

```

MV          17492
2_digit_sic      0
Num Nulls      0
dtype: int64
gvkey        0
datadate      0
tic          1
AP          3206
AT           1
BV          5356
COGS         4918
EMP          3544
REC          5144
SALE         0
XOPR         4918
MV          7933
2_digit_sic      0
Num Nulls      0
dtype: int64

```

	gvkey	datadate	AP	AT
BV \				
count	30530.000000	3.053000e+04	3.053000e+04	3.053000e+04
30530.000000				
mean	81393.285293	2.014310e+07	4.705187e+03	1.672655e+04
2701.554726				
std	76007.546859	1.418901e+04	5.482637e+04	1.236621e+05
12357.137045				
min	1004.000000	2.012113e+07	0.000000e+00	0.000000e+00
-132599.000000				
25%	17454.000000	2.013123e+07	2.048000e+00	5.799425e+01
15.783500				
50%	31214.000000	2.014123e+07	2.510000e+01	6.077515e+02
182.949000				
75%	161793.000000	2.015123e+07	2.732065e+02	3.579302e+03
1156.557750				
max	319507.000000	2.017093e+07	1.709017e+06	3.287968e+06
284434.000000				

	COGS	EMP	REC	SALE \
count	30530.000000	27575.000000	3.053000e+04	30530.000000
mean	2845.038393	11.744432	5.435096e+03	4266.712782
std	14319.185590	49.258676	6.392260e+04	18655.974339
min	-8016.000000	0.000000	0.000000e+00	-3781.680000
25%	7.888500	0.068000	3.068000e+00	19.186750
50%	103.612500	0.670000	6.179650e+01	228.820000
75%	986.073500	5.241000	4.515395e+02	1666.862000
max	435726.253000	2300.000000	3.102199e+06	483521.000000

	XOPR	MV	2_digit_sic	Num Nulls
count	30530.000000	30530.000000	30530.000000	30530.000000
mean	3428.044452	4767.074906	47.339404	0.498264
std	16019.282615	19442.728091	20.360948	0.733525
min	-8016.000000	0.000000	1.000000	0.000000
25%	21.811250	74.330325	28.000000	0.000000
50%	174.168500	804.318650	48.000000	0.000000
75%	1324.350500	4350.708349	63.000000	1.000000
max	452560.000000	790050.098100	99.000000	5.000000

	gvkey	datadate	AP	AT
BV \				
count	24923.000000	2.492300e+04	2.492300e+04	2.492300e+04
24923.000000				
mean	79085.082293	2.014318e+07	5.739964e+03	1.925087e+04
3387.110514				
std	75531.457713	1.422507e+04	6.062769e+04	1.256695e+05
13384.436803				
min	1004.000000	2.012113e+07	0.000000e+00	2.000000e-03
0.002000				
25%	15929.000000	2.013123e+07	5.235000e+00	1.825015e+02
69.506500				
50%	30582.000000	2.014123e+07	5.060000e+01	1.013837e+03
348.810000				
75%	157363.500000	2.015123e+07	4.120435e+02	4.865511e+03
1646.140500				
max	318815.000000	2.017093e+07	1.709017e+06	2.692538e+06
284434.000000				

	COGS	EMP	REC	SALE \
count	24923.000000	22975.000000	2.492300e+04	24923.000000
mean	3380.091030	13.436062	5.654431e+03	5048.457541
std	15728.486676	52.767743	5.019350e+04	20399.785699
min	0.000000	0.000000	0.000000e+00	0.001000
25%	22.247000	0.154000	1.232100e+01	53.580500
50%	197.941000	1.100000	1.113700e+02	404.021000
75%	1334.248000	6.847500	6.090500e+02	2274.457000
max	435726.253000	2300.000000	1.291825e+06	483521.000000

