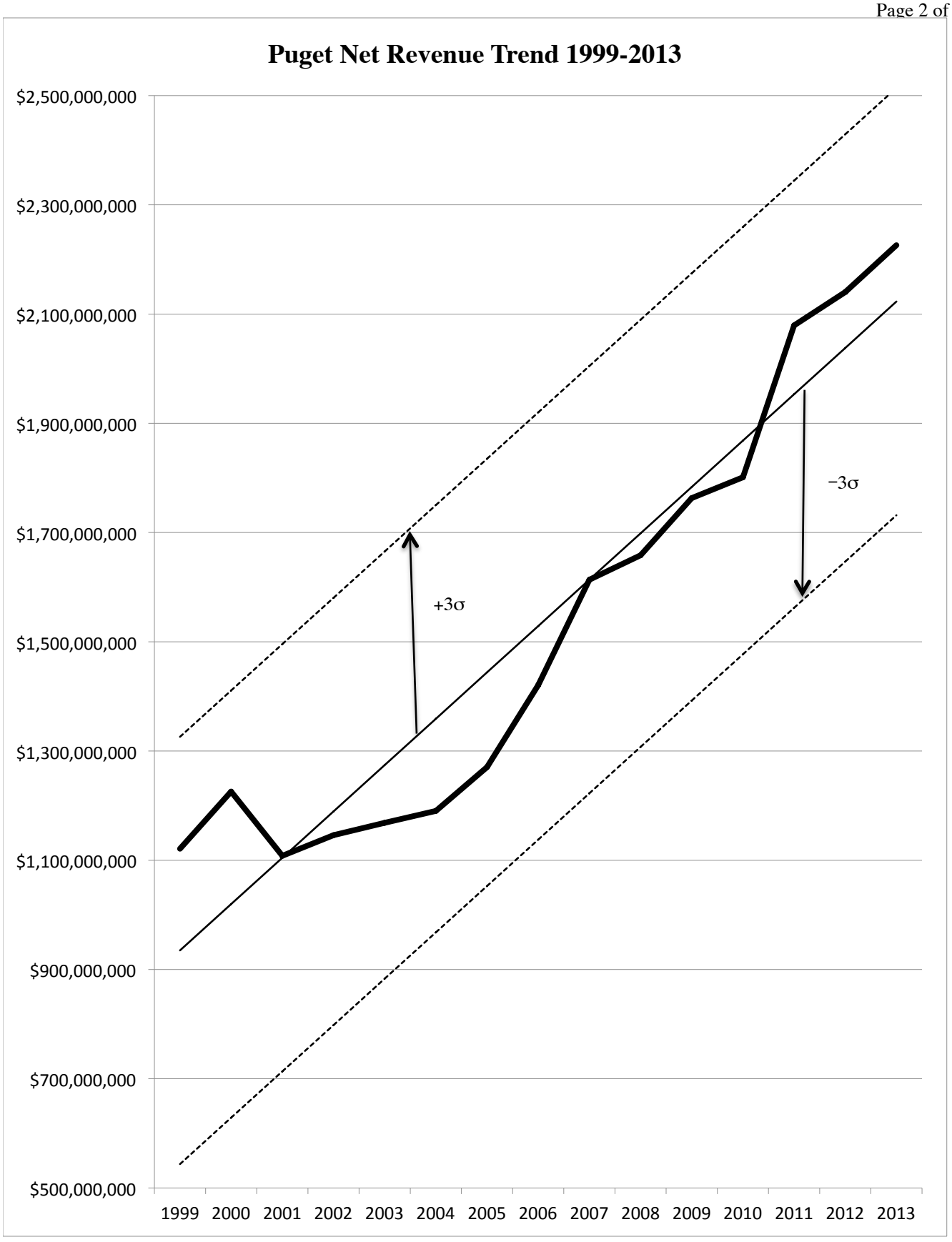
PUGET SOUND ENERGY
COMBINED ELECTRIC AND GAS OPERATIONS
Multiple Regression Analysis of Historical Net Revenues

Year	Puget Sound Energy Net Revenues Combined Ops.* Y	Washington Gross State Prod.† [000,000] X1	Heating Degree Days• X2
1999	$1,121,105,190	$294,884	437.07
2000	$1,225,762,229	$298,577	434.67
2001	$1,108,174,442	$291,842	433.26
2002	$1,146,048,755	$296,831	428.64
2003	$1,168,572,239	$301,798	394.76
2004	$1,190,336,470	$306,212	385.03
2005	$1,270,506,135	$325,180	393.77
2006	$1,420,926,787	$335,863	395.25
2007	$1,613,602,426	$354,616	423.08
2008	$1,658,411,319	$358,158	444.18
2009	$1,763,137,026	$350,125	424.57
2010	$1,801,306,461	$356,398	401.31
2011	$2,079,150,448	$358,869	445.50
2012	$2,140,254,314	$371,156	409.49
2103	$2,226,164,523	$381,017	381.03

	X2	X1	Constant
Coefficients	1214778.786	12174.45558	-3018929429
Std. Error	1639696.221	1156.763433	833308448.6
R-squared	0.902910203	134032668.6	#N/A
F-statistic	55.79846062	12	#N/A

* Data from Company response to PC DR 006.
† Data from U.S. Department of Commerce, Bureau of Labor Statistics



Data from Company response to PC DR-006.

