguine about the recent curve flattening. Two-year yields have climbed as policy makers have raised rates to normalize monetary policy following extraordinary stimulus undertaken in the wake of the financial crisis.

They have signaled the possibility of two more rate increases this year. That has kept upward pressure on short-term rates as the Treasury also is selling more short-term debt to fund tax cuts and government spending.

At the same time, the 10year yield has retreated from a nearly seven-year high reached in May, weighed down by trade-war fears. The concern is that trade tensions will disrupt global growth, tempering expectations for an economic surge spurred by recent tax cuts. Investors also have bought Treasurys, a haven asset as tariff fears have rattled markets around the world.

Some observers contend those circumstances negate the traditional signal sent by a flattening yield curve. **Following five of the past six periods in which** the **yield curve inverted**, the **economy tipped into recession within a year,** according to data from the St. Louis Fed. "It's a red flag, and you need to be cognizant of what's driving it," said Sean Simko, head of global fixed-income management at SEI Investments. Mr. Simko said his firm has placed trades that benefit from a flatter curve, and he expects it to invert by year end.

The 10-year yield reached 3.109% in May, propelled from 2.409% at the end of 2017 by a burst of investor optimism that tax cuts would lead to an acceleration of growth, wages and inflation. With trade tensions dimming those prospects, the 10-year yield probably has peaked for the year, Mr. Simko said.

One reason the curve has flattened is that long-term yields have been held down because **capital spending hasn't picked up** the **way some forecasters expected after** the **2017 tax cuts**, said Krishna Memani, chief investment officer at Oppenheimer Funds Inc.

"A couple more Fed tightenings and we're pretty much there" at a flat yield curve, Mr. Memani said.

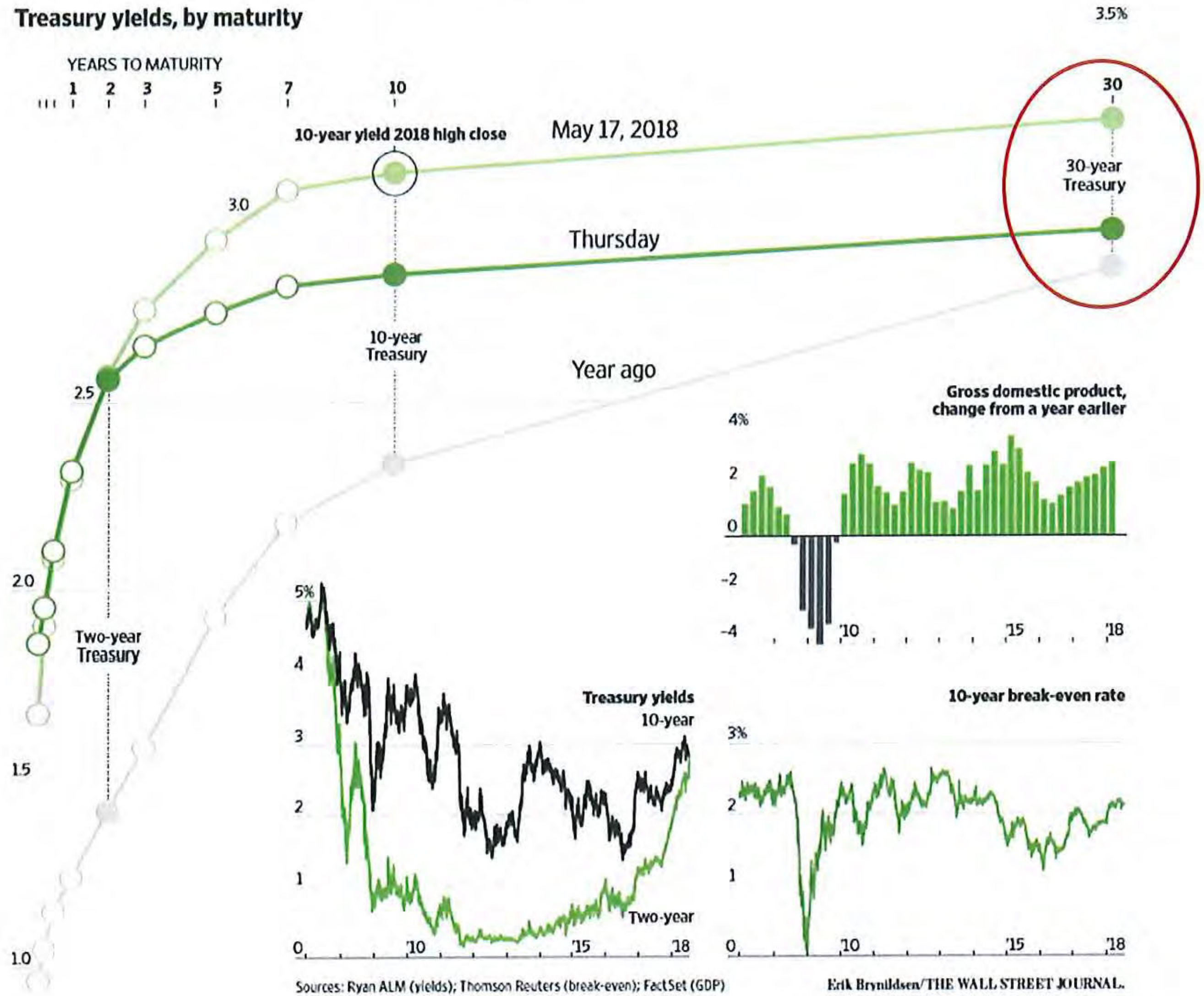
Signs of inflation persist, however: The personal-consumption expenditures price index, the Fed's preferred inflation yardstick, rose 2.3% in May from a year earlier, its biggest annual rise since March 2012, the Commerce Department said last week. That beats the Fed's 2% target.

