

BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,

Complainant,

v.

PUGET SOUND PILOTS,

Respondent.

DOCKET TP-190976

**EXHIBIT TO
TESTIMONY OF
John C. Ramirez, ASA
ON BEHALF OF
PACIFIC MERCHANT SHIPPING ASSOCIATION**

John C. Ramirez Rate of Return Analysis

May 27, 2020

Revised July 8, 2020

SCHEDULE A
PUGET SOUND PILOTS ASSOCIATION
DEFINITIONS
AS OF DECEMBER 31, 2018

BLS	=	Bureau of Labor Statistics
CAGR	=	Compound annual growth rate
EBIT	=	Earnings before interest and taxes
EBITDA	=	Earnings before interest, taxes, depreciation, and amortization
ERI	=	Economic Research Institute
FIFO	=	First-in, first-out
FYE	=	Fiscal year ended
IBD	=	Interest-bearing debt
LFYE	=	Latest fiscal year-end
LTD	=	Long-term debt
LTM	=	Latest 12 months
MVE	=	Market value of equity
MVIC	=	Market value of invested capital
NA	=	Not available
NAICS	=	North American Industry Classification System
NM	=	Not meaningful
PSP	=	Puget Sound Pilots Association
SEC	=	Securities and Exchange Commission
SIC	=	Standard Industrial Classification
TBVIC	=	Tangible book value of invested capital
WACC	=	Weighted average cost of capital

Invested Capital = Total equity (common and preferred) + total interest-bearing debt

Value of Invested Capital = LTD + short-term interest-bearing debt + market value of preferred equity + market value of common equity

Tangible Book Value of Invested Capital = LTD + short-term interest-bearing debt + book value of stockholders' equity – recorded intangible assets (including goodwill)

Puget Sound Pilots Association

**SCHEDULE B
PUGET SOUND PILOTS ASSOCIATION
RATE OF RETURN ANALYSIS
AS OF DECEMBER 31, 2018
SUMMARY AND CONCLUSION**

Fair and Reasonable Rates of Return - SIC Code 44 Water Transportation Industry [a]

Rate of Return Method:	Rates of Return
Modified Capital Asset Pricing Model (ex post equity risk premium) - Return on Equity [b]	14%
Modified Capital Asset Pricing Model (supply side equity risk premium) - Return on Equity [b]	13%
Build-Up Model - Return on Equity [b]	15%
Comparable Earnings Method - Select Publicly Traded Companies - Return on Equity [c]	4% to 19%
Comparable Earnings Method - Select Publicly Traded Companies - Return on Total Invested Capital [c]	6% to 35%
Comparable Sales Method - Merged and Acquired Companies - Return on Total Invested Capital [d]	6% to 31%

Puget Sound Pilots Rates of Return

Rate of Return on Equity

Normalized Net Income [e]	12,243
Divided by: Value of Equity [f]	19,856
Equals: Rate of Return of Equity	62%

Rate of Return on Total Invested Capital

Normalized EBITDA [e]	12,237
Divided by: Value of Invested Capital [f]	20,063
Equals: Rate of Return of Total Invested Capital	61%

**Analysis Conclusion:
The PSP Rates of Return Exceed Fair and Reasonable Rates of Return**

Definitions are presented in Schedule A.

[a] Based on an analysis of alternative investments with similar risks to an ownership investment in the PSP. A "fair and reasonable" rate of return is generally defined as a rate that is sufficient to recover operating expenses and invested capital, attract new investment capital, and provide a return comparable to other investments with similar risk.

[b] As presented in Exhibit 9.

[c] As presented in Exhibit 12.

[d] As presented in Exhibit 16.

[e] As presented in Exhibit 4.

[f] As presented in Exhibit 7.

Sources: As indicated above and Willamette Management Associates calculations.

**SCHEDULE C
PUGET SOUND PILOTS ASSOCIATION
SUPPLEMENTAL ANALYSIS
RATE OF RETURN ON EQUITY
BASED ON ESTIMATED REVENUE REQUIREMENT**

Traditional/General Revenue Requirement Formula [a]

Revenue Requirement = Operating Expenses + Capital Cost Recovery + Return on Rate Base

Where:

Capital Cost Recovery = Depreciation Expense

Return on Rate Base = Required Return on Debt Capital + Required Return on Equity Capital

Required Return on Debt Capital = Value of Debt Capital x Cost of Deb Capital

Required Return on Equity Capital = Value of Equity Capital x Market-derived Cost of Equity Capital

PSP Revenue Requirement

Estimated Labor Expense [b]	Operating Expenses [c]	Depreciation Expense [d]	Required Return on Debt	Required Return on Equity	Revenue Requirement
8,241	13,507	162	7	2,780	24,696

Value of Debt Capital [b]	Cost of Debt Capital [c]	Required Return on Debt Capital
207	3%	7

Value of Equity Capital [f]	Cost of Equity Capital [e]	Required Return on Equity Capital
19,856	14%	2,780

PSP Total Rate of Return on Equity

Actual Revenue - 2018 [c]	33,997
Less: Revenue Requirement	24,696
Equals: Excess Profit	9,301
Plus: Required Return on Equity	2,780
Equals: Total Return on Equity	12,081
Divided by: Value of Equity	19,856
Equals: PSP Total Rate of Return on Equity	61%

Definitions are presented in Schedule A.

[a] Revenue requirement is the amount of revenue a company must collect in order to cover its costs and make a reasonable profit.

[b] As presented in Exhibit 4.

[c] As presented in Exhibit 2.

[d] As presented in Exhibit 3.

[e] As presented in Exhibit 9.

[f] As presented in Exhibit 8.

Sources: As indicated above and Willamette Management Associates calculations.

EXHIBIT 1
PUGET SOUND PILOTS ASSOCIATION
HISTORICAL AND COMMON SIZE BALANCE SHEETS

	As of December 31,					CAGR 2014-2018 %	As of December 31,					Median 2014-2018 %
	2018 \$000	2017 \$000	2016 \$000	2015 \$000	2014 \$000		2018 %	2017 %	2016 %	2015 %	2014 %	
ASSETS												
Current Assets:												
Cash	1,495	1,675	1,742	1,858	2,194	(9.1)	29.0	30.9	29.6	28.9	36.4	29.6
Trade Accounts Receivable	2,542	2,471	2,421	2,665	1,897	7.6	49.4	45.5	41.2	41.4	31.4	41.4
Prepaid Expenses	76	81	113	96	100	(6.8)	1.5	1.5	1.9	1.5	1.7	1.5
Total Current Assets	4,113	4,227	4,276	4,620	4,191	(0.5)	79.9	77.9	72.8	71.8	69.4	72.8
Property, Boats and Equipment:												
Port Angeles Station Building	2,105	2,105	2,105	2,095	2,095	0.1	40.9	38.8	35.8	32.6	34.7	35.8
Port Angeles Station Furnishing and Equipment	154	154	154	154	154	-	3.0	2.8	2.6	2.4	2.5	2.6
Boat "Juan de Fuca"	3,229	3,229	3,229	3,229	3,229	-	62.7	59.5	54.9	50.2	53.5	54.9
Boat "Puget Sound"	3,718	3,718	3,718	3,718	3,718	-	72.2	68.5	63.3	57.8	61.6	63.3
Seattle Office Furnishings and Equipment	858	1,756	1,756	1,548	1,208	(8.2)	16.6	32.4	29.9	24.1	20.0	24.1
Portable Pilot Units	-	1,142	1,142	1,142	1,142	NM	-	21.0	19.4	17.7	18.9	18.9
Portable Radio Equipment	96	96	96	96	96	-	1.9	1.8	1.6	1.5	1.6	1.6
Total Building, Boats and Equipment	10,159	12,199	12,199	11,982	11,642	(3.3)	197.2	224.8	207.5	186.3	192.9	197.2
Accumulated Depreciation	(9,122)	(11,000)	(10,599)	(10,173)	(9,801)	(1.8)	(177.1)	(202.7)	(180.3)	(158.2)	(162.4)	(177.1)
Net Fixed Assets	1,037	1,199	1,600	1,809	1,841	(13.4)	20.1	22.1	27.2	28.1	30.5	27.2
Other Assets:												
Net Loan Fees	0	1	2	3	4	(40.0)	0.0	0.0	0.0	0.1	0.1	0.0
Total Other Assets	0	1	2	3	4	(40.0)	0.0	0.0	0.0	0.1	0.1	0.0
TOTAL ASSETS	5,150	5,426	5,878	6,432	6,036	(3.9)	100.0	100.0	100.0	100.0	100.0	100.0
LIABILITIES & EQUITY												
Liabilities:												
Current Liabilities:												
Funds Held in Trust												
Pilotage Commission Trust-Trainee Surcharge	134	52	65	101	92	9.9	2.6	1.0	1.1	1.6	1.5	1.5
Pilotage Commission Self-Insurance Premium	16	18	-	-	-	NM	0.3	0.3	-	-	-	-
Grays Harbor Pensions Payable	-	8	9	9	9	NM	-	0.1	0.2	0.1	0.2	0.1
Miscellaneous	-	-	0	-	0	NM	-	-	0.0	-	0.0	-
Total Funds Held in Trust	151	78	74	110	102	10.3	2.9	1.4	1.3	1.7	1.7	1.7
Comp Day Expense Payable	-	-	-	-	21	NM	-	-	-	-	0.4	-
Accrued Taxes	38	39	38	42	35	2.3	0.7	0.7	0.7	0.6	0.6	0.7
Retirement Expense Payable	394	378	353	342	298	7.2	7.6	7.0	6.0	5.3	4.9	6.0
Current Portion of Long-Term Debt	92	92	335	340	292	(25.1)	1.8	1.7	5.7	5.3	4.8	4.8
Total Current Liabilities	675	586	801	834	747	(2.5)	13.1	10.8	13.6	13.0	12.4	13.0
Long-Term Liabilities:												
Long-Term Debt	115	207	299	556	535	(31.9)	2.2	3.8	5.1	8.6	8.9	5.1
Total Long-Term Liabilities	115	207	299	556	535	(31.9)	2.2	3.8	5.1	8.6	8.9	5.1
Total Liabilities	790	793	1,100	1,390	1,282	(11.4)	15.3	14.6	18.7	21.6	21.2	18.7
Pilots' Equity:												
December Distributions Payable to Pilots	1,481	1,442	1,522	1,661	1,256	4.2	28.8	26.6	25.9	25.8	20.8	25.9
Reserved for Operations	750	750	750	750	750	-	14.6	13.8	12.8	11.7	12.4	12.8
Reserved for Working Capital Account	356	603	693	974	1,135	(25.1)	6.9	11.1	11.8	15.1	18.8	11.8
Remainder of Pilots' Equity	1,773	1,839	1,813	1,657	1,613	2.4	34.4	33.9	30.8	25.8	26.7	30.8
Total Pilots' Equity	4,361	4,633	4,778	5,042	4,754	(2.1)	84.7	85.4	81.3	78.4	78.8	81.3
TOTAL LIABILITIES & EQUITY	5,150	5,426	5,878	6,432	6,036	(3.9)	100.0	100.0	100.0	100.0	100.0	100.0

Definitions are presented in Schedule A.

Sources: Special-purpose consolidated financial statements, and Willamette Management Associates calculations.