	XOPR	MV	2_digit_sic	Num Nulls
count	24923.000000	24923.000000	24923.000000	24923.000000
mean	4072.997384	5479.611692	48.241825	0.499539
std	17591.607843	21301.494554	19.275033	0.732957
min	0.000000	0.003100	1.000000	0.000000
25%	45.117000	143.516450	34.000000	0.000000
50%	301.801000	1180.553800	49.000000	0.000000
75%	1768.167500	4791.357200	63.000000	1.000000

```

max      452560.000000  790050.098100      99.000000      5.000000
gvkey          int64
datadate      int64
tic           object
AP            float64
AT            float64
BV            float64
COGS          float64
EMP           float64
REC           float64
SALE          float64
XOPR          float64
MV            float64
2_digit_sic   int64
Num Nulls     int64
Binned_SALE   int64
dtype: object
0           7
1           7
2           7
3           7
4           7
..
45061      8
45063      0
45064      0
45065      0
45066      0
Name: Binned_SALE, Length: 24923, dtype: int64
gvkey          int64
datadate      datetime64[ns]
tic           object
AP            float64
AT            float64
BV            float64
COGS          float64
EMP           float64
REC           float64
SALE          float64
XOPR          float64
MV            float64
2_digit_sic   int64
Num Nulls     int64
Binned_SALE   int64
dtype: object
gvkey          AP          AT          BV
COGS  \

```

count	24923.000000	2.492300e+04	2.492300e+04	24923.000000
mean	79085.082293	5.739964e+03	1.925087e+04	3387.110514
std	75531.457713	6.062769e+04	1.256695e+05	13384.436803
min	1004.000000	0.000000e+00	2.000000e-03	0.002000
25%	15929.000000	5.235000e+00	1.825015e+02	69.506500
50%	30582.000000	5.060000e+01	1.013837e+03	348.810000
75%	157363.500000	4.120435e+02	4.865511e+03	1646.140500
max	318815.000000	1.709017e+06	2.692538e+06	284434.000000

	EMP	REC	SALE	XOPR
MV \				
count	2.297500e+04	2.492300e+04	24923.000000	24923.000000
mean	-2.044639e-15	5.654431e+03	3801.272048	4072.997384
std	1.000000e+00	5.019350e+04	9620.207599	17591.607843
min	-2.546264e-01	0.000000e+00	0.453880	0.000000
25%	-2.517080e-01	1.232100e+01	53.580500	45.117000
50%	-2.337804e-01	1.113700e+02	404.021000	301.801000
75%	-1.248596e-01	6.090500e+02	2274.457000	1768.167500
max	4.333261e+01	1.291825e+06	52423.780160	452560.000000

	2_digit_sic	Num Nulls	Binned_SALE	Year
count	24923.000000	24923.000000	24923.000000	24923.000000
mean	48.241825	0.499539	4.499980	2014.208402
std	19.275033	0.732957	2.872451	1.428829
min	1.000000	0.000000	0.000000	2012.000000
25%	34.000000	0.000000	2.000000	2013.000000
50%	49.000000	0.000000	4.000000	2014.000000
75%	63.000000	1.000000	7.000000	2015.000000
max	99.000000	5.000000	9.000000	2017.000000

	gvkey	datadate	tic	AP	AT	BV
COGS \						

0	1004	2014-05-31	AIR	171.100	2199.500	999.500
0.003629						
73	1004	2015-05-31	AIR	142.300	1515.000	845.100
0.003082						
145	1004	2016-05-31	AIR	163.400	1442.100	865.800
0.003110						
218	1004	2017-05-31	AIR	177.400	1504.100	914.200
0.003265						
240	1045	2015-12-31	AAL	1563.000	48415.000	5635.000
0.058330						
275	1045	2016-12-31	AAL	1592.000	51274.000	3785.000
0.058971						
311	1050	2013-12-31	CECE	23.108	348.536	170.406
0.000309						
419	1050	2014-12-31	CECE	31.882	414.365	181.224
0.000404						
595	1050	2015-12-31	CECE	62.199	598.819	239.153
0.000585						
770	1050	2016-12-31	CECE	58.985	498.634	190.082
0.000638						
945	1062	2013-11-30	ASA	0.355	252.142	250.347
0.000009						
1205	1062	2014-11-30	ASA	0.175	223.333	221.800
0.000008						
1523	1062	2015-11-30	ASA	0.198	162.350	160.744
0.000008						
1861	1062	2016-11-30	ASA	0.412	245.020	243.229
0.000007						
2204	1072	2014-03-31	AVX	94.634	2384.988	2047.685
0.002556						
2479	1072	2015-03-31	AVX	76.043	2459.015	2131.963
0.002255						
2759	1072	2016-03-31	AVX	78.168	2409.819	2177.106
0.001991						
3035	1072	2017-03-31	AVX	80.441	2477.413	2216.479
0.002181						
3108	1075	2013-12-31	PNW	284.516	13508.686	4194.470
0.005032						
3368	1075	2014-12-31	PNW	295.211	14313.532	4367.493
0.005194						

