

The Impact on a Firm's Stock Price of an Earnings Restatement to Adhere to Lease Accounting Standards – An Empirical Study

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Introduction

Under current accounting standards, the liabilities for operating leases are off balance sheet items and appear only in footnotes of the financial statements of public firms. However, to be meaningful, these lease items should be added to companies' balance sheets. Gullapalli (2005) reports that under current accounting rules trillions of dollars of financial obligations of public companies are legally kept off the balance sheet. The report says that the Securities and Exchange Commission (SEC) staffers analyzed 200 companies and found that 77 percent had off-balance sheet-operating leases totaling about 1.25 trillion dollars. The SEC has expressed concern about these off balance sheet items.

On February 7, 2005, the SEC issued a letter indicating that more than 50 firms, primarily in the retail and restaurant industries, had failed to adhere to lease accounting standards. As a result, most of these firms had to restate their earnings. Some of these firms could be affected by the February 7, 2005, SEC Letter. For instance, McDonald's took a charge of \$139 million, about eight cents a share.

Kueppers (2005), the chairman of Center for Public Company Audit Firms, American Institute of Certified Public Accountants, explains accounting issues and specific concerns of the SEC regarding the accounting for leases: (1) The amortization of leasehold improvement by a lessee in an operating lease with lease renewals, (2) The pattern of recognition of rent, (3) leasehold improvement incentives provided by lessor to a lessee in an operating lease.

Purpose

The purpose is to investigate the stock price performance of those firms believed to be affected by the February 7, 2005, SEC letter. We use the event study methodology to study the impact of this announcement on the firm's daily abnormal rate of return.

Literature Review

Palmrose and Scholz (2002) studied the relationship between accounting causes and litigation consequences of restatements. They analyzed a sample of 492 companies that announced restatements from 1995 to 1999. They found that at the time of the announcement of restatement the mean and median rate of return were -11 percent and -6 percent respectively.

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Moriarty and Livingston (2001) investigated the quality of financial reporting and the impact of restatements on the market capitalization of the firms. They found that over a 3 day window, restatements caused reduction in market capitalization by \$17.7 billion, \$24.2 billion and \$31.2 billion over the years 1998, 1999, and 2000 respectively.

Turner, et al. (2001) studied the impact of restatements on returns for 173 firms from 1997 to 1999 over an eight day window beginning two days before the announcement of the intention to restate. They found an average abnormal rate of return of -12.3 percent for restatement of revenue and -5.0 percent for restatement of restructuring and impairment charges and other issues. The market capitalization declined about \$27.3 billion.

Kinney and McDaniel (1989) investigated the characteristics of firms correcting previously reported quarterly earnings. They studied a sample of 73 firms that disclosed quarterly restatements in footnotes to their 1976 to 1978 annual reports and found that restating companies were less profitable, had lower growth rates, were smaller, had high debt ratios and were riskier than other firms in their industries. They also studied the relationship between stocks returns and restatement of earnings of firms correcting previously reported quarterly statements and the announcement of filing of corrections. They concluded that the negative returns were primarily associated with errors that overstated income and with the magnitude of the overstatement. However, the reaction in a six day window beginning the day before the announcement of filing of the correction was not significantly negative.

Feroze and Pastena (1991) studied the financial and market effects of the SEC's accounting and auditing enforcement releases and found significantly negative reactions to announcements of SEC accounting and auditing enforcements. Similarly Dechow et al (1996) analyzed the causes and consequences of earnings manipulation in a sample firms subject to enforcement actions by the SEC and found negative reaction to the announcements.

DeFond and Jiambalvo(1991) analyzed a sample of 41 prior period adjustments of annual overstatement errors for the 12 years from 1997 to 1988 to compare the characteristics of firms with overstatement errors to non-restating firms and concluded that, among other things, restating firms tended to have low growth rate of earnings, more diffuse ownership, and overstatements were negatively correlated with the growth in earnings.

As this brief review of the literature indicates most earning restatements have negative impact on stocks returns. Therefore the purpose of our study is to investigate the impact of the SEC announcement of earning restatement to adhere to the lease accounting standards on stock prices and also the impact of the restatement of earnings on the stock prices of those firms.