Puget Sound Pilots Association

EXHIBIT 2
PUGET SOUND PILOTS ASSOCIATION
HISTORICAL AND COMMON SIZE INCOME STATEMENTS

	Fiscal Years Ended December 31,				CAGR 2014-2018 %	Fiscal Years Ended December 31,				Median 2014-2018 %
	2018	2017	2016	2015		2018	2017	2016	2015	
	\$000	\$000	\$000	\$000		%	%	%	%	
Pilotage Revenue	33,997	32,842	34,183	32,881	1.0	100.0	100.0	100.0	100.0	100.0
<i>Change from Prior Period</i>	3.5%	-3.9%	4.0%	0.8%						
Operating Expenses:										
Seattle Office Operating Expense and Administrative Overhead	10,252	9,957	9,789	10,002	1.7	30.2	30.3	28.6	30.4	30.2
Boat Operating Expense	1,680	1,606	1,829	1,696	(4.7)	4.9	4.9	5.3	5.2	5.2
Port Angeles Station Operating Expense	538	730	499	521	(1.5)	1.6	2.2	1.5	1.6	1.6
Total Operating Expenses	12,470	12,293	12,116	12,219	0.5	36.7	37.4	35.4	37.2	37.2
Transportation Fees Paid Directly to Pilots	1,036	1,030	1,098	1,119	(1.1)	3.0	3.1	3.2	3.4	3.3
Net Income From Pooled Operations	20,490	19,519	20,969	19,543	1.5	60.3	59.4	61.3	59.4	59.4
Other Income and (Expense):										
Interest Income	-	92	49	30	NM	-	0.3	0.1	0.1	0.1
Miscellaneous Income	-	-	-	1	NM	-	-	-	0.0	-
Loss on Asset Disposal	-	-	-	(1)		-	-	-	-	(0.0)
Interest Expense	(6)	-	-	-	NM	(0.0)	-	-	-	-
Total Other Income and (Expense)	(6)	92	49	31	NM	(0.0)	0.3	0.1	0.1	0.1
Balance of Revenue Pool Before Deductions of Individual Pilots' Business Expenses	20,484	19,611	21,018	19,574	1.4	60.3	59.7	61.5	59.5	59.7
<i>Change from Prior Period</i>	4.5%	-6.7%	7.4%	1.1%						
Less Per Detail Below										
Buy-ins and Buy-outs, net	(246)	(91)	(280)	(161)	NM	(0.7)	(0.3)	(0.8)	(0.5)	0.9
All Other Payments to Pilots	(20,510)	(19,666)	(21,001)	(19,124)	0.6	(60.3)	(59.9)	(61.4)	(58.2)	(61.5)
Total Detail	(20,756)	(19,756)	(21,282)	(19,285)	1.2	(61.1)	(60.2)	(62.3)	(58.7)	(60.6)
Net Decrease in Pilots' Equity	(272)	(145)	(264)	288	(10.1)					
Beginning Pilots' Equity	4,633	4,778	5,042	4,754	(2.7)					
Ending Pilots' Equity	4,361	4,633	4,778	5,042	(2.1)					

Definitions are presented in Schedule A.
Sources: Special-purpose consolidated financial statements, and Willamette Management Associates calculations.

EXHIBIT 3
PUGET SOUND PILOTS ASSOCIATION
HISTORICAL STATEMENTS OF CASH FLOW

	Fiscal Years Ended December 31,				
	2018 \$000	2017 \$000	2016 \$000	2015 \$000	2014 \$000
Cash Flow from Operating Activities:					
Net Income	20,484	19,611	21,018	19,574	19,355
<i>Adjustments to Reconcile Net Income to Net Cash from Operations:</i>					
Depreciation and Amortization	162	402	428	373	364
Loss on Disposal of Assets	-	-	-	-	1
<i>Changes in Assets and Liabilities:</i>					
<i>(Increase) Decrease in:</i>					
Accounts Receivable	(71)	(50)	244	(768)	285
Prepaid Expenses	5	33	(17)	4	(1)
<i>Increase (Decrease) in:</i>					
Other Assets	-	-	-	(1)	-
Funds Held in Trust	73	4	(36)	9	(17)
Comp Day Expense Payable	-	-	-	(21)	(9)
Accrued Taxes	(1)	0	(3)	7	(6)
Retirement Expense Payable	16	25	10	44	27
<i>Net Cash Provided by Operations</i>	<u>20,669</u>	<u>20,024</u>	<u>21,644</u>	<u>19,220</u>	<u>19,998</u>
Cash Flow from Investing Activities:					
Purchases of Property, Boats, and Equipment	-	-	(217)	-	-
<i>Net Cash Used in Investing Activities</i>	<u>-</u>	<u>-</u>	<u>(217)</u>	<u>-</u>	<u>-</u>
Cash Flow from Financing Activities:					
Principal Payments on Notes Payable	(92)	(335)	(292)	(292)	(292)
Proceeds from Notes Payable	-	-	30	21	-
Payments from Buy-in and Buy-outs, net	(246)	(91)	(280)	(161)	281
Payments to Members	(20,510)	(19,666)	(21,001)	(19,124)	(20,053)
<i>Net Cash Used in Financing Activities</i>	<u>(20,848)</u>	<u>(20,091)</u>	<u>(21,543)</u>	<u>(19,556)</u>	<u>(20,063)</u>
Net Increase (Decrease) in Cash	(180)	(67)	(116)	(336)	(65)
Cash and Cash Equivalents, Beginning of Year	<u>1,675</u>	<u>1,742</u>	<u>1,858</u>	<u>2,194</u>	<u>2,259</u>
Cash and Cash Equivalents, End of Year	<u><u>1,495</u></u>	<u><u>1,675</u></u>	<u><u>1,742</u></u>	<u><u>1,858</u></u>	<u><u>2,194</u></u>

Sources: Special-purpose consolidated financial statements.

EXHIBIT 4
PUGET SOUND PILOTS ASSOCIATION
NORMALIZED FINANCIAL FUNDAMENTALS
NORMALIZED TO INCLUDE PILOTAGE LABOR EXPENSE

	Fiscal Years Ended December 31,					5-Year Average	CAGR 2014-2018 %
	2018	2017	2016	2015	2014		
	\$000	\$000	\$000	\$000	\$000	\$000	
Reported Operating Results:							
Revenue [a]	33,997	32,842	34,183	32,881	32,623	33,305	1.0
<i>Change from Prior Period</i>	<i>3.5%</i>	<i>-3.9%</i>	<i>4.0%</i>	<i>0.8%</i>			
Pretax Income [a]	20,484	19,611	21,018	19,574	19,355	20,008	1.4
Normalization Adjustments:							
Number of PSP Member/Pilots [b]	51	52	54	54	54		
x Pilot Salary [c]	(162)	(154)	(110)	(106)	(105)		
= Pilotage Labor Expense	(8,241)	(8,019)	(5,966)	(5,745)	(5,681)		
Total Normalization Adjustments:	(8,241)	(8,019)	(5,966)	(5,745)	(5,681)		
Normalized Pretax Income	12,243	11,592	15,051	13,829	13,674	13,278	(2.7)
(1 - Income Tax Rate) [d]	1.00	1.00	1.00	1.00	1.00		
Normalized Net Income	12,243	11,592	15,051	13,829	13,674	13,278	(2.7)
<i>Normalized Net Income Margin</i>	<i>36.0%</i>	<i>35.3%</i>	<i>44.0%</i>	<i>42.1%</i>	<i>41.9%</i>		
Depreciation and Amortization Expense [e]	162	402	428	373	364	346	(18.2)
Interest Expense [a]	(6)	-	-	-	-		
Normalized Income Measures:							
Net Income	12,243	11,592	15,051	13,829	13,674	13,278	(2.7)
<i>Change from Prior Period</i>	<i>5.6%</i>	<i>-23.0%</i>	<i>8.8%</i>	<i>1.1%</i>			
Earnings before Interest and Taxes	12,237	11,592	15,051	13,829	13,674	13,277	(2.7)
<i>Change from Prior Period</i>	<i>5.6%</i>	<i>-23.0%</i>	<i>8.8%</i>	<i>1.1%</i>			
Earnings before Interest, Taxes, Depreciation, and Amortization	12,399	11,994	15,479	14,202	14,037	13,622	(3.1)
<i>Change from Prior Period</i>	<i>3.4%</i>	<i>-22.5%</i>	<i>9.0%</i>	<i>1.2%</i>			
Capital Requirements:							
Capital Expenditures [c]	-	-	217	-	-		
Operating Working Capital Increase (Decrease) [f]	(95)	(15)	(162)	717	NA		
Balance Sheet Fundamentals:							
Ending Cash Balance	1,495	1,675	1,742	1,858	2,194	1,793	(9.1)
Operating Working Capital [f]	1,885	1,980	1,994	2,157	1,440	1,891	7.0
Interest-Bearing Debt	207	299	634	896	826	572	(29.2)
Tangible Book Value of Equity	4,361	4,633	4,778	5,042	4,754	4,714	(2.1)
Tangible Book Value of Invested Capital	4,568	4,932	5,412	5,938	5,580	5,286	(4.9)

Definitions are presented in Schedule A.

[a] As presented in Exhibit 2.

[b] Number of Pilots per the Board of Pilotage Commissioners Annual Report.

[c] As presented in Exhibit 5. Based on captains and pilots with 18 years of experience (the most years of experience reported) that operate in the Seattle area.

[d] The PSP association operates as an income tax pass-through entity.

[e] As presented in Exhibit 3.

[f] Operating working capital excludes cash and cash equivalents and interest-bearing debt.

Sources: Exhibits 1 through 3 and Willamette Management Associates calculations.

EXHIBIT 5
PUGET SOUND PILOTS ASSOCIATION
PILOTAGE LABOR EXPENSE

	2019	2018	2017 [a]	2016 [a]	2015 [a]	2014 [a]
	\$	\$	\$	\$	\$	\$
BLS - Captains, Mates, and Pilots of Water Vessels - National [b]:						
Employment	33,370	36,390	35,780	36,720	33,110	30,690
Mean Annual Wage	87,420	82,380	80,970	81,520	83,150	79,180
<i>Annual Percent Change</i>	6.1%	1.7%	-0.7%	-2.0%	5.0%	
10th percentile	37,270	35,410	35,640	34,950	38,310	36,370
25th percentile	50,020	48,190	49,340	49,740	53,450	50,410
Median	72,340	69,180	70,920	72,680	76,780	72,340
75th percentile	105,330	100,730	101,510	102,630	104,440	99,160
90th percentile	153,700	144,690	138,620	134,390	134,950	128,330

BLS - Captains, Mates, and Pilots of Water Vessels - Washington [b]:						
Employment	2,010	1,440	1,800	2,160	1,990	1,430
Mean Annual Wage	98,800	90,890	97,430	83,760	83,680	79,520
<i>Annual Percent Change</i>	8.7%	-6.7%	16.3%	0.1%	5.2%	
10th percentile	47,460	43,240	56,240	54,100	56,430	47,710
25th percentile	68,170	54,560	72,020	70,090	73,220	65,480
Median	89,470	82,870	90,220	82,800	81,400	79,280
75th percentile	110,780	108,290	107,920	101,510	99,220	98,080
90th percentile	151,880	155,950	148,970	110,050	106,390	105,190

BLS - Captains, Mates, and Pilots of Water Vessels - Seattle-Tacoma-Bellevue [b]:						
Employment	1,800	1,250	1,580	1,990	1,790	1,220
Mean Annual Wage	100,800	93,450	100,040	85,140	84,540	80,550
<i>Annual Percent Change</i>	7.9%	-6.6%	17.5%	0.7%	5.0%	
10th percentile	47,380	43,570	58,330	54,860	58,870	49,320
25th percentile	68,180	55,540	74,520	73,200	73,290	67,070
Median	89,480	85,850	92,000	82,810	82,580	81,330
75th percentile	118,030	110,960	109,880	102,630	99,220	98,080
90th percentile	157,150	161,580	154,210	110,490	106,390	105,200

ERI - Ship Captain - Washington:						
Years of Experience		18	18	18	18	18
Mean Annual Wage		126,117	122,801	119,576	116,428	113,372
<i>Annual Percent Change</i>		2.7%	2.7%	2.7%	2.7%	
10th percentile		105,057	102,295	99,609	96,987	94,441
25th percentile		114,276	111,272	108,349	105,497	102,728
Mean		126,117	122,801	119,576	116,428	113,372
75th percentile		137,951	134,324	130,796	127,353	124,010
90th percentile		149,555	145,623	141,798	138,066	134,441

Definitions are presented in Schedule A.