	EMP	REC	SALE	XOPR	MV
2_digit_sic \					
0 -0.144711	297.900	7.618251	1779.000	961.308000	
50					
73 -0.162714	231.100	7.374190	1510.600	1046.395400	
50					

145	-0.165557	242.700	7.416138	1525.700	842.511200
50					
218	-0.167452	251.400	7.477378	1619.400	1200.328800
50					
240	1.991064	1425.000	10.621083	32099.000	26452.741700
45					
275	2.063077	1594.000	10.601125	32347.000	23685.556900
45					
311	-0.239788	44.364	5.284812	171.674	413.281200
35					
419	-0.238461	58.394	5.572979	227.617	408.189200
35					
595	-0.232378	97.778	5.906511	322.251	260.490200
35					
770	-0.235960	83.062	6.033113	360.792	476.559900
35					
945	NaN	0.194	1.499846	4.110	2418.935675
67					
1205	NaN	0.099	0.797057	3.677	2418.935675
67					
1523	NaN	0.087	0.510426	3.376	2418.935675
67					
1861	NaN	0.075	0.190620	3.210	208.524900
67					
2204	-0.048061	279.791	7.274205	1233.231	2217.152800
36					
2479	-0.057536	256.496	7.210248	1098.265	2400.071300
36					
2759	-0.061327	220.072	7.086344	987.276	2105.374400
36					
3035	-0.049956	221.091	7.179812	1067.927	2750.693400
36					
3108	-0.132715	393.497	8.147470	2192.597	5830.831400
49					
3368	-0.133985	395.179	8.158125	2263.032	7553.105000
49					

	Num Nulls	Binned_SALE	Year	prevSALE	prevAT	prevEMP
prevCOGS \						
0	0	7	2014	2167.100	2136.900	-0.135235
0.003935						
73	0	7	2015	2035.000	2199.500	-0.144711
0.003629						
145	0	7	2016	1594.300	1515.000	-0.162714
0.003082						
218	0	7	2017	1662.600	1442.100	-0.165557
0.003110						

240	0	9	2015	42650.000	43771.000	1.892519
0.067728						
275	0	9	2016	40990.000	48415.000	1.991064
0.058330						
311	0	4	2013	135.052	94.104	-0.246061
0.000210						
419	0	4	2014	197.317	348.536	-0.239788
0.000309						
595	0	4	2015	263.217	414.365	-0.238461
0.000404						
770	0	5	2016	367.422	598.819	-0.232378
0.000585						
945	3	0	2013	5.817	468.013	NaN
0.000009						
1205	3	0	2014	4.481	252.142	NaN
0.000009						
1523	3	0	2015	2.219	223.333	NaN
0.000008						
1861	2	0	2016	1.666	162.350	NaN
0.000008						
2204	0	6	2014	1414.400	2601.995	-0.051851
0.002533						
2479	0	6	2015	1442.604	2384.988	-0.048061
0.002556						
2759	0	6	2016	1353.228	2459.015	-0.057536
0.002255						
3035	0	6	2017	1195.529	2409.819	-0.061327
0.001991						
3108	0	8	2013	3301.804	13379.615	-0.129304
0.004695						
3368	0	8	2014	3454.628	13508.686	-0.132715
0.005032						

	prevREC	prevX0PR	prevAP	Scaled_Sales	Scaled_prevSales
\					
0	315.400	1921.900	149.300	0.925210	1.014133
73	297.900	1779.000	171.100	1.052343	0.925210
145	231.100	1510.600	142.300	1.152902	1.052343
218	242.700	1525.700	163.400	1.175188	1.152902
240	1771.000	36065.000	1377.000	0.846638	0.974389
275	1425.000	32099.000	1563.000	0.783633	0.846638
311	29.499	117.119	11.098	0.566131	1.435136
419	44.364	171.674	23.108	0.635230	0.566131
595	58.394	227.617	31.882	0.613578	0.635230
770	97.778	322.251	62.199	0.836307	0.613578
945	0.481	4.095	0.148	0.017772	0.012429
1205	0.194	4.110	0.355	0.009936	0.017772