Methodology and Data

Event study methodology is used. Two market model techniques are used to estimate the expected daily rate of return. They are the Ordinary Least Square (OLS) Market Model method suggested by Fama, Fisher, Jensen and Roll (1969), and the Scholes and Williams method (1977).

Jack Ciesielski (2005) has provided a set of 77 firms that he believes could be affected by the SEC February 7, 2005, lease accounting statement. This set of firms is the initial sample used. Only 66 firms that had the necessary data and did not have any confounding events are studied. The daily rates of return for the common stocks of the sample firms are obtained

from the web site yahoo finance. Additionally, the daily rate of return on the S&P 500 Index, which is also obtained from yahoo finance, is the market proxy.

For each firm the daily abnormal rates of return are the measure of stock market impact. The daily abnormal rate of return is the actual daily rate of return minus the expected daily rate of return. The market model is used to estimate the expected rate of return.

The test period is from 25 trading days before the event to 100 trading days after. This 126 trading day test period should capture any impact that the SEC statement should have. The market model estimation period is 75 trading days, from 100 days before the event to 26 days before the event.

The null hypotheses tested is that the mean daily and cumulative mean daily abnormal rates of return are zero. The test statistic used is adjusted for possible cross sectional correlation.

Abnormal Rates of Return

The daily abnormal rate of return is the daily actual rate of return minus the daily expected rate of return. The single factor market model is used to estimate the daily expected rate of return. The parameters of the model are estimated using both ordinary least squares and the Scholes and Williams method.

Any model used to estimate daily expected rates of return requires two time series of daily rate of return data for each security-event: an estimation period time series for estimating the model parameters, and an event period for estimating abnormal rates of return. To avoid biasing the parameter estimation the estimation period and event period should not overlap.

The single factor market model is used to estimate the daily expected rate of return. The alphas and betas for each stock in the market model are estimated by ordinary least squares and the method of Scholes and Williams.

The mathematical formulation: The abnormal daily rate of return $AR_{j,t}$ for the common stock of the j^{th} firm on day t is

$$(1) \quad AR_{j,t} = R_{j,t} - E(R_{j,t})$$

where $R_{j,t}$ is the actual or observed daily rate of return for stock j on day t , and $E(R_{j,t})$ is the expected daily rate of return. This expected daily rate of return is

$$(2) \quad E(R_{j,t}) = (a_j + b_j * R_{m,t})$$

where the coefficients a_j and b_j are ordinary least squares estimates (estimated using daily data from the estimation period), and $R_{m,t}$ is the daily observed rate of return for market m on day t .

The Scholes and Williams method is also used to estimate those coefficients. The beta estimator is

$$(3) \quad b_{j^*} = \frac{b_{j^-} + b_j + b_{j^+}}{1 + 2\rho_m}$$

where b_j is the ordinary least squares slope estimate from the regression of $R_{j,t}$ on $R_{m,t-1}$, b_j is the ordinary least squares slope estimate from the regression of $R_{j,t}$ on $R_{m,t}$, and b_{j+} is the ordinary least squares slope estimate from the regression of $R_{j,t}$ on $R_{m,t+1}$, and ρ_m is the estimated first order correlation of the daily rates of return on the market, R_m . The intercept estimator a_{j*} is

$$(4) \quad a_{j*} = \bar{R}_j - b_{j*} * \bar{R}_m$$

where \bar{R}_j is the mean return for stock j during the estimation period and \bar{R}_m is the mean market return during the estimation period.

The average abnormal daily rate of return, AAR_t , on date t is

$$(5) \quad AAR_t = \frac{\sum_{j=1}^N AR_{j,t}}{N}$$

where t is defined in trading days relative to the announcement date (for instance $t = -10$ means 10 trading days before the event and N is the number of common stocks in the sample.

The cumulative average daily abnormal rate of return, $CAAR_{T1,T2}$ beginning with trading day $T1$ and ending with trading day $T2$ is

$$(6) \quad CAAR_{T1,T2} = \frac{1}{N} \sum_{j=1}^N \sum_{t=T1}^{T2} AR_{j,t}$$

where all of the terms are as defined above.

Since the SEC announcement date is the same for all firms cross sectional correlation is possible. The t statistic that accounts for this correlation is:

$$(7) \quad t = \frac{AAR_t}{\sqrt{\frac{1}{T-1} * \sum_{t=1}^T (AAR_t)^2}}$$

where T is the number of trading days during the estimation period. This t statistic has $T-1$ degrees of freedom. Since many of the firm restatement dates are close to each other this same test statistic is used for the event study when each firm announces a restatement.