[a] The Bureau of Labor Statistics referred to the Seattle MSA as "Seattle-Bellevue-Everett, WA" from 2014 through 2017, before renaming the MSA Seattle-Tacoma-Bellevue in 2018.

[b] This occupation is categorized by the Bureau of Labor Statistics as Captains, Mates, and Pilots of Water Vessels. The service provided by this occupation, as defined by the Bureau of Labor Statistics, is to command or supervise operations of ships and water vessels, such as tugboats and ferryboats. Employment in this occupation requires a license issued by U.S. Coast Guard. The occupation excludes "Motorboat Operators." The industries served by this occupation include, among other, (1) inland water transportation and (2) support activities for water transportation.

Sources: Bureau of Labor Statistics, Economic Research Institute, and Willamette Management Associates calculations.

EXHIBIT 6
PUGET SOUND PILOTS ASSOCIATION
HISTORICAL FINANCIAL AND OPERATING RATIOS
NORMALIZED TO INCLUDE PILOTAGE LABOR EXPENSE

Ratio Analysis	Fiscal Years Ended December 31,				
	2018	2017	2016	2015	2014
Liquidity:					
Current Ratio	6.1	7.2	5.3	5.5	5.6
Quick Ratio	6.0	7.1	5.2	5.4	5.5
Working Capital (\$000)	3,439	3,641	3,476	3,786	3,444
Working Capital as a Percentage of Total Assets (%)	66.8	67.1	59.1	58.9	57.1
Book Value of Invested Capital (\$000)	4,568	4,932	5,412	5,938	5,580
Activity:					
Turnover [a]:					
Working Capital	9.6	9.2	9.4	9.1	NA
Receivables	13.6	13.4	13.4	14.4	NA
Total Asset	6.4	5.8	5.6	5.3	NA
Fixed Asset	30.4	23.5	20.1	18.0	NA
Average Collection Period (days)	26.9	27.2	27.2	25.3	NA
Coverage and Leverage:					
Interest Expense Coverage					
Total Interest-Bearing Debt/Total Assets (%)	4.0	5.5	10.8	13.9	13.7
Equity/Invested Capital (%)	95.5	93.9	88.3	84.9	85.2
Profitability (%) [b]:					
Pretax Profit Margin	36.0	35.3	44.0	42.1	41.9
Net Profit Margin	36.0	35.3	44.0	42.1	41.9
Net Return on:					
Ending Assets	237.7	213.6	256.1	215.0	226.5
Ending Equity	280.8	250.2	315.0	274.3	287.6
Average Assets	231.5	205.1	244.5	221.8	NA
Average Equity	272.3	246.3	306.5	282.3	NA

Definitions are presented in Schedule A.

[a] Average turnover.

[b] Based on profitability as presented in Exhibit 4.

Sources: Exhibits 1 through 4 and Willamette Management Associates calculations.

EXHIBIT 7
PUGET SOUND PILOTS ASSOCIATION
VALUE OF EQUITY AND TOTAL INVESTED CAPITAL
CALCULATED BASED ON THE PSP BUY-SELL AGREEMENT MEMBERSHIP PAYMENT

	Fiscal Years Ended December 31,				
	2018	2017	2016	2015	2014
	\$000	\$000	\$000	\$000	\$000
Membership Payment					
Association's Annual Gross Income [a]	20,484	19,611	21,018	19,574	19,355
Less: Members Individual Expenses [b]	-	-	-	-	-
Association's Adjusted Gross Income	20,484	19,611	21,018	19,574	19,355
Divided by: Number of Members/Pilots [c]	51	52	54	54	54
Equals: Individual Adjusted Gross Income	402	377	389	362	358
New Members Membership Payment = 3-year Average Individual Adjusted Gross Income	389	376	370	NA	NA
Value of Equity and Total Invested Capital					
New Member Membership Payment	389	376	370		
x Number of Member/Pilots	51	52	54		
= Value of Equity	19,856	19,566	19,982		
+ Current Portion Long-Term Debt [d]	92	92	335		
+ Long-Term Debt [d]	115	207	299		
= Value of Total Invested Capital	20,063	19,865	20,616		

Definitions are presented in Schedule A.

[a] As presented in Exhibit 2.

[b] Requested, but was not provided with, the members individual expenses.

[c] Number of pilots per the Board of Pilotage Commissioners Annual Report.

[d] As presented in Exhibit 1.

Sources: As indicated above and Willamette Management Associates calculations.

EXHIBIT 8
PUGET SOUND PILOTS ASSOCIATION
RATE OF RETURN ON EQUITY AND TOTAL INVESTED CAPITAL
PROFITABILITY NORMALIZED TO INCLUDE PILOTAGE LABOR EXPENSE

	Fiscal Years Ended December 31,		
	2018	2017	2016
	\$000	\$000	\$000
<hr/>			
Rate of Return on Equity	<hr/>		
Normalized Net Income [a]	12,243	11,592	15,051
Divided by: Value of Equity [b]	19,856	19,566	19,982
Equals: Rate of Return of Equity	62%	59%	75%
Rate of Return on Total Invested Capital	<hr/>		
Normalized EBITDA [a]	12,237	11,592	15,051
Divided by: Value of Total Invested Capital [b]	20,063	19,865	20,616
Equals: Rate of Return of Invested Capital	61%	58%	73%

Definitions are presented in Schedule A.

[a] As presented in Exhibit 4.

[b] As presented in Exhibit 7.

Sources: As indicated above and Willamette Management Associates calculations.

EXHIBIT 9
PUGET SOUND PILOTS ASSOCIATION
FAIR AND REASONABLE RATES OF RETURN
BASED ON TRANSPORTATION INDUSTRY COST OF CAPITAL
AS OF DECEMBER 31, 2018

Cost of Equity Capital:

Model #1: Modified Capital Asset Pricing Model (ex post equity risk premium)	Source	
Risk-Free Rate of Return	2.9%	20-year U.S. Treasury bond, Federal Reserve Statistical Release, as of December 31, 2018
General Equity Risk Premium	6.9%	Duff & Phelps Cost of Capital Navigator, 2019
Multiplied by: Industry Beta	<u>1.00</u>	As presented in Exhibit 10
Industry-Adjusted General Equity Risk Premium	6.9%	
Size Equity Risk Premium	3.4%	Duff & Phelps Cost of Capital Navigator, 2019
Company-Specific Equity Risk Premium	<u>1.0%</u>	Willamette Management Associates estimate
Indicated Cost of Equity Capital	<u><u>14.2%</u></u>	
Model #2: Modified Capital Asset Pricing Model (supply side equity risk premium)	Source	
Risk-Free Rate of Return	2.9%	20-year U.S. Treasury bond, Federal Reserve Statistical Release, as of December 31, 2018
General Equity Risk Premium	6.1%	Duff & Phelps Cost of Capital Navigator, 2019
Multiplied by: Industry Beta	<u>1.00</u>	As presented in Exhibit 10
Industry-Adjusted General Equity Risk Premium	6.1%	
Size Equity Risk Premium	3.4%	Duff & Phelps Cost of Capital Navigator, 2019
Company-Specific Equity Risk Premium	<u>1.0%</u>	Willamette Management Associates estimate
Indicated Cost of Equity Capital	<u><u>13.4%</u></u>	
Model #3: Build-Up Model	Source	
Risk-Free Rate of Return	2.9%	20-year U.S. Treasury bond, Federal Reserve Statistical Release, as of December 31, 2018
General Equity Risk Premium	6.9%	Duff & Phelps Cost of Capital Navigator, 2019
Industry Equity Risk Premium	0.7%	Duff & Phelps Cost of Capital Navigator, 2019 SIC code 44XX (Water Transportation)
Size Equity Risk Premium	3.4%	Duff & Phelps Cost of Capital Navigator, 2019
Company-Specific Equity Risk Premium	<u>1.0%</u>	Willamette Management Associates estimate
Indicated Cost of Equity Capital	<u><u>14.9%</u></u>	
Selected Cost of Equity Capital (rounded)	<u><u>14%</u></u>	Median of Models #1 - #3 Indicated Cost of Equity Capital

Cost of Debt Capital:

Before-Tax Cost of Debt Capital	3.2%	As presented in Exhibit 11
Income Tax Rate	<u>21%</u>	Equals the Company-estimated effective tax rate
Selected Cost of Debt Capital	<u><u>2.5%</u></u>	

Weighted Average Cost of Capital Calculation:

Selected Cost of Equity Capital	14.0%	
Multiplied by: Equity/Invested Capital	<u>68%</u>	As presented in Exhibit 10
Equals: Weighted Cost of Equity Capital	9.5%	
Selected Cost of Debt Capital	2.5%	
Multiplied by: Debt/Invested Capital	<u>32%</u>	As presented in Exhibit 10
Equals: Weighted Cost of Debt Capital (rounded)	<u>0.8%</u>	

Weighted Average Cost of Capital (rounded)

10%

Definitions are presented in Schedule A.
Sources: As indicated above.

EXHIBIT 10
PUGET SOUND PILOTS ASSOCIATION
MODIFIED CAPITAL ASSET PRICING MODEL
ESTIMATION OF BETA

Selected Guideline Publicly Traded Companies	5-Year Adjusted Levered Beta [a]	Income Tax Rate [b]	Debt to Capital Percent [c]	Equity to Capital Percent	Unlevered Beta [d]
Covenant Transportation Group, Inc.	1.34	21%	40%	60%	0.88
Pangaea Logistics Solutions, Ltd.	0.41	21%	56%	44%	0.21
Forward Air Corporation	1.38	21%	3%	97%	1.34
Navios Maritime Holdings Inc.	1.83	21%	98%	2%	0.04
Saker Aviation Services, Inc.	1.13	21%	8%	92%	1.06
SEACOR Holdings Inc.	0.81	21%	34%	66%	0.57
Expeditors International of Washington, Inc.	0.90	21%	0%	100%	0.90
Kirby Corporation	1.01	21%	26%	74%	0.79
Minimum	0.41		0%	2%	0.04
Maximum	1.83		98%	100%	1.34
Average	1.10		33%	67%	0.72
Median	1.07		30%	70%	0.83

Duff & Phelps, 2018 Valuation Handbook: Industry Cost of Capital[e]

SIC Code 4XXX (Transportation, Communications, Electric, Gas, and Sanitary Services):					
Median	0.89		34%	66%	0.59
SIC Composite	0.83		37%	63%	0.56
Large Composite	0.86		38%	62%	0.58

Puget Sound Pilots Association	0.98 [f]	21%	[g]	32%	[h]	68%	0.71
Selected Beta	1.00						

Definitions are presented in Schedule A.

