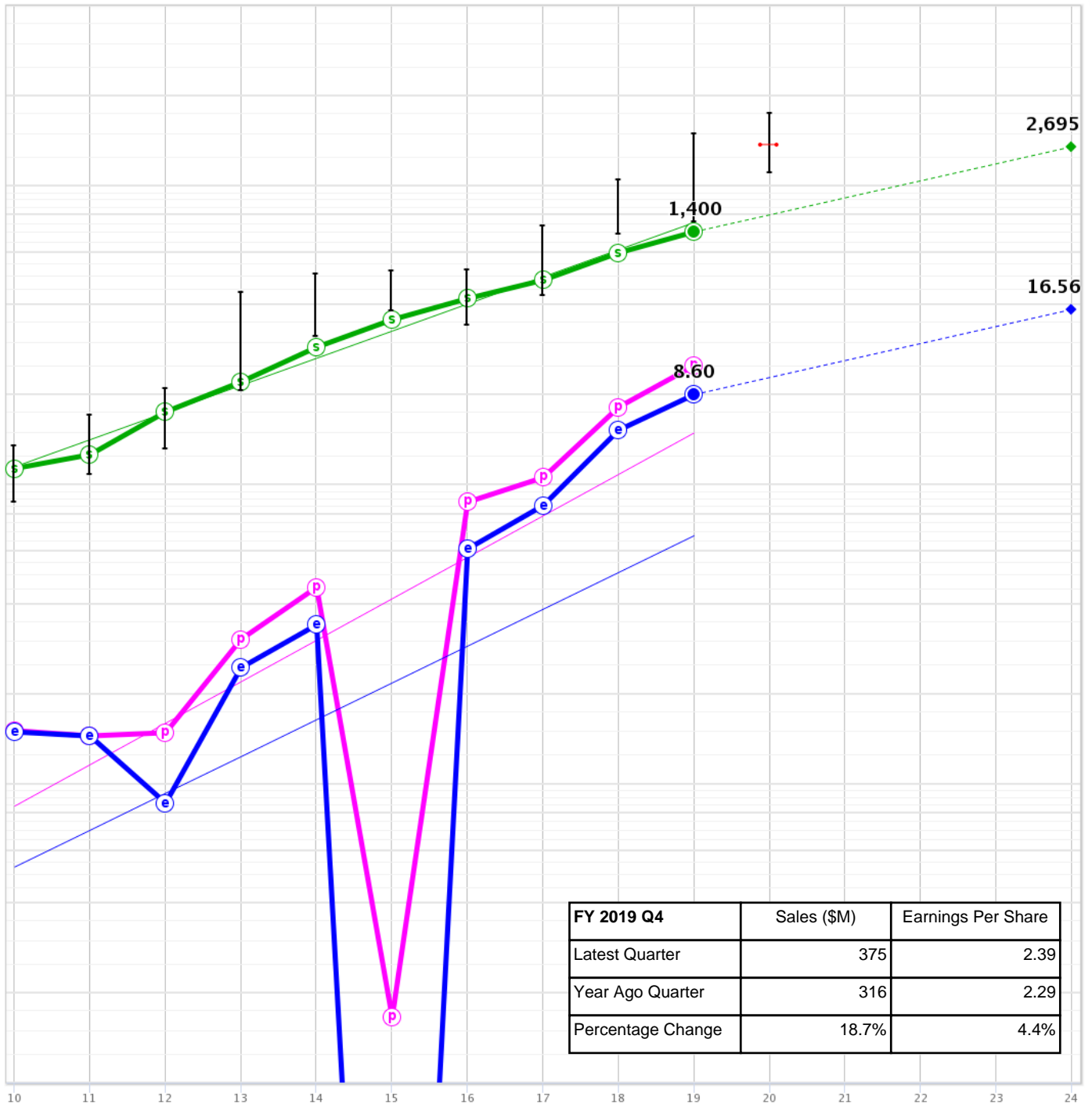


Company	CoStar Gr	Date	04/07/20
Prepared by	HENRIKSON	Data taken from	BI Stock Data
Where traded	NAS	Industry	Real Estate Services
Capitalization --- Outstanding Amounts	Reference		
Preferred (\$M)	0.0	% Insiders	% Institution
Common (M Shares)	36.7	3.0	76.0
Debt (\$M)	163.4	% to Tot Cap	4.6 % Pot Dil 0.9