Results

The tables and figure with the results are at the end of the paper. Table I has the list of the 66 sample firms used for the event study of the February 7, 2005, SEC announcement date. A benchmark list of firms was selected from the firms in the Standard and Poor's 500 index. These benchmark firms were not in the same four digit SIC code as the sample firms. The daily abnormal rates of return for the two groups are compared.

Figure 1 contains the plot of the cumulative daily abnormal rates of return for the 66 sample firms and the 66 benchmark firms. These cumulative daily abnormal rates of return are calculated using the daily average abnormal rates of return (AvgARR) in Table 2 (for the 66 sample firms) and Table 3 (for the 66 benchmark firms) Both cumulative daily abnormal rates of return drift downward during the 126 trading day test period. The cumulative daily abnormal rates of return for the 66 benchmark firms have a continuous downward drift. Specifically, the 66 sample firms have a cumulative daily abnormal rate of return of -3.729% on the last day of the test period, which covers 126 trading days beginning 25 trading days before the February 7, 2005, SEC announcement date. For the 66 benchmark firms the cumulative daily abnormal rate of return is -5.511%.

Table 2 contains the average daily abnormal rates of return for the 66 sample firms. The average daily abnormal rates of return for the five trading days day from two days before the announcement to two days after are 0.275%, -0.421%, 0.006%, -0.218%, and -0.879% respectively. None of these values are statistically significant at the five percent level (all of the two tail p values are greater than 5 percent). About one half, or 63, of the test period days have daily abnormal rates of return that are greater than or equal to zero. Six of the Table 2 daily average abnormal rates of return have p-values less than 5 percent. This is approximately what would be expected if the null hypothesis of mean daily abnormal rate of return of zero is true.

Table 3 contains the average daily abnormal rates of return for the 66 benchmark firms. The average daily abnormal rates of return for the five trading days day from two days before the announcement to two days after are -0.214%, -0.103%, -0.204%, -0.051%, and -0.321% respectively. None of these five negative values are statistically significant at the five percent level (all of the two tail p values are greater than 5 percent). Fifty of the test period days have daily abnormal rates of return that are greater than or equal to zero. Eight of the Table 3 daily average abnormal rates of return have p-values less than 5 percent. This also is approximately what would be expected if the null hypothesis of mean daily abnormal rate of return of zero is true.

The daily abnormal rates of return for the 66 sample firms and 66 benchmarks firms were also calculated using the Scholes and Williams method to estimate the parameters of the market model. These results, which are not reported here, were similar to the ordinary least squares method. Additionally, the calculations were done using a 101 trading day test period that goes from 50 trading days before the SEC announcement date to 50 days after. This also did not change the results presented here.

Conclusion

This event study for the February 7, 2005, SEC announcement does not indicate any significant daily abnormal rates of return. These results contrast with most other event studies of earnings related restatements. One possible explanation for these results could be that the market did not think the subsequent earnings restatements would not be significant.

Table I: 66 firms. stock price data, no confounding events, SEC announcement on 2/7/2005.

1	Abercrombie & Fitch	34	Jos. A. Bank
2	A.C. Moore Arts & Crafts	35	Kohl's
3	Albertsons	36	Krispy Kreme
4	American Tower	37	Landry's Restaurants
5	Ann Taylor	38	Lone Star Steakhouse
6	Applebee's International	39	Lowe's
7	Arris Group	40	Marsh Supermarkets
8	Bakers Footware Group	41	McDonalds
9	Benihana	42	Nextel Partners
10	Big Lots	43	Nordstrom
11	Borders Group	44	O'Reilly Automotive
12	Brinker International	45	Outback Steakhouse
13	Buca	46	Pacific Sunwear
14	CEC Entertainment	47	Panera Bread
15	Champps Entertainment	48	Peets Coffee & Tea
16	Charming Shoppes	49	Pep Boys
17	CKE Restaurants	50	P.F. Chang's China Bistro
18	CBRL Group	51	Powell Industries
19	Crown Castle international	52	Red Robin Gourmet Burgers
20	CVS Corp	53	Safeway
21	Darden Restaurants	54	SBA Communications
22	Denny's	55	Sears Holdings Corp
23	Dollar General	56	Starbucks
24	Domino's	57	Target Corp
25	Emeritus	58	TJX Corp
26	GAP	59	United Retail Group
27	Global Signal	60	Ubiquitel
28	Gymboree	61	Wendy's
29	Hypercom	62	West Marine
30	Intermap Network Services	63	Whole Foods Market
31	J.C. Penney	64	Wild Oats Markets
32	J. Jill Group	65	The Yankee Candle Company
33	Jack in the Box	66	Yum Brands