Few observers see a recession on the horizon. The economic expansion likely will end in 2020 as Fed interest-rate increases cool off an overheating economy, according to forecasters surveyed by The Wall Street Journal. The survey was completed in May, before the Trump administration stepped up its tariff campaign.

Yet recent escalations in trade tensions have spurred increased volatility in financial markets, making some investors more anxious.

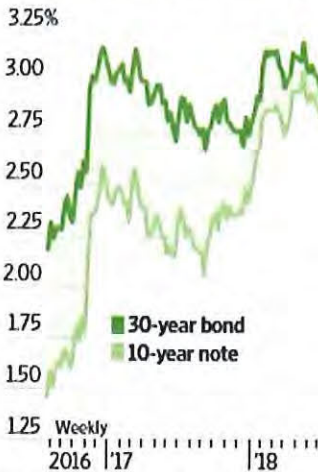
Doug Peebles, chief investment officer at Alliance Bernstein Fixed Income, said that has made risky assets including stocks and emerging-market bonds less attractive, and he is recommending investors reallocate more funds to the safer assets such as Treasurys.

Rather than serving as a gauge of future economic performance, the yield curve is "probably the most important tool we have in explaining the backdrop for risk-taking" in financial markets, he said.



Yields Feel Demographics' Pull

by Daniel Kruger – WSJ – Jul. 26, 2018



Aging population's demand for haven long-term Treasurys holds down those rates.

Treasury-market watchers believe shifting **demographics** are a key factor set to **keep long-term yields low**, **counteracting other forces that recently pushed the 10-year yield near 3%**, such as a **strengthening economy** and **increased government-debt sales**.

BNP Paribas bond analyst Timothy High contends the **aging population** is the **biggest factor** influencing whether investors buy 30-year Treasury bonds. **Pension plans**, which have seen their equity holdings rise in value as the bull market in stocks runs into its ninth year, will want to lock in their gains in super-safe long-term Treasurys, Mr. High said.

Demand for long-term debt is expected to be so persistent and strong that BNP Paribas is forecasting the yield on 30-year Treasurys will fall as much as 0.2 percentage point their **10-year** counterpart by year-end. (At a yield of 3.065%, **30-year bonds currently yield about 0.13 percentage point more**.) Stuart Sparks, a bond analyst at Deutsche Bank, agrees with the strong-demand premise, but questions the shelf-life of pension funds' appetite. He argues that a **temporary tax benefit** that was **included in December's tax cuts** – which **expires on Sept. 15** – explains why demand for the debt has been so strong.

That benefit is an **opportunity for companies with underfunded pension plans** to catch up on their obligations, analysts say. Firms that contribute through mid-September of this year can receive **deductions based on** the **old 35% corporate-tax rate, rather than** the **new 21% rate**. A **company** that **contributes $1 million to** an **underfunded pension plan** could have **$350,000 in tax savings** before the dead-below line, **but** would have savings of **just $210,000 after September**.

Some companies, such as Verizon Communications, have been increasing the pace of their bond buying, moving forward purchases now that would ordinarily have taken place later in the year, after the tax deadline, Mr. Sparks said. While **demographics** play an **important** role in shaping the absolute amount of demand, the **Sept. 15 deadline** has **accelerated purchases** rather than adding to them, and demand should decline noticeably later in the year.

Deutsche Bank is **forecasting 10- and 30-year yields will converge heading toward** the **tax milestone, but diverge afterward** as demand for the longest-term debt eases.

While it **remains to be seen** what happens with pension contributions, companies will continue to lock in gains from stocks, rotating into more stable sources of income such as government debt, said Tom Kennedy, head of fixed-income strategy at J.**P. Morgan** Private Bank. He **expects** solid **demand** for **long-term bonds to continue past** the **tax deadline**.

CERTIFICATE OF SERVICE

UG 347

I certify that I have, this day, served the foregoing document upon all parties of record in this proceeding by delivering a copy in person or by mailing a copy properly addressed with first class postage prepaid, or by electronic mail pursuant to OAR 860-001-0180, to the following parties or attorneys of parties.

Dated this 30th day of January, 2019 at Salem, Oregon

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