PUGET SOUND ENERGY
COMBINED UTILITY OPERATIONS
VARIANCE ANALYSIS

Year	X	Y Net Revenues	x X-Xavg.	y Y-Yavg	x-squared	xy	y-squared
1999	1	1121105190	-7	-407,792,061	49	2854544427	166,294,364,960,255,000
2000	2	1225762229	-6	-303,135,022	36	1818810132	91,890,841,522,522,500
2001	3	1108174442	-5	-420,722,809	25	2103614045	177,007,681,956,754,000
2002	4	1146048755	-4	-382,848,496	16	1531393984	146,572,970,838,416,000
2003	5	1168572239	-3	-360,325,012	9	1080975036	129,834,114,224,757,000
2004	6	1190336470	-2	-338,560,781	4	677121561.9	114,623,402,386,189,000
2005	7	1270506135	-1	-258,391,116	1	258391115.9	66,765,968,793,273,300
2006	8	1420926787	0	-107,970,464	0	0	11,657,621,081,979,200
2007	9	1613602426	1	84,705,175	1	84705175.07	7,174,966,683,074,640
2008	10	1658411319	2	129,514,068	4	259028136.1	16,773,893,827,177,100
2009	11	1763137026	3	234,239,775	9	702719325.2	54,868,272,223,282,600
2010	12	1801306461	4	272,409,210	16	1089636840	74,206,777,729,145,300
2011	13	2079150448	5	550,253,197	25	2751265985	302,778,580,882,088,000
2012	14	2140254314	6	611,357,063	36	3668142378	373,757,458,561,500,000
2013	15	2226164523	7	697,267,272	49	4880870904	486,181,648,695,291,000
Sum	120	22,933,458,764			280	23,761,219,045	2,220,388,564,365,700,000
Average	8	1,528,897,251					

slope (b) = (Σxy)/(Σ x-squared) =	84,861,496.6	
intercept (a) = Yavg. - (b)Xavg. =	850,005,278.2	
r-squared = (b)(Σxy)/(Σ y-squared) =	0.908135018	
variance of y given x = (1/n-2)(Σ y-squared - bΣxy) =	16,997,996,285,097,200	11,048,697,585,313,100
standard deviation of y given x = (variance)1/2 =	130,376,364	105,112,785
3 standard deviation units = S.D. x 3 =	391,129,092	315,338,355

Year	Actual Net Revenues	Predicted Net Revenues	+3s	-3s
1999	$1,121,105,190	$934,866,775	$1,325,995,867	$543,737,683
2000	$1,225,762,229	$1,019,728,271	$1,410,857,363	$628,599,179
2001	$1,108,174,442	$1,104,589,768	$1,495,718,860	$713,460,676
2002	$1,146,048,755	$1,189,451,265	$1,580,580,357	$798,322,173
2003	$1,168,572,239	$1,274,312,761	$1,665,441,853	$883,183,669
2004	$1,190,336,470	$1,359,174,258	$1,750,303,350	$968,045,166
2005	$1,270,506,135	$1,444,035,754	$1,835,164,846	$1,052,906,662
2006	$1,420,926,787	$1,528,897,251	$1,920,026,343	$1,137,768,159
2007	$1,613,602,426	$1,613,758,748	$2,004,887,839	$1,222,629,656
2008	$1,658,411,319	$1,698,620,244	$2,089,749,336	$1,307,491,152
2009	$1,763,137,026	$1,783,481,741	$2,174,610,833	$1,392,352,649
2010	$1,801,306,461	$1,868,343,237	$2,259,472,329	$1,477,214,145
2011	$2,079,150,448	$1,953,204,734	$2,344,333,826	$1,562,075,642
2012	$2,140,254,314	$2,038,066,230	$2,429,195,322	$1,646,937,139
2013	$2,226,164,523	$2,122,927,727	$2,514,056,819	$1,731,798,635

Reference: Statistical Inference for Management and Economics, Hemtoberger, et al, Allyn and Bacon, 1975, pp. 284-287.

PUGET SOUND ENERGY
COMBINED UTILITY OPERATIONS
COST OF EQUITY IMPACT OF RISK REDUCTION
1999-2013

Assume: With Decoupling, Historical Net Revenue Variance Reduced 35%

1) Standard Devition of Annual Revenues

s = $130,376,364		s = one standard deviation unit (historical)
3s = $391,129,092		3s = 3 standard deviation units (historical)
3s* = $315,338,355 =	2.4187s	3s* = 3 standard deviation units (35% variance)

2) Probability (p) Difference in Negative Outcomes Between 3 Standard Deviation Units (Historical), and 3 Standard Deviation Units (Variance Reduced 35%)

p(3s) =	0.4987	
less p(3s*, 2.4187s) =	0.4922	
	0.0065	or 0.65% of average revenues

3) Basis Point Impact of 0.65% Reduction in Average Annual Net Revenues

a) Average Annual Net Revenues 1999-2013 = $1,528.9 Million
x .0065
Annual Net Revenue Reduction = $9.938 Million

b) Average PSE Rate Base 1999/2013 = $4,569.370 Million
Average Common Equity Ratio 1999/2013 = 42.21%
Then, a 1% Equity Return Reduction Produces A Revenue Reduction Of:
= (1% x 42.21% x $4,569.370 M)/(1-35% Tax Rate), or
= $29.67 Million

c) If a 1% Equity Return Reduction Reduces Annual Revenues $29.67 Million,
Then, A $9.938 Million reduction due to lower volatility = 0.335% or 33.5 Basis Points