Figure I: Plot of cumulative average daily abnormal rates of return for 66 firms studied on SEC announcement, 2/7/2005, and 66 benchmark firms.

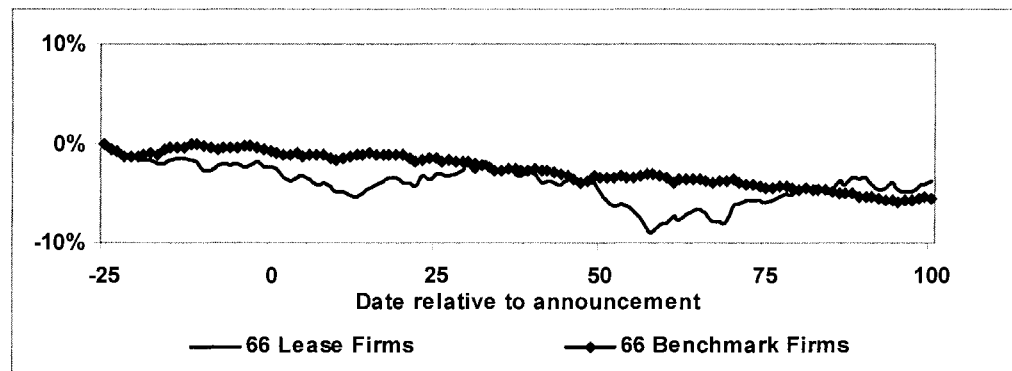


Table II: Event study results, 66 sample firms, 2/7/2005, SEC announcement date

Date	AvgARR	t-value	p-value	Date	AvgARR	t-value	p-value
-25	0.010%	0.023	0.982	21	0.123%	0.273	0.786
-24	-0.527%	-1.168	0.247	22	-0.393%	-0.871	0.387
-23	-0.087%	-0.192	0.848	23	1.091%	2.419	0.018
-22	-0.479%	-1.063	0.292	24	-0.476%	-1.055	0.295
-21	-0.003%	-0.008	0.994	25	0.518%	1.148	0.255
-20	-0.532%	-1.179	0.243	26	0.082%	0.181	0.857
-19	0.006%	0.014	0.989	27	-0.176%	-0.391	0.697
-18	0.016%	0.036	0.971	28	0.155%	0.343	0.733
-17	-0.495%	-1.098	0.276	29	0.392%	0.869	0.388
-16	-0.018%	-0.040	0.968	30	0.729%	1.616	0.111
-15	0.340%	0.755	0.453	31	-0.939%	-2.083	0.041
-14	0.262%	0.581	0.563	32	0.975%	2.162	0.034
-13	0.068%	0.150	0.881	33	-0.265%	-0.587	0.559
-12	-0.306%	-0.679	0.499	34	-0.511%	-1.134	0.261
-11	-0.084%	-0.186	0.853	35	-0.288%	-0.639	0.525
-10	-0.911%	-2.022	0.047	36	0.412%	0.914	0.364
-9	0.003%	0.007	0.994	37	-0.537%	-1.190	0.238
-8	0.562%	1.246	0.217	38	-0.189%	-0.418	0.677
-7	0.086%	0.190	0.850	39	0.432%	0.959	0.341
-6	-0.165%	-0.366	0.715	40	-0.254%	-0.564	0.575
-5	0.251%	0.557	0.579	41	-0.827%	-1.835	0.071
-4	-0.324%	-0.720	0.474	42	0.143%	0.316	0.753
-3	0.155%	0.345	0.731	43	-0.208%	-0.461	0.646
-2	0.275%	0.611	0.544	44	-0.175%	-0.389	0.698
-1	-0.421%	-0.933	0.354	45	0.550%	1.220	0.227
0	0.006%	0.013	0.990	46	-0.074%	-0.165	0.870
1	-0.218%	-0.483	0.631	47	-0.125%	-0.277	0.783
2	-0.879%	-1.950	0.055	48	-0.209%	-0.465	0.644
3	-0.355%	-0.788	0.434	49	0.046%	0.101	0.920
4	0.274%	0.608	0.545	50	-0.862%	-1.911	0.060
5	0.192%	0.425	0.672	51	-0.836%	-1.855	0.068
6	-0.292%	-0.649	0.519	52	-0.529%	-1.173	0.245
7	-0.558%	-1.237	0.220	53	0.062%	0.137	0.891
8	0.179%	0.397	0.693	54	-0.049%	-0.109	0.914
9	-0.372%	-0.825	0.413	55	-0.631%	-1.400	0.166
10	-0.516%	-1.144	0.257	56	-0.692%	-1.535	0.129
11	-0.066%	-0.147	0.883	57	-1.028%	-2.281	0.026
12	-0.345%	-0.765	0.447	58	-0.281%	-0.623	0.535
13	-0.201%	-0.446	0.657	59	0.577%	1.279	0.205
14	0.369%	0.819	0.416	60	0.254%	0.564	0.575
15	0.628%	1.394	0.168	61	0.693%	1.536	0.129
16	0.234%	0.519	0.606	62	-0.365%	-0.810	0.421
17	0.440%	0.977	0.332	63	0.577%	1.280	0.205
18	0.302%	0.671	0.505	64	0.390%	0.866	0.390
19	0.025%	0.056	0.955	65	0.103%	0.229	0.819
20	-0.550%	-1.220	0.227	66	-0.347%	-0.769	0.445