1523	0.099	3.677	0.175	0.010262	0.009936
1861	0.087	3.376	0.198	0.004938	0.010262
2204	217.091	1221.124	115.187	0.604868	0.543583
2479	279.791	1233.231	94.634	0.550313	0.604868
2759	256.496	1098.265	76.043	0.496107	0.550313
3035	220.072	987.276	78.168	0.529852	0.496107
3108	368.730	2045.713	221.312	0.255734	0.246779
3368	393.497	2192.597	284.516	0.243939	0.255734

	Scaled_Emp	Scaled_EmpChange	Scaled_COGS	Scaled_COGSChange
\				
0	-0.000068	-4.434220e-06	1.698415e-06	-1.429487e-07
73	-0.000074	-8.185234e-06	1.401010e-06	-2.490662e-07
145	-0.000109	-1.876334e-06	2.052489e-06	1.848134e-08
218	-0.000116	-1.314123e-06	2.264145e-06	1.078998e-07
240	0.000045	2.251378e-06	1.332622e-06	-2.147107e-07
275	0.000043	1.487425e-06	1.218022e-06	1.322545e-08
311	-0.002548	6.665786e-05	3.282055e-06	1.045909e-06
419	-0.000684	3.806115e-06	1.160080e-06	2.739318e-07
595	-0.000561	1.468093e-05	1.411921e-06	4.361403e-07
770	-0.000394	-5.981329e-06	1.065644e-06	8.863597e-08
945	NaN	NaN	2.015441e-08	7.355626e-11
1205	NaN	NaN	3.346838e-08	-3.941205e-09
1523	NaN	NaN	3.469252e-08	-3.093142e-09
1861	NaN	NaN	4.537734e-08	-2.346616e-09
2204	-0.000018	1.456649e-06	9.821862e-07	8.645588e-09
2479	-0.000024	-3.972970e-06	9.453842e-07	-1.261699e-07
2759	-0.000025	-1.541347e-06	8.096533e-07	-1.072707e-07
3035	-0.000021	4.718439e-06	9.050568e-07	7.887458e-08
3108	-0.000010	-2.549531e-07	3.760984e-07	2.519516e-08
3368	-0.000010	-9.399249e-08	3.844712e-07	1.196635e-08

	Scaled_Rec	Scaled_RecChange	Scaled_X0PR	Scaled_X0PRChange
Scaled_AP \				
0	0.139408	-0.008189	0.832514	-0.066873
0.080069				
73	0.105069	-0.030371	0.686792	-0.122028
0.064697				
145	0.160198	0.007657	1.007063	0.009967
0.107855				
218	0.174329	0.006033	1.122946	0.064975
0.123015				
240	0.032556	-0.007905	0.733339	-0.090608
0.035709				
275	0.032924	0.003491	0.668119	0.005122
0.032882				
311	0.471436	0.157964	1.824301	0.579731



0.245558				
419	0.167541	0.040254	0.653066	0.160509
0.091474				
595	0.235971	0.095047	0.777698	0.228383
0.150107				
770	0.138710	-0.024575	0.602506	0.064362
0.098502				
945	0.000415	-0.000613	0.008782	0.000032
0.000759				
1205	0.000393	-0.000377	0.014583	-0.001717
0.000694				
1523	0.000390	-0.000054	0.015116	-0.001348
0.000887				
1861	0.000462	-0.000074	0.019772	-0.001022
0.002538				
2204	0.107529	0.024097	0.473956	0.004653
0.036370				
2479	0.107546	-0.009767	0.460491	-0.056590
0.031884				
2759	0.089496	-0.014812	0.401492	-0.045136
0.031788				
3035	0.091746	0.000423	0.443157	0.033468
0.033381				
3108	0.029410	0.001851	0.163876	0.010978
0.021265				
3368	0.029254	0.000125	0.167524	0.005214
0.021853				

	Scaled_APChange	BookToMarket	average_sales
SALE_Industry_Mean \			
0	0.010202	1.039729	6.999454
6.999454			
73	-0.013094	0.807630	6.908063
6.908063			
145	0.013927	1.027642	6.885100
6.885100			
218	0.009708	0.761625	7.408951
7.408951			
240	0.004249	0.213021	8.028481
8.028481			
275	0.000599	0.159802	8.118526
8.118526			
311	0.127625	0.412325	6.248188
6.248188			
419	0.025174	0.443971	6.359362
6.359362			
595	0.073165	0.918088	6.392779