Stock Selection Guide

Symbol: CSGP

1 VISUAL ANALYSIS of Sales, Earnings, and Price



- | | | | |
|-----------------------------------|-------|--|-------|
| (1) Historical Sales Growth | 23.3% | (3) Historical Earnings Per Share Growth | 32.8% |
| (2) Estimated Future Sales Growth | 14.0% | (4) Estimated Future Earnings Per Share Growth | 14.0% |

2 EVALUATING Management

CoStar Gr

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Last 5 Year Avg.
Pre-tax Profit on Sales	10.4%	9.0%	6.6%	10.8%	12.3%	0.4%	16.3%	17.1%	23.8%	27.9%	17.1%
% Earned on Equity	3.5%	2.4%	1.3%	3.4%	3.2%	-0.2%	5.3%	7.5%	8.1%	9.6%	6.0%
% Debt To Capital	0.0%	0.0%	17.1%	14.2%	20.3%	18.7%	17.0%	0.0%	0.0%	4.6%	8.1%

3 PRICE-EARNINGS HISTORY as an indicator of the future

This shows how stock prices have fluctuated with earnings and dividends. It is building block for translating earnings into future stock prices.

CLOSING PRICE 589.64 (04/07/20)

HIGH THIS YEAR 746.70

LOW THIS YEAR 473.91

	A	B	C	D	E	F	G	H
Year	Price		Earnings	Price Earnings Ratio		Dividend	% Payout	% High Yield
	High	Low	Per Share	High A / C	Low B / C	Per Share	F / C * 100	F / B * 100
2015	223.5	163.5	-0.11	NMF	NMF	0.00	0.0	0.0
2016	224.8	146.5	2.62	85.8	55.9	0.00	0.0	0.0
2017	314.7	184.9	3.66	86.0	50.5	0.00	0.0	0.0
2018	448.4	295.4	6.54	68.6	45.2	0.00	0.0	0.0
2019	639.4	325.1	8.60	74.4	37.8	0.00	0.0	0.0
AVERAGE		223.1		71.5	47.4		0.0	
CURRENT/TTM			8.60			0.00	0.0	
AVERAGE PRICE EARNINGS RATIO: 59.4				CURRENT PRICE EARNINGS RATIO: 68.6				

4 EVALUATING RISK and REWARD over the next 5 years

Assuming one recession and one business boom every 5 years, calculations are made of how high and how low the stock might sell. The upside-downside ratio is the key to evaluating risk and reward.

A HIGH PRICE - NEXT 5 YEARS

Avg. High P/E 63.0 X Estimate High Earnings/Share 16.56 = Forecasted High Price \$ 1,043.2

B LOW PRICE - NEXT 5 YEARS

(a) Avg. Low P/E 47.4 X Estimate Low Earnings/Share 8.60 = Forecasted Low Price \$ 407.6

(b) Avg. Low Price of Last 5 Years 223.1

(c) Recent Market Low Price 295.4

(d) Price Dividend Will Support $\frac{\text{Indicated Dividend}}{\text{High Yield}} = \frac{0.00}{0.00\%} = 0.0$

Selected Forecasted Low Price \$ 407.6

C ZONING using 25%-50%-25%

Forecasted High Price 1,043.2 Minus Forecasted Low Price 407.6 = 635.6 Range. 25% of Range 158.9

Buy Zone 407.6 to 566.5

Hold Zone 566.5 to 884.3

Sell Zone 884.3 to 1,043.2

Present Market Price of 589.64 is in the **HOLD** Zone

D UPSIDE DOWNSIDE RATIO (POTENTIAL GAIN VS. RISK OR LOSS)

$\frac{\text{High Price} - \text{Present Price}}{\text{Present Price} - \text{Low Price}} = \frac{1,043.2 - 589.64}{589.64 - 407.6} = \frac{453.55}{182.04} = 2.5$ To 1

E PRICE TARGET (Note: This shows the potential market price appreciation over the next five years in simple interest terms.)

$\frac{\text{High Price} - \text{Closing Price}}{\text{Closing Price}} = \frac{1,043.2 - 589.64}{589.64} = 1.7692$ X 100 = 176.92 - 100 = 76.9 % Appreciation

5 5-YEAR POTENTIAL

This combines price appreciation with dividend yield to get an estimate of total return. It provides a standard for comparing income and growth stocks.