[a] Per Bloomberg (as of December 31, 2018).

[b] Estimated effective income tax rate.

[c] As presented in Exhibit 14.

[d] Equals: Levered beta ÷ [1 + (1 - income tax rate) × ((% debt) ÷ (% equity))].

[e] Per Duff & Phelps, 2018 Valuation Handbook: Industry Cost of Capital.

[f] Equals: Unlevered beta × [1 + (1 - income tax rate) × ((% debt) ÷ (% equity))].

[g] Estimated effective income tax rate.

[h] Equals the median debt percentage in the capital structure (on a market value basis) for the guideline publicly traded companies and the industry median as presented in the Duff & Phelps, 2018 Valuation Handbook: Industry Cost of Capital (rounded).

Sources: Bloomberg; Duff & Phelps, 2018 Valuation Handbook: Industry Cost of Capital; S&P Capital IQ; Exhibit 14; and Willamette Management Associates calculations.

EXHIBIT 11
PUGET SOUND PILOTS ASSOCIATION
ESTIMATION OF COST OF DEBT CAPITAL

Long-Term Debt Outstanding	Interest Rate	12/31/18 Principal Balance \$000	12/31/17 Principal Balance \$000
Dispatch Software Note Payable to Bank Secured by PSP Assets	<u>3.2%</u>	<u>207</u>	<u>299</u>
Weighted Average Interest Rate and Total	3.2%	<u>207</u>	<u>299</u>
Estimated Before-Tax Cost of Debt Capital	<u>3.2%</u>		

Sources: Special-purpose financial statements and Willamette Management Associates calculations.

EXHIBIT 12
PUGET SOUND PILOTS ASSOCIATION
COMPARATIVE ANALYSIS
FAIR AND REASONABLE RATES OF RETURN
BASED ON SELECT GUIDELINE PUBLICLY TRADED COMPANIES
COMPARISON OF OPERATING PERFORMANCE

Size (LTM revenue, \$000)	Market Value of Equity (as of December 31, 2018)	Market Value of Invested Capital (as of December 31, 2018)
Expeditors International of Washington, Inc.	11,751,659	11,751,659
Kirby Corporation	4,032,574	5,442,762
Forward Air Corporation	1,601,746	1,848,254
Covenant Transportation Group, Inc.	675,133	1,649,390
SEACOR Holdings Inc.	352,245	1,029,758
Navios Maritime Holdings Inc.	133,467	588,083
Pangaea Logistics Solutions, Ltd.	32,247	302,897
<i>Puget Sound Pilots Association</i>	19,856	20,063
Saker Aviation Services, Inc.	2,635	2,866

LTM Profitability (EBIT to revenue)	Return on MVE (Net Income to MVE)	Return on MVIC (EBITDA to MVIC)
<i>Puget Sound Pilots Association</i>	61.7%	61.0%
Expeditors International of Washington, Inc.	7.6%	34.8%
Forward Air Corporation	7.0%	24.2%
Pangaea Logistics Solutions, Ltd.	6.7%	17.0%
SEACOR Holdings Inc.	4.0%	14.4%
Kirby Corporation	4.8%	9.9%
Covenant Transportation Group, Inc.	4.8%	8.8%
Saker Aviation Services, Inc.	2.8%	7.4%
Navios Maritime Holdings Inc.	-26.1%	5.9%

Activity (Total Asset Turnover)	Activity (Working Capital Turnover)	Leverage (Equity to Invested Capital)
<i>Puget Sound Pilots Association</i>	6.4	100.0%
Expeditors International of Washington, Inc.	2.5	95.9%
Forward Air Corporation	1.8	95.5%
Saker Aviation Services, Inc.	1.7	92.1%
Covenant Transportation Group, Inc.	1.2	70.7%
Pangaea Logistics Solutions, Ltd.	0.9	69.5%
SEACOR Holdings Inc.	0.5	59.3%
Kirby Corporation	0.5	57.9%
Navios Maritime Holdings Inc.	0.2	22.3%

Definitions are presented in Schedule A.

Sources: Exhibits 13, 14, and S&P Capital IQ for the guideline publicly traded companies.

Puget Sound Pilots Association

EXHIBIT 13a
PUGET SOUND PILOTS ASSOCIATION
COMPARATIVE ANALYSIS
SELECT GUIDELINE PUBLICLY TRADED COMPANIES
COMMON SIZE FINANCIAL STATEMENTS

	Covenant Transportati on Group, Inc. 12/31/18 %	Pangaea Logistics Solutions, Ltd. 12/31/18 %	Forward Air Corporation 12/31/18 %	Navios Maritime Holdings Inc. 12/31/18 %	Saker Aviation Services, Inc. 12/31/18 %	SEACOR Holdings Inc. 12/31/18 %	Expeditors International of Washington, Inc. 12/31/18 %	Kirby Corporation 12/31/18 %	Median %	Puget Sound Pilots Association 12/31/18 %
Size (LTM):										
Assets (\$million)	774	453	760	2,682	6	1,471	3,315	5,872	1,122	5
Revenue (\$million)	885	373	1,321	506	11	836	8,138	2,971	861	34
MVIC (\$million)	588	303	1,649	1,848	3	1,030	11,752	5,443	1,340	20
Income Statements (LFYE):										
Net Sales	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Cost of Goods Sold	75.9	81.0	76.6	59.7	54.6	70.8	86.8	72.7	74.3	-
Gross Margin	24.1	19.0	23.4	40.3	45.4	29.2	13.2	27.3	25.7	100.0
General & Administrative Expenses	8.9	4.4	11.1	7.2	36.8	12.3	2.7	11.2	10.0	39.3
Depreciation Expense	8.6	4.7	3.0	20.3	4.2	8.9	0.7	7.6	6.1	0.5
Operating Profit	6.7	9.9	9.3	12.8	4.4	7.9	9.8	8.5	8.9	60.3
Interest Expense	1.0	2.4	0.1	27.3	0.2	3.8	-	1.6	1.3	0.0
Other Income (Expenses), Net	0.9	(0.9)	(0.0)	(11.7)	0.3	0.9	0.3	0.0	0.2	(24.2)
Pretax Income	6.6	6.7	9.1	(26.2)	4.6	5.0	10.1	6.9	6.6	36.0
Income Taxes	(1.8)	-	(2.1)	0.1	(1.8)	(1.1)	(2.4)	(2.1)	(1.8)	-
NET INCOME	4.8	6.7	7.0	(26.1)	2.8	4.0	7.6	4.8	4.8	36.0
Balance Sheet (LFYE):										
ASSETS										
Cash & Equivalents	3.0	11.8	3.4	5.6	44.8	12.1	27.9	0.1	8.7	29.0
Accounts Receivable	19.5	6.3	20.6	2.2	13.4	11.7	47.7	7.1	12.5	49.4
Inventory	0.5	4.2	0.3	1.0	2.7	0.3	-	8.6	0.8	-
Other Current Assets	4.3	2.7	2.2	2.2	13.2	3.0	6.9	2.8	2.9	1.5
Total Current Assets	27.4	25.0	26.5	11.1	74.0	27.1	82.5	18.7	26.8	79.9
Fixed Assets (at cost)	82.6	91.1	54.4	94.1	63.4	95.7	28.7	85.4	84.0	197.2
Accumulated Depreciation	(24.3)	(16.7)	(26.8)	(23.3)	(57.3)	(38.1)	(13.5)	(25.1)	(24.7)	(177.1)
Net Fixed Assets	58.3	74.4	27.6	70.8	6.1	57.5	15.2	60.3	57.9	20.1
Intangible Assets	9.6	-	41.1	11.2	11.8	3.9	0.2	20.1	10.4	-
Other Assets	4.8	0.6	4.8	6.9	8.0	11.5	2.0	1.0	4.8	0.0
TOTAL ASSETS	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
LIABILITIES & EQUITY										
Accounts Payable	2.9	4.4	4.6	2.9	5.5	4.1	27.2	4.7	4.5	-
Accrued Expenses	9.0	1.9	4.2	4.3	4.0	1.5	6.5	4.2	4.2	-
Current Portion LTD	3.7	4.4	-	2.6	0.9	0.6	-	-	0.7	1.8
Other Interest-Bearing Debt	0.7	1.8	0.0	-	-	-	-	0.0	0.0	-
Other Current Liabilities	0.2	4.9	1.0	2.1	2.6	2.3	6.3	1.4	2.2	11.3
Total Current Liabilities	16.5	17.4	9.8	11.9	13.0	8.4	40.0	10.4	12.5	13.1
Long-Term Debt	26.1	31.1	6.2	65.1	2.7	23.5	-	24.0	23.8	2.2
Deferred Income Tax	10.0	-	4.9	0.3	-	6.4	-	9.2	2.6	-
Other Liabilities	3.1	-	6.3	3.2	0.0	3.6	-	1.6	2.3	-
Total Liabilities	55.6	48.5	27.2	80.6	15.7	42.0	40.0	45.2	43.6	15.3
Total Equity	44.4	51.5	72.8	19.4	84.3	58.0	60.0	54.8	56.4	84.7
TOTAL LIABILITIES & EQUITY	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Definitions are presented in Schedule A.

Sources: Exhibits 1, 2, 4, and 14; S&P Capital IQ; and Willamette Management Associates calculations.