6.392779			
770	-0.005367	0.398863	6.226697
6.226697			
945	0.000442	0.103495	4.964716
4.964716			
1205	-0.000714	0.091693	4.897168
4.897168			
1523	0.000103	0.066452	4.931224
4.931224			
1861	0.001318	1.166427	4.986287
4.986287			
2204	-0.007899	0.923565	5.747203
5.747203			
2479	-0.007795	0.888292	5.708505
5.708505			
2759	0.000864	1.034071	5.746273
5.746273			
3035	0.000943	0.805789	6.278186
6.278186			
3108	0.004724	0.719361	7.405098
7.405098			
3368	0.000792	0.578238	7.318203
7.318203			

	prevSALE2
0	NaN
73	7.618251
145	7.374190
218	7.416138
240	NaN
275	10.621083
311	NaN
419	5.284812
595	5.572979
770	5.906511
945	NaN
1205	1.499846
1523	0.797057
1861	0.510426
2204	NaN
2479	7.274205
2759	7.210248
3035	7.086344
3108	NaN
3368	8.147470

OLS Regression Results

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=====
Dep. Variable:          Scaled_Sales    R-squared:
0.846
Model:                  OLS             Adj. R-squared:
0.846
Method:                 Least Squares    F-statistic:
5651.
Date:                   Mon, 08 Mar 2021  Prob (F-statistic):
0.00
Time:                   17:22:06         Log-Likelihood:
-17294.
No. Observations:      12353            AIC:
3.461e+04
Df Residuals:          12340            BIC:
3.471e+04
Df Model:               12
Covariance Type:       nonrobust
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	coef	std err	t	P> t
Intercept	0.0567	0.012	4.765	0.000
Scaled_prevSales	0.7466	0.003	242.034	0.000
Scaled_Emp	1.8466	0.526	3.507	0.000
Scaled_EmpChange	-753.4976	151.500	-4.974	0.000
Scaled_COGS	-4.453e+04	1.75e+04	-2.546	0.011
Scaled_COGSChange	2.697e+05	4.04e+04	6.670	0.000
Scaled_Rec	6.913e-05	0.000	0.233	0.815
Scaled_RecChange	0.0232	0.019	1.205	0.228
Scaled_X0PR	0.2492	0.035	7.026	0.000
Scaled_X0PRChange	-0.4547	0.080	-5.662	0.000
Scaled_AP	-0.0016	0.005	-0.315	0.753
Scaled_APChange	-0.0433	0.032	-1.360	0.174

BookToMarket	-2.767e-06	3.9e-05	-0.071	0.943
	-7.93e-05	7.37e-05		

Omnibus:	32709.553	Durbin-Watson:
2.241		
Prob(Omnibus):	0.000	Jarque-Bera (JB):
11883653771.874		
Skew:	30.139	Prob(JB):
0.00		
Kurtosis:	4807.633	Cond. No.
1.05e+09		

#### Warnings:

- [1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
- [2] The condition number is large, 1.05e+09. This might indicate that there are strong multicollinearity or other numerical problems.

#### OLS Regression Results

Dep. Variable:	Scaled_Sales	R-squared:
0.846		
Model:	OLS	Adj. R-squared:
0.846		
Method:	Least Squares	F-statistic:
40.80		
Date:	Mon, 08 Mar 2021	Prob (F-statistic):
4.96e-23		
Time:	17:22:06	Log-Likelihood:
-17294.		
No. Observations:	12353	AIC:
3.461e+04		
Df Residuals:	12340	BIC:
3.471e+04		
Df Model:	12	
Covariance Type:	cluster	