A $\frac{\text{Indicated Annual Dividend}}{\text{Closing Price}} = \frac{0.00}{589.64} = 0.0000 = 0.0\%$ Current Yield

B AVERAGE YIELD - USING FORECAST HIGH P/E

$\frac{\text{Avg. \% Payout}}{\text{Forecast High PE}} = \frac{0.0\%}{63.00} = 0.0\%$

AVERAGE YIELD - USING FORECAST AVERAGE P/E

$\frac{\text{Avg. \% Payout}}{\text{Forecast Average PE}} = \frac{0.0\%}{55.20} = 0.0\%$

C COMPOUND ANNUAL RETURN - USING FORECAST HIGH P/E

Annualized Appreciation 12.1 %
Average Yield 0.0 %
Annualized Rate of Return 12.1 %

COMPOUND ANNUAL RETURN - USING FORECAST AVG P/E

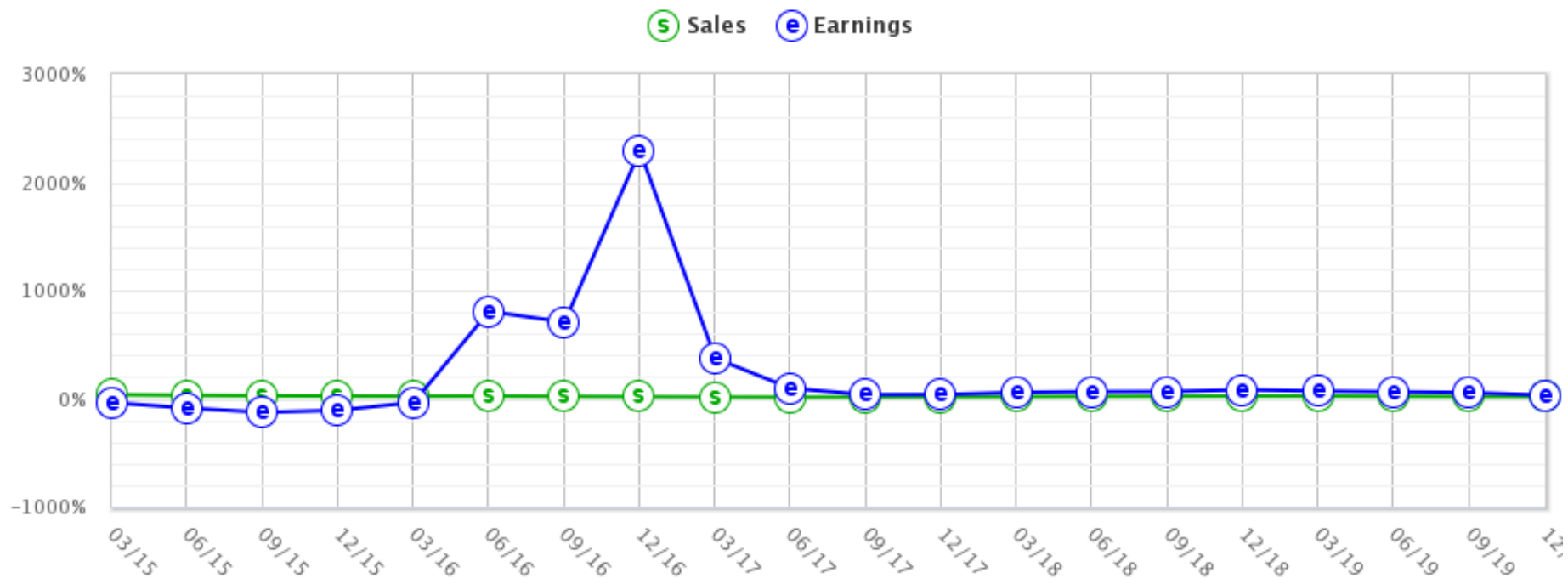
Annualized Appreciation 9.2 %
Average Yield 0.0 %
Annualized Rate of Return 9.2 %