EXHIBIT 13b
PUGET SOUND PILOTS ASSOCIATION
COMPARATIVE ANALYSIS
SELECT GUIDELINE PUBLICLY TRADED COMPANIES
FINANCIAL AND OPERATING RATIOS

	Covenant Transportati on Group, Inc. 12/31/18	Pangaea Logistics Solutions, Ltd. 12/31/18	Forward Air Corporation 12/31/18	Navios Maritime Holdings Inc. 12/31/18	Saker Aviation Services, Inc. 12/31/18	SEACOR Holdings Inc. 12/31/18	Expeditors International of Washington, Inc. 12/31/18	Kirby Corporation 12/31/18	Median	Puget Sound Pilots Association 12/31/18
Liquidity Ratios:										
Current Ratio	1.7	1.4	2.7	0.9	5.7	3.2	2.1	1.8	1.9	6.1
Quick Ratio	1.4	1.0	2.4	0.7	4.5	2.8	1.9	0.7	1.6	6.0
Working Capital (\$million)	84.3	34.5	126.4	(21.8)	3.9	274.4	1,408.0	488.7	105.3	3.4
Activity Ratios:										
Sales/Average Receivables	6.9	15.0	8.7	8.4	8.3	5.9	5.4	6.8	7.6	13.6
Days in Receivables	53	24	42	44	44	62	67	53	48	27
Cost of Sales/Inventory (FIFO)	161.9	17.5	552.1	10.4	36.3	132.9	NA	5.3	26.9	NA
Days in Inventory	2	21	1	35	10	3	NA	70	6	NA
Working Capital Turnover	10.7	15.7	11.6	(539.7)	3.1	3.1	5.7	6.2	5.9	9.6
Fixed Asset Turnover	1.9	1.1	6.4	0.3	21.0	1.0	15.8	0.9	1.5	30.4
Asset Turnover	1.2	0.9	1.8	0.2	1.7	0.5	2.5	0.5	1.0	6.4
Coverage/Leverage Ratios:										
Interest Expense Coverage [a]:										
EBIT	7.7	3.8	68.7	0.0	30.7	2.3	NA	5.4	4.6	1,927.6
EBITDA	16.4	5.8	91.2	0.8	58.3	4.7	NA	10.2	8.0	1,953.1
Fixed Assets/Equity (%)	131.3	144.6	37.9	363.9	7.3	99.1	25.4	110.1	104.6	23.8
Equity/Invested Capital (%)	59.3	57.9	92.1	22.3	95.9	70.7	100.0	69.5	70.1	95.5
Profitability Ratios (%) [a]:										
Pretax Income/Average Equity	18.2	11.2	22.2	(23.2)	9.7	5.3	41.1	6.5	10.4	272.3
Pretax Income/Average Assets	8.2	5.7	16.6	(5.0)	7.9	2.7	25.4	3.7	6.8	231.5
Pretax Income/Sales	6.6	6.7	9.1	(26.2)	4.6	5.0	10.1	6.9	6.6	36.0
Net Income/Average Equity	13.3	11.2	17.0	(23.1)	5.9	4.1	31.1	4.5	8.6	272.3
Net Income/Average Assets	6.0	5.7	12.7	(5.0)	4.8	2.2	19.3	2.6	5.3	231.5
Net Income/Sales	4.8	6.7	7.0	(26.1)	2.8	4.0	7.6	4.8	4.8	36.0
Cash Flow/Average Equity	37.1	19.1	24.4	(5.1)	14.9	13.4	33.8	11.6	17.0	275.9
Cash Flow/Average Assets	16.6	9.7	18.3	(1.1)	12.2	7.0	21.0	6.7	10.9	234.6
Cash Flow/Sales	13.4	11.4	10.0	(5.7)	7.0	12.9	8.3	12.4	10.7	36.5
EBIT/Average Invested Capital	12.3	8.6	20.8	0.2	9.4	5.8	41.1	5.8	9.0	257.9
EBITDA/Average Invested Capital	26.2	13.1	27.7	4.7	17.8	11.7	43.8	10.9	15.5	261.3

Definitions are presented in Schedule A.

[a] Coverage and profitability ratios are based on pretax and after-tax income adjusted for nonrecurring items.

Sources: Exhibits 1, 2, 4, and 14; S&P Capital IQ; and Willamette Management Associates calculations.

Puget Sound Pilots Association

EXHIBIT 14a
PUGET SOUND PILOTS ASSOCIATION
COMPARATIVE ANALYSIS
SELECTED GUIDELINE PUBLICLY TRADED COMPANIES
MARKET VALUE OF INVESTED CAPITAL

Company Name	Mkt./Sym.	Fiscal Year Ending	Latest Quarter Book Value of Tangible Book Value \$000	Latest Quarter Book Value of Interest-Bearing Debt \$000	Latest Quarter Tangible Book Value of Invested Capital \$000	Latest Quarter Market Value of Interest-Bearing Debt [a] \$000	As of or for Period Ending	Bid/Close Price per Common Share 12/31/18 \$	Common Shares Outstg. [b] 000s	Market Value of Common Equity \$000	Market Value of Invested Capital \$000
Covenant Transportation Group, Inc.	NasdaqGS:CVTI	12/18	269,006	235,838	504,844	235,838	12/18	19.20	18,346	352,245	588,083
Pangea Logistics Solutions, Ltd.	NasdaqCM:PANL	12/18	233,367	169,429	402,796	169,429	12/18	3.03	44,049	133,467	302,897
Forward Air Corporation	NasdaqGS:FWRD	12/18	240,491	47,644	288,135	47,644	12/18	54.85	29,202	1,601,746	1,649,390
Navios Maritime Holdings Inc.	NYSE:NM	12/18	222,407	1,816,007	2,038,414	1,816,007	12/18	0.27	117,689	32,247	1,848,254
Saker Aviation Services, Inc.	OTCPK:SKAS	12/18	4,597	231	4,828	231	12/18	0.09	30,198	2,635	2,866
SEACOR Holdings Inc.	NYSE:CKH	12/18	796,583	354,625	1,151,208	354,625	12/18	37.00	18,247	675,133	1,029,758
Expeditors International of Washington, Inc.	NasdaqGS:EXPD	12/18	1,979,793	-	1,979,793	-	12/18	68.09	172,590	11,751,659	11,751,659
Kirby Corporation	NYSE:KEX	12/18	2,038,278	1,410,188	3,448,466	1,410,188	12/18	67.36	59,866	4,032,574	5,442,762
Puget Sound Pilots Association	NA	12/18	4,361	207	4,568	207	12/18	NA	NA	19,856	20,063

Definitions are presented in Schedule A, and footnotes and sources are presented in Exhibit 14f.

Puget Sound Pilots Association

EXHIBIT 14b
PUGET SOUND PILOTS ASSOCIATION
COMPARATIVE ANALYSIS
SELECTED GUIDELINE PUBLICLY TRADED COMPANIES
EARNINGS BEFORE INTEREST AND TAXES

Company Name	Net Income					5-Year Average Annual Compound Growth [d] %	Coefficient of Variation [e] %	Market Value of Common Equity \$000	Net Income/MVE			
	LTM \$000	2018 \$000	2017 \$000	2016 \$000	2015 \$000				2014 \$000	5-Year LTM	5-Year Average	
Covenant Transportation Group, Inc.	42,503	42,503	14,211	16,835	42,085	21,907	27,508	18.0	50.1	352,245	12%	8%
Pangaea Logistics Solutions, Ltd.	24,842	24,842	18,376	9,159	19,360	(2,443)	13,859	NM	77.3	133,467	19%	10%
Forward Air Corporation	92,337	92,337	88,294	47,732	71,872	61,498	72,347	10.7	25.7	1,601,746	6%	5%
Navios Maritime Holdings Inc.	(131,791)	(131,791)	(115,264)	(344,047)	(124,328)	(11,853)	(145,456)	82.6	(83.4)	32,247	NM	NM
Saker Aviation Services, Inc.	312	312	478	880	887	831	677	(21.7)	39.2	2,635	12%	26%
SEACOR Holdings Inc.	33,331	33,331	19,802	(28,399)	(28,647)	58,223	10,862	(13.0)	354.5	675,133	5%	2%
Expeditors International of Washington, Kirby Corporation	619,790	619,790	487,653	432,533	459,497	379,460	475,787	13.0	18.9	11,751,659	5%	4%
	142,713	142,713	115,424	143,784	228,059	285,506	183,097	(15.9)	38.9	4,032,574	4%	5%
High								82.6			19%	26%
Low								(21.7)			4%	2%
Mean								10.5			9%	8%
Median								10.7			6%	5%
Standard Deviation								35.5			5%	8%
Coefficient of Variation (%)								337.0			61.9	97.4
Puget Sound Pilots Association	12,243	12,243	11,592	15,051	13,829	13,674	13,278	(2.7)	10.3	19,856	62%	67%

Definitions are presented in Schedule A, and footnotes and sources are presented in Exhibit 14f.

Puget Sound Pilots Association

EXHIBIT 14c
PUGET SOUND PILOTS ASSOCIATION
COMPARATIVE ANALYSIS
SELECTED GUIDELINE PUBLICLY TRADED COMPANIES
EARNINGS BEFORE INTEREST, TAXES, DEPRECIATION, AND AMORTIZATION

Company Name	Earnings before Interest, Taxes, Depreciation, and Amortization					5-Year Average Annual Compound Growth [d] %	Coefficient of Variation [e] %	Market Value Invested Capital \$000	EBITDA/MVIC	
	LTM \$000	2018 \$000	2017 \$000	2016 \$000	2015 \$000				2014 \$000	5-Year Average
Covenant Transportation Group, Inc.	142,577	142,577	103,977	107,094	134,362	99,919	16.5	588,083	24%	20%
Pangea Logistics Solutions, Ltd.	51,360	51,360	42,261	29,005	37,937	15,473	38.8	302,897	17%	12%
Forward Air Corporation	162,681	162,681	149,266	138,992	140,707	126,881	9.2	1,649,390	10%	9%
Navios Maritime Holdings Inc.	108,307	108,307	108,105	(115,332)	105,884	206,464	143.6	1,848,254	6%	4%
Saker Aviation Services, Inc.	998	998	1,620	2,300	2,513	2,415	32.8	2,866	35%	69%
SEACOR Holdings Inc.	148,453	148,453	145,709	60,346	57,379	259,695	61.7	1,029,758	14%	13%
Expeditors International of Washington, Inc.	872,348	872,348	763,905	733,652	782,701	660,181	10.1	11,751,659	7%	6%
Kirby Corporation	477,852	477,852	407,566	447,916	572,831	646,597	19.1	5,442,762	9%	9%
High							35.0		35%	69%
Low							(19.8)		6%	4%
Mean							0.4		15%	18%
Median							(0.4)		12%	11%
Standard Deviation							17.9		10%	21%
Coefficient of Variation (%)							5.029,3		64.8	118.5

Puget Sound Pilots Association	12,399	12,399	11,994	15,479	14,202	14,037	10.4	19,856	62%	69%
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Definitions are presented in Schedule A, and footnotes and sources are presented in Exhibit 14f.

Puget Sound Pilots Association

EXHIBIT 14d
PUGET SOUND PILOTS ASSOCIATION
COMPARATIVE ANALYSIS
SELECTED GUIDELINE PUBLICLY TRADED COMPANIES
REVENUE

Company Name	Revenue					5-Year Average Annual Compound Growth [d] %	Coefficient of Variation [e] %	Market Value Invested Capital \$000	Revenue/MVIC			
	LTM \$000	2018 \$000	2017 \$000	2016 \$000	2015 \$000				2014 \$000	5-Year LTM	5-Year Average	
Covenant Transportation Group, Inc.	885,455	885,455	705,007	670,651	724,240	718,980	740,867	5.3	11.3	588,083	1.51	1.26
Pangaea Logistics Solutions, Ltd.	372,970	372,970	385,946	238,017	287,333	398,276	336,508	(1.6)	20.9	302,897	1.23	1.11
Forward Air Corporation	1,320,886	1,320,886	1,169,346	1,030,210	959,125	780,959	1,052,105	14.0	19.5	1,649,390	0.80	0.64
Navios Maritime Holdings Inc.	505,686	505,686	463,049	419,782	480,820	569,016	487,671	(2.9)	11.3	1,848,254	0.27	0.26
Saker Aviation Services, Inc.	11,118	11,118	12,016	14,691	15,974	16,416	14,043	(9.3)	16.9	2,866	3.88	4.90
SEACOR Holdings Inc.	835,750	835,750	650,847	524,163	521,987	1,319,394	770,428	(10.8)	43.2	1,029,758	0.81	0.75
Expeditors International of Washington, Inc.	8,138,365	8,138,365	6,920,948	6,098,037	6,616,632	6,564,721	6,867,741	5.5	11.2	11,751,659	0.69	0.58
Kirby Corporation	2,970,697	2,970,697	2,214,418	1,770,673	2,147,532	2,566,318	2,333,928	3.7	19.5	5,442,762	0.55	0.43
High								14.0			3.88	4.90
Low								(10.8)			0.27	0.26
Mean								0.5			1.22	1.24
Median								1.0			0.81	0.69
Standard Deviation								8.3			1.14	1.51
Coefficient of Variation (%)								1,648.4			93.8	122.0
Puget Sound Pilots Association	33,997	33,997	32,842	34,183	32,881	32,623	33,305	1.0	2.2	19,856	1.71	1.68

Definitions are presented in Schedule A, and footnotes and sources are presented in Exhibit 14f.