Table II continued

Date	AvgARR	t-value	p-value	Date	AvgARR	t-value	p-value
67	-0.837%	-1.857	0.068	84	-0.703%	-1.560	0.123
68	-0.051%	-0.113	0.910	85	0.363%	0.806	0.423
69	0.054%	0.120	0.905	86	0.846%	1.877	0.065
70	1.478%	3.277	0.002	87	-0.217%	-0.482	0.632
71	0.236%	0.523	0.603	88	0.605%	1.343	0.184
72	0.266%	0.590	0.557	89	-0.066%	-0.147	0.884
73	0.000%	0.000	1.000	90	0.136%	0.302	0.764
74	0.081%	0.180	0.858	91	-0.705%	-1.565	0.122
75	-0.153%	-0.340	0.735	92	-0.488%	-1.082	0.283
76	0.135%	0.299	0.766	93	0.169%	0.375	0.709
77	0.317%	0.702	0.485	94	0.382%	0.847	0.400
78	0.436%	0.968	0.337	95	-0.565%	-1.254	0.214
79	-0.202%	-0.448	0.656	96	-0.251%	-0.558	0.579
80	0.723%	1.603	0.114	97	-0.070%	-0.154	0.878
81	-0.222%	-0.493	0.624	98	0.568%	1.259	0.212
82	0.256%	0.567	0.573	99	0.278%	0.617	0.539
83	0.091%	0.202	0.841	100	0.367%	0.814	0.418

Table III: Event study results, 66 random firms, 2/7/2005, SEC announcement date.

Date	AvgARR	t-value	p-value	Date	AvgARR	t-value	p-value
-25	-0.053%	-0.281	0.780	0	-0.204%	-1.085	0.282
-24	-0.554%	-2.950	0.004	1	-0.051%	-0.273	0.786
-23	-0.208%	-1.107	0.272	2	-0.321%	-1.710	0.092
-22	-0.503%	-2.680	0.009	3	0.128%	0.680	0.499
-21	-0.061%	-0.324	0.747	4	0.022%	0.120	0.905
-20	0.070%	0.375	0.709	5	-0.210%	-1.119	0.267
-19	0.105%	0.559	0.578	6	0.061%	0.324	0.747
-18	0.250%	1.332	0.187	7	0.065%	0.347	0.730
-17	-0.110%	-0.587	0.559	8	-0.002%	-0.010	0.992
-16	0.488%	2.599	0.011	9	-0.339%	-1.804	0.076
-15	0.072%	0.384	0.702	10	-0.221%	-1.178	0.243
-14	0.008%	0.040	0.968	11	0.143%	0.764	0.448
-13	0.085%	0.455	0.651	12	0.239%	1.275	0.207
-12	0.300%	1.597	0.115	13	0.242%	1.289	0.202
-11	-0.018%	-0.094	0.925	14	-0.014%	-0.074	0.941
-10	-0.184%	-0.981	0.330	15	0.144%	0.767	0.446
-9	-0.086%	-0.458	0.649	16	-0.149%	-0.791	0.432
-8	-0.171%	-0.912	0.365	17	-0.064%	-0.343	0.732
-7	0.162%	0.861	0.392	18	0.030%	0.159	0.874
-6	-0.073%	-0.391	0.697	19	-0.024%	-0.128	0.898
-5	0.097%	0.517	0.607	20	0.021%	0.112	0.911
-4	0.072%	0.381	0.704	21	-0.361%	-1.922	0.059
-3	-0.005%	-0.026	0.980	22	-0.294%	-1.565	0.122
-2	-0.214%	-1.138	0.259	23	0.131%	0.700	0.487
-1	-0.103%	-0.549	0.585	24	0.115%	0.610	0.544