Notes: CSGP 4/6/20

Date	Subject	Description	Type
04/08/20	judgements for 1st qtr study	CoStar has a near monopoly on data analytics for rental property and is aggressively enlarging its Apts.com and similar platforms aimed at multifamily dwellings. Morningstar rates its founder and leader as exemplary. Analysts are enthusiastic about its growth prospects, but cautious about its high P/E, the business impact of the coronavirus, and its price volatility. My judgments are based on a midrange of these analysts (and BI member) sentiments. Sales & EPS growth rates conservatively estimated as equal and mid-range 14%; Hi price, used analysts median P/E of 63, Low price, used 5 yr average low P/E of 47.4. This results in a share price that hasn't been this low in 2 years, but these are unusual times. Analysts, considering the times and high P/E have mixed recommendations: VL says Buy (Timeliness=1), as does the Nasdaq Consensus, and Manifest gives it 4 stars. Morningstar suggests Hold, as do CRFA and Zack's consensus. So, my study with a Hold concurs with the latter.	Study
02/21/20	CSGP VL - 1st since buying in Dec. 2019	ADDITIONAL INFORMATION: CoStar Group, Inc., founded in 1987, is a leading provider of commercial real estate information, analytics, and online marketplaces. Properties include LoopNet, the most heavily trafficked commercial real estate marketplace on the Web (with over 10 million registered members), as well as the apartment resource sites Apartments.com, ApartmentFinder.com, and ApartmentHomeLiving.com. Has about 3,700 employees.	Community

Quarterly Growth Trend Data

Graph: Trailing 4 Quarters, Last 5 Years of Data



Quarterly Data									Last 12 Months Data								
Period	EPS		Pre-Tax Profit			Sales		Income Tax Rate	EPS	Pre-Tax Profit		Sales	Income Tax		%Change		
	\$	%Change	\$ Mil	%Sales	%Change	\$ Mil	%Change	\$		\$ Mil	%Sales	\$ Mil	%Rate	EPS	Pre-Tax Profit	Sales	
12/19	2.39	4.4	114.3	30.5	4.3	374.7	18.7	23.1	8.60	390.9	27.9	1,399.7	75.6	19.4	31.5	37.7	17.4
09/19	2.15	33.5	98.9	28.0	35.5	352.8	15.5	20.5	8.50	386.2	28.8	1,340.6	75.4	19.5	55.4	73.1	18.6
06/19	1.73	44.2	80.0	23.3	75.1	343.8	15.7	21.0	7.96	360.3	27.9	1,293.3	69.4	19.3	62.4	75.5	20.6
03/19	2.33	61.8	97.7	29.7	75.3	328.4	20.0	12.8	7.43	326.0	26.2	1,246.5	49.1	15.1	69.6	75.8	23.1
12/18	2.29	87.7	109.6	34.7	125.0	315.6	24.2	23.8	6.54	284.0	23.8	1,191.8	38.1	13.4	80.7	72.1	23.5
09/18	1.61	54.8	73.0	23.9	32.3	305.5	23.4	19.5	5.47	223.1	19.7	1,130.3	21.8	9.8	65.3	37.8	21.6
06/18	1.20	76.5	45.7	15.4	77.2	297.0	25.2	4.1	4.90	205.3	19.1	1,072.3	29.6	14.4	63.9	42.4	19.8
03/18	1.44	111.8	55.7	20.4	57.4	273.7	20.8	6.3	4.38	185.4	18.3	1,012.4	31.3	16.9	57.0	28.6	17.1
12/17	1.22	34.1	48.7	19.2	7.0	254.0	16.3	9.2	3.62	165.1	17.1	965.2	40.8	24.7	37.6	20.8	15.2
09/17	1.04	44.4	55.2	22.3	47.3	247.5	16.4	38.1	3.31	161.9	17.4	929.6	50.4	31.1	36.2	30.2	14.4