EXHIBIT 14f
PUGET SOUND PILOTS ASSOCIATION
COMPARATIVE ANALYSIS
SELECTED GUIDELINE PUBLICLY TRADED COMPANIES
FOOTNOTES AND SOURCES TO EXHIBIT 14

Financial information for publicly traded companies and Puget Sound Pilots Association has been adjusted for nonrecurring items.

- [a] Book value if not publicly traded.
- [b] Per most recently available data prior to the valuation date.
- [c] If the LTM is at least six months beyond the latest fiscal year-end, then the five-year average includes the LTM and the most recent four fiscal year-ends. Otherwise, the five-year average includes the most recent five fiscal year-ends.
- [d] From earliest year on the table to the latest 12 months.
- [e] $(\text{Standard deviation}/\text{mean}) \times 100$.

Sources: FactSet, S&P Capital IQ, Exhibit 4, Exhibit 13, and Willamette Management Associates calculations.

f.

Puget Sound Pilots Association

EXHIBIT 15a
PUGET SOUND PILOTS ASSOCIATION
COMPARATIVE ANALYSIS
SELECTED GUIDELINE PUBLICLY TRADED COMPANIES
DESCRIPTION OF THE GUIDELINE PUBLICLY TRADED COMPANIES
COVENANT TRANSPORTATION GROUP, INC.

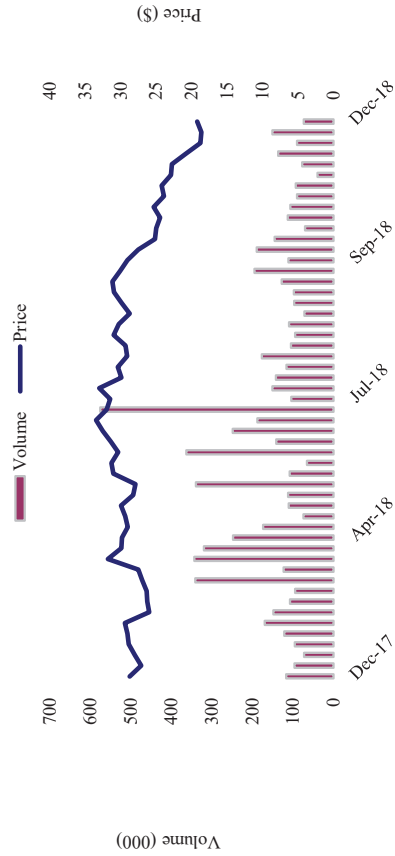
Business Description

Covenant Transportation Group, Inc., together with its subsidiaries, provides truckload transportation and brokerage services primarily in the continental United States. It offers expedited and dedicated services. The company also provides ancillary services, including freight brokerage and logistics services, warehousing, and accounts receivable factoring; and over-the-road truckload services, as well as transportation management, shuttle, and switching services. It serves transportation companies, such as freight forwarders, less-than-truckload carriers, and third-party logistics providers; and traditional truckload customers, including manufacturers, retailers, and food and beverage shippers. As of December 31, 2018, the company operated 3,154 tractors and 6,950 trailers. Covenant Transportation Group, Inc. was founded in 1986 and is headquartered in Chattanooga, Tennessee.

Financial Information

	LTM	2018	2017	2016
	\$000	\$000	\$000	\$000
Cash & Equivalents	23,127	23,127	15,356	7,750
Total Assets	773,524	773,524	649,668	620,538
Long-Term Debt	201,754	201,754	186,242	188,437
Stockholders' Equity	343,142	343,142	295,201	236,414
Revenue	885,455	885,455	705,007	670,651
Gross Profit	213,533	213,533	162,418	163,624
EBITDA	142,577	142,577	103,977	107,094
Net Income	42,503	42,503	14,211	16,835
EBITDA Margin	16.1%	16.1%	14.7%	16.0%
Net Profit Margin	4.8%	4.8%	2.0%	2.5%

Stock Performance



Valuation Data

Market Value of Equity \$000	352,245
Market Value of Invested Capital \$000	588,083
LTM Net Income / MVE	12%
EBITDA / MVIC	24%

Definitions are presented in Schedule A.

[a] From Bloomberg.

Sources: S&P Capital IQ, FactSet, and Willamette Management Associates calculations.

Puget Sound Pilots Association

EXHIBIT 15b
PUGET SOUND PILOTS ASSOCIATION
COMPARATIVE ANALYSIS
SELECTED GUIDELINE PUBLICLY TRADED COMPANIES
DESCRIPTION OF THE GUIDELINE PUBLICLY TRADED COMPANIES
PANGAEA LOGISTICS SOLUTIONS, LTD.

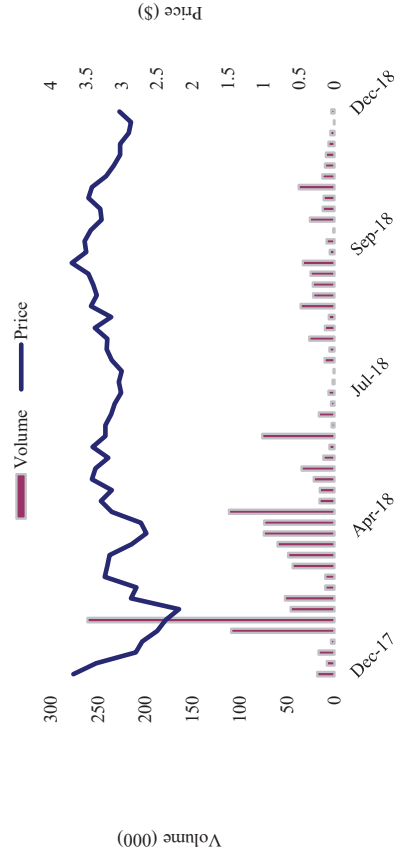
Business Description

Pangaea Logistics Solutions, Ltd., together with its subsidiaries, provides seaborne dry bulk logistics and transportation services to industrial customers worldwide. The company offers various dry bulk cargoes, including grains, coal, iron ore, pig iron, hot briquetted iron, bauxite, alumina, cement clinker, dolomite, and limestone. Its ocean logistics services comprise cargo loading, cargo discharge, vessel chartering, voyage planning, and technical vessel management. As of July 22, 2019, the company operated a fleet of 22 vessels. Pangaea Logistics Solutions, Ltd. was founded in 1996 and is based in Newport, Rhode Island.

Financial Information

	LTM	2018	2017	2016
	\$000	\$000	\$000	\$000
Cash & Equivalents	53,615	53,615	34,532	22,323
Total Assets	453,475	453,475	423,297	362,194
Long-Term Debt	141,059	141,059	142,631	107,638
Stockholders' Equity	233,367	233,367	210,656	176,677
Revenue	372,970	372,970	385,946	238,017
Gross Profit	71,036	71,036	56,079	39,773
EBITDA	51,360	51,360	42,261	29,005
Net Income	24,842	24,842	18,376	9,159
EBITDA Margin	13.8%	13.8%	10.9%	12.2%
Net Profit Margin	6.7%	6.7%	4.8%	3.8%

Stock Performance



Valuation Data

Market Value of Equity \$000	133,467
Market Value of Invested Capital \$000	302,897
LTM Net Income / MVE	19%
EBITDA / MVIC	17%

Definitions are presented in Schedule A.

[a] From Bloomberg.

Sources: S&P Capital IQ, FactSet, SEC Forms 10-Q and 10-K, and Willamette Management Associates calculations.

Puget Sound Pilots Association

EXHIBIT 15c
PUGET SOUND PILOTS ASSOCIATION
COMPARATIVE ANALYSIS
SELECTED GUIDELINE PUBLICLY TRADED COMPANIES
DESCRIPTION OF THE GUIDELINE PUBLICLY TRADED COMPANIES
FORWARD AIR CORPORATION

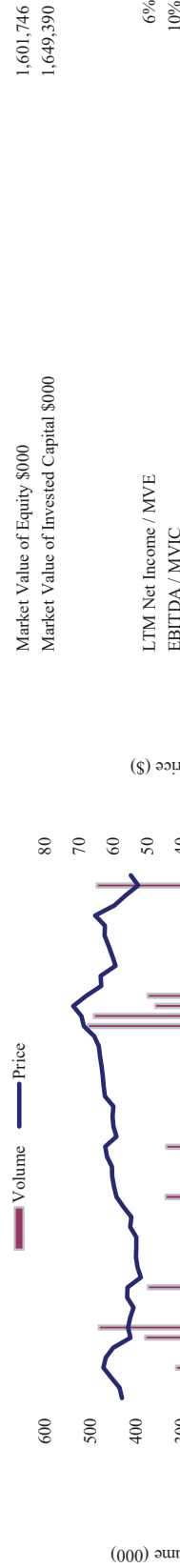
Business Description

Forward Air Corporation, together with its subsidiaries, operates as an asset-light freight and logistics company in the United States and Canada. The company operates through three segments: Expedited Freight, Intermodal, and Pool Distribution. The Expedited Freight segment provides expedited regional, inter-regional, and national less-than-truckload services; local pick-up and delivery services; and other services, which include final mile, truckload, shipment consolidation and deconsolidation, warehousing, customs brokerage, and other handling. It also offers expedited truckload brokerage, dedicated fleet, and high security and temperature-controlled logistics services. The Intermodal segment provides intermodal container drayage services; and contract, and container freight station warehouse and handling services. The Pool segment offers pool distribution services comprising managing high-frequency handling and distribution of time-sensitive products to various destinations through a network of terminals. Forward Air Corporation was founded in 1981 and is headquartered in Greeneville, Tennessee.

Financial Information

	LTM	2018	2017	2016
	\$000	\$000	\$000	\$000
Cash & Equivalents	25,657	25,657	3,893	8,511
Total Assets	760,215	760,215	692,622	641,291
Long-Term Debt	47,335	47,335	40,588	725
Stockholders' Equity	553,244	553,244	532,699	499,069
Revenue	1,320,886	1,320,886	1,169,346	1,030,210
Gross Profit	309,222	309,222	278,072	253,419
EBITDA	162,681	162,681	149,266	138,992
Net Income	92,337	92,337	88,294	47,732
EBITDA Margin	12.3%	12.3%	12.8%	13.5%
Net Profit Margin	7.0%	7.0%	7.6%	4.6%

Stock Performance



Valuation Data

Market Value of Equity \$000	1,601,746
Market Value of Invested Capital \$000	1,649,390
LTM Net Income / MVE	6%
EBITDA / MVIC	10%

Definitions are presented in Schedule A.