Table III continued.

Date	AvgARR	t-value	p-value	Date	AvgARR	t-value	p-value
25	-0.010%	-0.053	0.958	63	-0.031%	-0.167	0.868
26	-0.231%	-1.230	0.223	64	-0.057%	-0.305	0.762
27	0.110%	0.584	0.561	65	0.074%	0.396	0.694
28	-0.187%	-0.994	0.324	66	-0.174%	-0.925	0.358
29	-0.033%	-0.177	0.860	67	-0.200%	-1.066	0.290
30	0.019%	0.101	0.920	68	0.187%	0.998	0.322
31	-0.213%	-1.133	0.261	69	0.043%	0.228	0.821
32	-0.036%	-0.191	0.849	70	0.101%	0.536	0.594
33	-0.220%	-1.172	0.245	71	-0.384%	-2.047	0.045
34	-0.463%	-2.464	0.016	72	-0.052%	-0.279	0.781
35	0.117%	0.621	0.537	73	-0.043%	-0.227	0.821
36	0.207%	1.105	0.273	74	-0.141%	-0.752	0.455
37	-0.126%	-0.674	0.503	75	-0.159%	-0.846	0.400
38	-0.168%	-0.893	0.375	76	-0.101%	-0.537	0.593
39	0.025%	0.131	0.896	77	0.173%	0.923	0.359
40	0.176%	0.935	0.353	78	-0.030%	-0.161	0.873
41	-0.079%	-0.419	0.677	79	-0.101%	-0.539	0.592
42	-0.143%	-0.762	0.449	80	-0.200%	-1.066	0.290
43	-0.102%	-0.544	0.588	81	0.137%	0.728	0.469
44	-0.171%	-0.910	0.366	82	-0.152%	-0.812	0.420
45	-0.199%	-1.061	0.292	83	0.089%	0.472	0.638
46	-0.400%	-2.133	0.037	84	0.000%	0.002	0.998
47	-0.260%	-1.387	0.170	85	-0.168%	-0.897	0.373
48	0.129%	0.685	0.495	86	-0.173%	-0.924	0.359
49	0.481%	2.562	0.013	87	-0.024%	-0.130	0.897
50	-0.066%	-0.349	0.728	88	0.023%	0.121	0.904
51	-0.083%	-0.443	0.659	89	-0.337%	-1.797	0.077
52	-0.022%	-0.116	0.908	90	-0.006%	-0.030	0.977
53	0.212%	1.129	0.263	91	-0.090%	-0.480	0.633
54	-0.180%	-0.958	0.342	92	-0.099%	-0.527	0.600
55	0.042%	0.223	0.824	93	-0.216%	-1.148	0.255
56	0.203%	1.082	0.283	94	-0.111%	-0.593	0.555
57	0.070%	0.375	0.709	95	-0.073%	-0.386	0.700
58	0.108%	0.574	0.568	96	0.085%	0.452	0.653
59	-0.321%	-1.712	0.092	97	0.044%	0.234	0.816
60	-0.048%	-0.258	0.797	98	0.179%	0.955	0.343
61	-0.517%	-2.755	0.008	99	0.144%	0.769	0.445
62	0.317%	1.691	0.096	100	-0.059%	-0.314	0.754

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