Quarterly Growth Trend Data

Graph: Trailing 4 Quarters, Last 5 Years of Data

Quarterly Data									Last 12 Months Data								
Period	EPS		Pre-Tax Profit			Sales		Income Tax Rate	EPS	Pre-Tax Profit		Sales	Income Tax		%Change		
	\$	%Change	\$ Mil	%Sales	%Change	\$ Mil	%Change			\$	\$ Mil		%Sales	\$ Mil	%Rate	EPS	Pre-Tax Profit
06/17	0.68	41.7	25.8	10.9	-0.1	237.2	14.6	14.0	2.99	144.2	16.1	894.7	44.9	31.1	94.2	71.3	13.4
03/17	0.68	30.8	35.4	15.6	27.0	226.6	13.4	37.5	2.79	144.2	16.7	864.4	54.2	37.6	372.9	300.4	14.9
12/16	0.91	28.2	45.5	20.9	37.0	218.3	13.1	35.0	2.63	136.7	16.3	837.6	52.2	38.2	2,291.7	5,194.9	17.7
09/16	0.72	523.5	37.4	17.6	1,460.5	212.7	12.5	38.0	2.43	124.4	15.3	812.3	46.2	37.1	707.5	1,416.1	20.4
06/16	0.48	202.1	25.8	12.5	215.6	206.9	21.2	39.7	1.54	84.2	10.7	788.7	3.3	3.9	805.9	495.8	23.5
03/16	0.52	373.7	27.9	14.0	601.7	199.7	25.6	40.0	0.59	36.0	4.8	752.5	0.8	2.3	-35.9	-27.5	22.2
12/15	0.71	65.1	33.2	17.2	56.7	193.0	23.6	30.8	-0.12	2.6	0.4	711.8	-0.3	-10.3	-108.3	-96.4	23.6
09/15	-0.17	-142.5	-2.8	-1.5	-113.2	189.1	23.5	-94.8	-0.40	-9.5	-1.4	674.9	0.9	-9.4	-127.2	-113.5	26.0
06/15	-0.47	-267.9	-22.3	-13.1	-269.1	170.7	15.5	33.0	0.17	14.1	2.2	638.8	3.4	23.7	-88.4	-78.9	29.1
03/15	-0.19	-155.9	-5.6	-3.5	-135.5	159.0	33.5	-10.3	0.92	49.7	8.1	615.9	12.4	24.9	-37.4	-26.3	35.1
12/14	0.43	-4.4	21.2	13.6	5.5	156.1	35.0	34.3	1.45	70.9	12.3	575.9	26.2	36.9	39.4	49.2	30.6
09/14	0.40	2.6	20.8	13.6	15.2	153.1	36.3	37.8	1.47	69.8	13.0	535.5	26.1	37.4	93.4	95.9	25.9
06/14	0.28	-3.4	13.2	8.9	-2.9	147.7	35.5	37.6	1.46	67.1	13.6	494.7	25.2	37.7	139.3	171.2	20.9
03/14	0.34	477.8	15.7	13.2	468.6	119.1	14.5	37.8	1.47	67.4	14.8	456.0	25.6	38.0	2,000.0	572.3	18.3
12/13	0.45	164.7	20.1	17.4	145.6	115.6	15.5	36.3	1.04	47.5	10.8	440.9	18.7	39.4	188.9	105.5	26.0
09/13	0.39	62.5	18.1	16.1	151.8	112.3	17.0	38.9	0.76	35.6	8.4	425.4	14.6	40.9	90.0	55.3	34.6
06/13	0.29	216.0	13.6	12.5	1,357.7	109.0	27.9	39.1	0.61	24.7	6.0	409.1	8.1	32.6	144.0	30.4	44.1
03/13	-0.09	-145.0	-4.2	-4.1	-148.0	104.0	51.6	43.3	0.07	10.0	2.6	385.3	-10.8	-107.2	-88.7	-58.4	47.8
12/12	0.17	-19.0	8.2	8.2	2.4	100.1	51.3	42.4	0.36	23.1	6.6	349.9	-24.9	-107.5	-43.8	2.5	39.0
09/12	0.24	166.7	7.2	7.5	124.6	96.0	50.4	5.6	0.40	22.9	7.3	316.0	-25.1	-109.3	-34.4	5.3	29.6
06/12	-0.25	-308.3	-1.1	-1.3	-126.5	85.2	37.2	-520.2	0.25	19.0	6.7	283.8	-19.7	-103.8	-63.2	-23.8	19.7
03/12	0.20	-9.1	8.9	12.9	21.3	68.6	15.1	42.0	0.62	24.1	9.3	260.7	8.5	35.1	-13.9	-5.3	13.0
12/11	0.21	16.7	8.0	12.1	11.0	66.2	13.7	35.2	0.64	22.6	9.0	251.7	7.7	34.1	0.0	-4.0	11.3
09/11	0.09	-43.8	3.2	5.0	-49.2	63.8	11.7	27.7	0.61	21.8	8.9	243.8	8.1	37.2			
06/11	0.12	-25.0	4.1	6.6	-12.8	62.1	11.3	35.5	0.68	24.9	10.5	237.1	10.4	41.8			
03/11	0.22	57.1	7.3	12.2	36.7	59.6	8.2	37.9	0.72	25.5	11.0	230.8	10.3	40.6			
12/10	0.18		7.2	12.4		58.2		47.6									
09/10	0.16		6.3	11.0		57.1		46.2									
06/10	0.16		4.7	8.4		55.8		30.6									
03/10	0.14		5.3	9.7		55.1		45.9									