[a] From Bloomberg.

Sources: S&P Capital IQ, FactSet, and Willamette Management Associates calculations.

Puget Sound Pilots Association

EXHIBIT 15d
PUGET SOUND PILOTS ASSOCIATION
COMPARATIVE ANALYSIS
SELECTED GUIDELINE PUBLICLY TRADED COMPANIES
DESCRIPTION OF THE GUIDELINE PUBLICLY TRADED COMPANIES
NAVIOS MARITIME HOLDINGS INC.

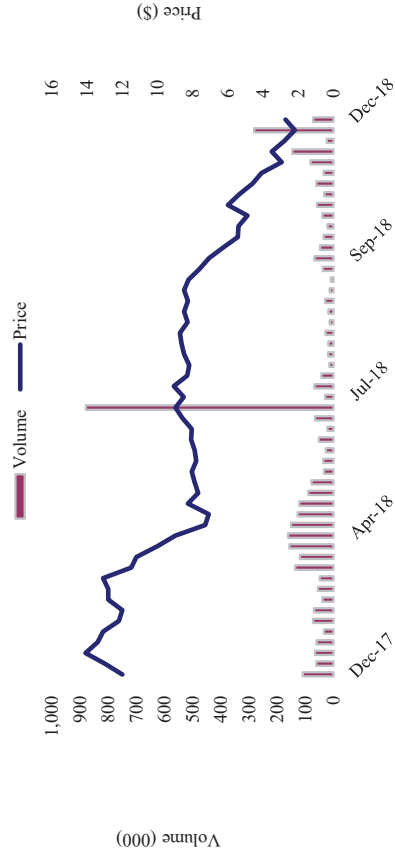
Business Description

Navios Maritime Holdings Inc. operates as a seaborne shipping and logistics company in North America, Europe, Asia, South America, and internationally. The company focuses on the transportation and transshipment of dry bulk commodities, including iron ores, coal, and grains. It operates through three segments: Dry Bulk Vessel Operations, Logistics Business, and Containers Business. The Dry Bulk Vessel Operations segment engages in the transportation and handling of bulk cargoes through the ownership, operation, and trading of vessels and freight. This segment charters its vessels to trading houses, producers, and government-owned entities. The Logistics Business segment operates ports and transfer station terminals, as well as upriver transport facilities in the Hidrovia region; and handles vessels, barges, and push boats. This segment provides its integrated transportation, storage, and related services through its port facilities, fleet of dry and liquid cargo barges, and product tankers to mineral and grain commodity providers, as well as to users of refined petroleum products. The Containers Business segment operates in the containership sector. The company's fleet consists of 61 vessels totaling 6.4 million deadweight tons. Navios Maritime Holdings Inc. is based in Monte Carlo, Monaco.

Financial Information

	LTM	2018	2017	2016
	\$000	\$000	\$000	\$000
Cash & Equivalents	150,774	150,774	134,190	141,378
Total Assets	2,682,496	2,682,496	2,629,981	2,752,895
Long-Term Debt	1,746,956	1,746,956	1,648,603	1,636,246
Stockholders' Equity	521,680	521,680	617,164	803,553
Revenue	505,686	505,686	463,049	419,782
Gross Profit	203,638	203,638	132,407	117,314
EBITDA	108,307	108,307	108,105	(115,332)
Net Income	(131,791)	(131,791)	(115,264)	(344,047)
EBITDA Margin	21.4%	21.4%	23.3%	-27.5%
Net Profit Margin	-26.1%	-26.1%	-24.9%	-82.0%

Stock Performance



Valuation Data

Market Value of Equity \$000	32,247
Market Value of Invested Capital \$000	1,848,254
LTM Net Income / MVE	NM
EBITDA / MVIC	6%

Definitions are presented in Schedule A.

[a] From Bloomberg.

Sources: S&P Capital IQ, FactSet, and Willamette Management Associates calculations.

Puget Sound Pilots Association

EXHIBIT 15e
PUGET SOUND PILOTS ASSOCIATION
COMPARATIVE ANALYSIS
SELECTED GUIDELINE PUBLICLY TRADED COMPANIES
DESCRIPTION OF THE GUIDELINE PUBLICLY TRADED COMPANIES
SAKER AVIATION SERVICES, INC.

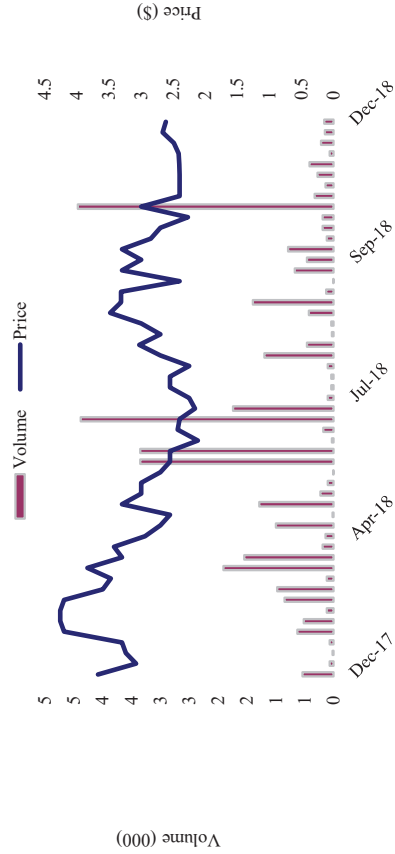
Business Description

Saker Aviation Services, Inc., through its subsidiaries, operates in the aviation services segment of the general aviation industry in the United States. The company serves as the operator of a heliport, a fixed base operation (FBO); a provider of aircraft maintenance and repair services (MRO); and a consultant for a seaplane base. It also provides ground-based services, such as fueling and aircraft storage for general aviation, commercial, and military aircraft, as well as other miscellaneous services. Its business activities are carried out as the operator of the Downtown Manhattan (New York) Heliport; as a FBO and MRO at the Garden City (Kansas) Regional Airport; and as a consultant to the operator of a seaplane base in New York City. The company was formerly known as FirstFlight, Inc. and changed its name to Saker Aviation Services, Inc. in September 2009. Saker Aviation Services, Inc. was founded in 2003 and is headquartered in New York, New York.

Financial Information

	LTM \$000	2018 \$000	2017 \$000	2016 \$000
Cash & Equivalents	2,839	2,839	1,725	2,192
Total Assets	6,341	6,341	6,549	6,967
Long-Term Debt	173	173	113	458
Stockholders' Equity	5,347	5,347	5,177	4,834
Revenue	11,118	11,118	12,016	14,691
Gross Profit	5,052	5,052	6,404	8,099
EBITDA	998	998	1,620	2,300
Net Income	312	312	478	880
EBITDA Margin	9.0%	9.0%	13.5%	15.7%
Net Profit Margin	2.8%	2.8%	4.0%	6.0%

Stock Performance



Valuation Data

Market Value of Equity \$000	2,635
Market Value of Invested Capital \$000	2,866
LTM Net Income / MVE	12%
EBITDA / MVIC	35%

Definitions are presented in Schedule A.

[a] From Bloomberg.

Sources: S&P Capital IQ, FactSet, and Williamette Management Associates calculations.

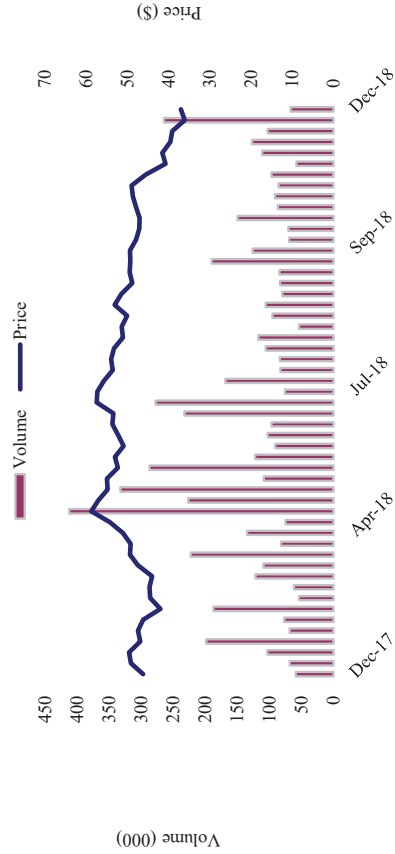
Puget Sound Pilots Association

EXHIBIT 15f
PUGET SOUND PILOTS ASSOCIATION
COMPARATIVE ANALYSIS
SELECTED GUIDELINE PUBLICLY TRADED COMPANIES
DESCRIPTION OF THE GUIDELINE PUBLICLY TRADED COMPANIES
SEACOR HOLDINGS INC.

Business Description

SEACOR Holdings Inc. engages in transportation and logistics, risk management consultancy, and other businesses in the United States and internationally. The company operates through Ocean Transportation & Logistics Services, Inland Transportation & Logistics Services, Witt O'Brien's, and Other segments. The Ocean Transportation & Logistics Services segment owns and operates a fleet of bulk transportation, port and infrastructure, and logistics assets. It operates carriers for the United States coastwise for trade of crude oil, petroleum, and chemical products; and dry bulk vessels. This segment provides deep-sea vessels docking, ocean towing, and oil terminal support and bunkering services; liner, short-sea, rail car, and project cargo transportation and logistics solutions; door-to-door solutions; and technical ship management services, as well as operates pure car/truck carriers. The Inland Transportation & Logistics Services segment offers river transportation equipment for moving agricultural and industrial commodities and containers, and petroleum products; and owns and operates multi-modal terminal locations. It also provides management services related to barge and towboat operations. The Witt O'Brien's segment provides crisis and emergency management services for the public and private sectors. It serves markets in the areas of critical national infrastructure, including government, energy, transportation, healthcare, and education. The Other segment designs, develops, and maintains alternative energy and power solutions; and offers liquefied natural gas and compressed natural gas fuel supply and logistics to commercial, industrial, agricultural, and transportation customers. This segment also engages in the selling, storage, and maintenance of aviation; agricultural commodity trading and logistics businesses; and trading and merchandising of sugar and other commodities. SEACOR Holdings Inc. was founded in 1989 and is based in Fort Lauderdale, Florida.

Stock Performance



Financial Information

	LTM	2018	2017	2016
	\$000	\$000	\$000	\$000
Cash & Equivalents	177,528	177,528	284,989	335,024
Total Assets	1,471,024	1,471,024	1,613,336	2,862,321
Long-Term Debt	346,128	346,128	501,505	631,084
Stockholders' Equity	835,842	835,842	753,361	1,196,268
Revenue	835,750	835,750	650,847	524,163
Gross Profit	243,902	243,902	217,010	165,210
EBITDA	148,453	148,453	145,709	60,346
Net Income	33,331	33,331	19,802	(28,399)
EBITDA Margin	17.8%	17.8%	22.4%	11.5%
Net Profit Margin	4.0%	4.0%	3.0%	-5.4%

Valuation Data

Market Value of Equity \$000	675,133
Market Value of Invested Capital \$000	1,029,758
LTM Net Income / MVE	5%
EBITDA / MVIC	14%

Definitions are presented in Schedule A.

[a] From Bloomberg.

Sources: S&P Capital IQ, FactSet, and Willamette Management Associates calculations.

Puget Sound Pilots Association

EXHIBIT 15g
PUGET SOUND PILOTS ASSOCIATION
COMPARATIVE ANALYSIS
SELECTED GUIDELINE PUBLICLY TRADED COMPANIES
DESCRIPTION OF THE GUIDELINE PUBLICLY TRADED COMPANIES
EXPEDITORS INTERNATIONAL OF WASHINGTON, INC.

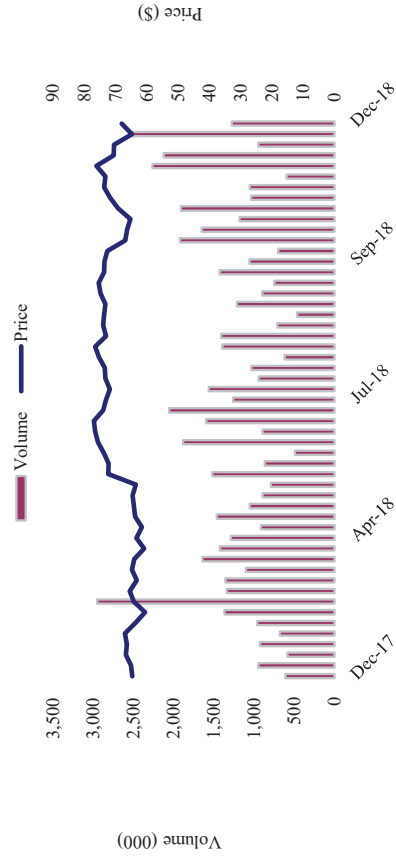
Business Description

Expeditors International of Washington, Inc. provides logistics services in the Americas, North Asia, South Asia, Europe, the Middle East, Africa, and India. The company offers airfreight services, such as air freight consolidation and forwarding; ocean freight and ocean services, including ocean freight consolidation, direct ocean forwarding, and order management; customs brokerage, intra-continental ground transportation and delivery, and warehousing and distribution services; and customs clearance, purchase order management, vendor consolidation, time-definite transportation services, temperature-controlled transit, cargo insurance, and other logistics solutions. It acts as a freight consolidator or as an agent for the airline, which carries the shipment. The company also provides ancillary services that include preparation of shipping and customs documentation, packing, crating, insurance services, negotiation of letters of credit, and the preparation of documentation to comply with local export laws. Its customers include retailing and wholesaling, electronics, and industrial and manufacturing companies. Expeditors International of Washington, Inc. was founded in 1979 and is headquartered in Seattle, Washington.

Financial Information

	LTM	2018	2017	2016
	\$000	\$000	\$000	\$000
Cash & Equivalents	923,735	923,735	1,051,099	974,435
Total Assets	3,314,559	3,314,559	3,117,008	2,790,871
Long-Term Debt	-	-	-	-
Stockholders' Equity	1,987,720	1,987,720	1,994,373	1,847,213
Revenue	8,138,365	8,138,365	6,920,948	6,098,037
Gross Profit	1,074,301	1,074,301	932,337	897,589
EBITDA	872,348	872,348	763,905	733,652
Net Income	619,790	619,790	487,653	432,533
EBITDA Margin	10.7%	10.7%	11.0%	12.0%
Net Profit Margin	7.6%	7.6%	7.0%	7.1%

Stock Performance



Valuation Data

Market Value of Equity \$000	11,751,659
Market Value of Invested Capital \$000	11,751,659
LTM Net Income / MVE	5%
EBITDA / MVIC	7%

Definitions are presented in Schedule A.
[a] From Bloomberg.
Sources: S&P Capital IQ, FactSet, and Willamette Management Associates calculations.

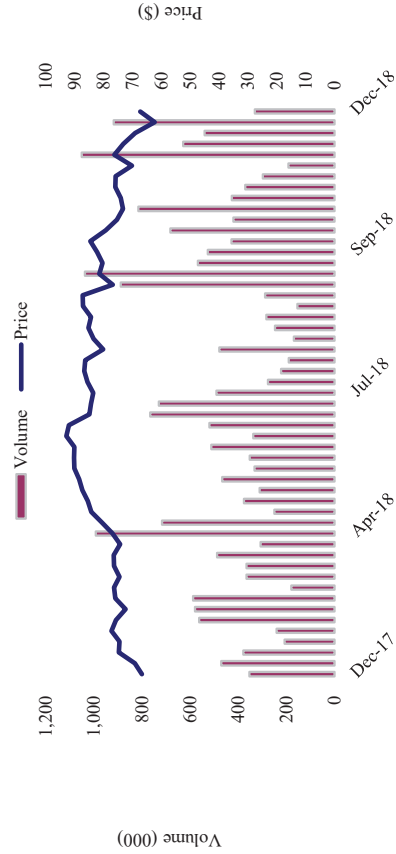
Puget Sound Pilots Association

EXHIBIT 15h
PUGET SOUND PILOTS ASSOCIATION
COMPARATIVE ANALYSIS
SELECTED GUIDELINE PUBLICLY TRADED COMPANIES
DESCRIPTION OF THE GUIDELINE PUBLICLY TRADED COMPANIES
KIRBY CORPORATION

Business Description

Kirby Corporation operates domestic tank barges in the United States. Its Marine Transportation segment provides marine transportation services and towing vessels transporting bulk liquid products, as well as operates tank barges throughout the Mississippi River System, on the Gulf Intra-coastal Waterway, coastwise along three United States coasts, and in Alaska and Hawaii. This segment also transports petrochemicals, black oil, refined petroleum products, and agricultural chemicals by tank barges; and operates offshore dry-bulk barge and tugboat units that are engaged in the offshore transportation of dry-bulk cargoes in the United States coastal trade. As of December 31, 2019, this segment owned and operated 1,053 inland tank barges with 23.4 million barrels of capacity, 299 inland towboats, 49 coastal tank barges with 4.7 million barrels of capacity, 47 coastal tugboats, 4 offshore dry-bulk cargo barges, 4 offshore tugboats, and 1 docking tugboat. The company's Distribution and Services segment sells replacement parts; provides service mechanics to overhaul and repair engines, transmissions, reduction gears, and related oilfield services equipment; rebuilds component parts or diesel engines, transmissions and reduction gears, and related equipment used in oilfield services, marine, power generation, on-highway, and other industrial applications; rents industrial compressors, railcar movers, and high capacity lift trucks; and manufactures and remanufactures oilfield service equipment, including pressure pumping units. It serves oilfield service, on-highway transportation, marine transportation, commercial fishing, construction, and power generation companies, as well as oil and gas operators and producers, and the United States government. The company was formerly known as Kirby Exploration Company, Inc. and changed its name to Kirby Corporation in 1990. Kirby Corporation was founded in 1921 and is headquartered in Houston, Texas.

Stock Performance



Financial Information

	LTM \$000	2018 \$000	2017 \$000	2016 \$000
Cash & Equivalents	7,800	7,800	20,102	5,634
Total Assets	5,871,594	5,871,594	5,127,427	4,289,895
Long-Term Debt	1,410,169	1,410,169	992,403	722,802
Stockholders' Equity	3,216,301	3,216,301	3,114,223	2,412,867
Revenue	2,970,697	2,970,697	2,214,418	1,770,673
Gross Profit	809,751	809,751	656,320	646,007
EBITDA	477,852	477,852	407,566	447,916
Net Income	142,713	142,713	115,424	143,784
EBITDA Margin	16.1%	16.1%	18.4%	25.3%
Net Profit Margin	4.8%	4.8%	5.2%	8.1%

Valuation Data

Market Value of Equity \$000	4,032,574
Market Value of Invested Capital \$000	5,442,762
LTM Net Income / MVE	4%
EBITDA / MVIC	9%

Definitions are presented in Schedule A.
[a] From Bloomberg.
Sources: S&P Capital IQ, FactSet, and Willamette Management Associates calculations.

EXHIBIT 16a
PUGET SOUND PILOTS ASSOCIATION
COMPARATIVE ANALYSIS
FAIR AND REASONABLE RATES OF RETURN
BASED ON TRANSPORTATION INDUSTRY SALE TRANSACTIONS
RETURN ON INVESTMENT
EARNINGS/MVIC

DealStats Transactions	10th Percentile %	25th Percentile %	Median %	75th Percentile %	90th Percentile %
All SIC Codes	14	23	34	48	65
SIC Code: 41XX	30	37	43	61	77
SIC Code: 42XX	15	24	32	46	67
SIC Code: 43XX	19	19	19	19	19
SIC Code: 44XX	6	12	16	22	31
SIC Code: 45XX	12	12	20	35	44
SIC Code: 46XX	1	1	2	2	2
SIC Code: 47XX	14	22	37	48	57
Minimum	1	1	2	2	2
Maximum	30	37	43	61	77
Median	14	21	26	35	44

Puget Sound Pilots Association
Return on Total Invested Capital [a]

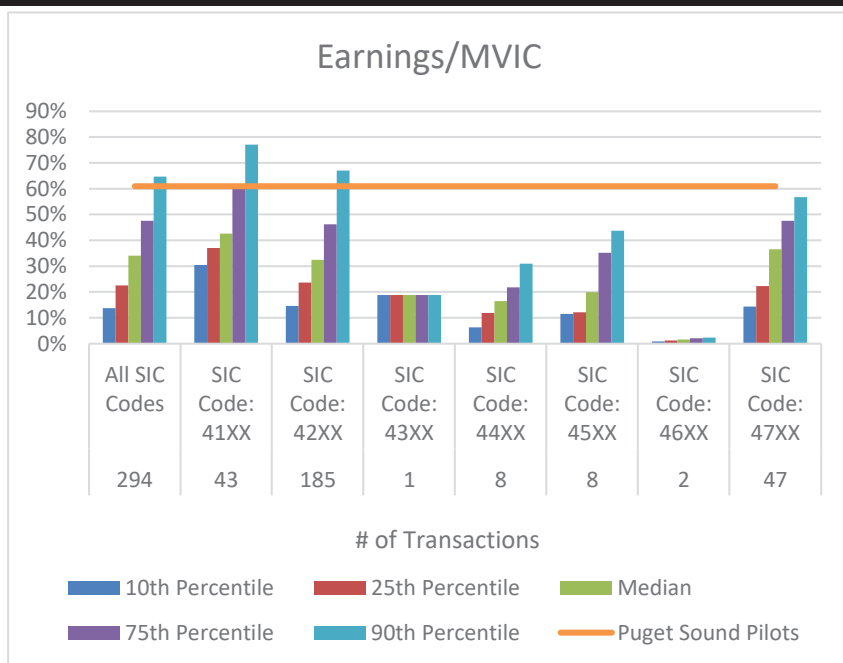
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Definitions are presented in Schedule A.

[a] As presented in Exhibit 8.

Sources: DealStats; Exhibit 8; and Willamette Management Associates calculations.

EXHIBIT 16b
PUGET SOUND PILOTS ASSOCIATION
COMPARATIVE ANALYSIS
FAIR AND REASONABLE RATES OF RETURN
BASED ON TRANSPORTATION INDUSTRY SALE TRANSACTIONS
RETURN ON INVESTMENT
EARNINGS/MVIC



Definitions are presented in Schedule A.

Sources: DealStats; Exhibit 8; and Willamette Management Associates calculations.