	coef	std err	t	P> t
[0.025      0.975]				
Intercept	0.0567	0.012	4.603	0.000

0.032	0.081				
Scaled_prevSales	0.7466	0.001	956.616	0.000	
0.745	0.748				
Scaled_Emp	1.8466	0.604	3.057	0.003	
0.641	3.052				
Scaled_EmpChange	-753.4976	357.200	-2.109	0.039	
-1466.280	-40.716				
Scaled_COGS	-4.453e+04	1.84e+04	-2.420	0.018	
-8.13e+04	-7809.976				
Scaled_COGSChange	2.697e+05	8.73e+04	3.089	0.003	
9.55e+04	4.44e+05				
Scaled_Rec	6.913e-05	2.93e-05	2.356	0.021	
1.06e-05	0.000				
Scaled_RecChange	0.0232	0.036	0.648	0.519	
-0.048	0.095				
Scaled_X0PR	0.2492	0.028	8.756	0.000	
0.192	0.306				
Scaled_X0PRChange	-0.4547	0.182	-2.504	0.015	
-0.817	-0.092				
Scaled_AP	-0.0016	0.002	-1.006	0.318	
-0.005	0.002				
Scaled_APChange	-0.0433	0.030	-1.444	0.153	
-0.103	0.017				
BookToMarket	-2.767e-06	7.47e-07	-3.706	0.000	
-4.26e-06	-1.28e-06				

```

=====
=====
Omnibus:                32709.553    Durbin-Watson:
2.241
Prob(Omnibus):          0.000    Jarque-Bera (JB):
11883653771.874
Skew:                   30.139    Prob(JB):
0.00
Kurtosis:               4807.633    Cond. No.
1.05e+09
=====
=====

```

#### Warnings:

```

[1] Standard Errors are robust to cluster correlation (cluster)
[2] The condition number is large, 1.05e+09. This might indicate
that there are
strong multicollinearity or other numerical problems.
/opt/anaconda3/lib/python3.7/site-packages/statsmodels/base/
model.py:1752: ValueWarning: covariance of constraints does not
have full rank. The number of constraints is 12, but rank is 8
'rank is %d' % (J, J_), ValueWarning)

```

```

/opt/anaconda3/lib/python3.7/site-packages/statsmodels/base/
model.py:1752: ValueWarning: covariance of constraints does not
have full rank. The number of constraints is 12, but rank is 9
'rank is %d' % (J, J_), ValueWarning)

```

# OLS Regression Results

```

=====

```

```

=====

```

```

Dep. Variable:          Scaled_Sales    R-squared:
0.846
Model:                  OLS             Adj. R-squared:
0.846
Method:                 Least Squares    F-statistic:
775.0
Date:                   Mon, 08 Mar 2021  Prob (F-statistic):
0.00
Time:                   17:22:08         Log-Likelihood:
-17294.
No. Observations:      12353            AIC:
3.461e+04
Df Residuals:          12340            BIC:
3.471e+04
Df Model:               12
Covariance Type:       HC3

```

```

=====

```

```

=====

```

		coef	std err	z	P> z
[0.025	0.975]				
-----					
Intercept		0.0567	0.027	2.079	0.038
0.003	0.110				
Scaled_prevSales		0.7466	0.302	2.475	0.013
0.155	1.338				
Scaled_Emp		1.8466	1.719	1.074	0.283
-1.523	5.216				
Scaled_EmpChange		-753.4976	379.781	-1.984	0.047
-1497.855	-9.140				
Scaled_COGS		-4.453e+04	3.46e+04	-1.288	0.198
-1.12e+05	2.32e+04				
Scaled_COGSChange		2.697e+05	1.22e+05	2.218	0.027
3.14e+04	5.08e+05				
Scaled_Rec		6.913e-05	9.39e-05	0.736	0.462
-0.000	0.000				
Scaled_RecChange		0.0232	0.039	0.587	0.557
-0.054	0.100				
Scaled_X0PR		0.2492	0.242	1.031	0.303
-0.225	0.723				

Scaled_XOPRChange	-0.4547	0.229	-1.988	0.047
-0.903	-0.006			
Scaled_AP	-0.0016	0.002	-0.784	0.433
-0.006	0.002			
Scaled_APChange	-0.0433	0.114	-0.381	0.703
-0.266	0.179			
BookToMarket	-2.767e-06	6.94e-06	-0.399	0.690
-1.64e-05	1.08e-05			

```

=====
Omnibus:                32709.553    Durbin-Watson:
2.241
Prob(Omnibus):          0.000    Jarque-Bera (JB):
11883653771.874
Skew:                   30.139    Prob(JB):
0.00
Kurtosis:               4807.633    Cond. No.
1.05e+09
=====
=====

```

#### Warnings:

[1] Standard Errors are heteroscedasticity robust (HC3)  
 [2] The condition number is large, 1.05e+09. This might indicate that there are strong multicollinearity or other numerical problems.

	VIF Factor	Variable
0	1.20	Scaled_prevSales
1	1.27	Scaled_Emp
2	1.15	Scaled_EmpChange
3	16.31	Scaled_COGS
4	6.50	Scaled_COGSChange
5	1.01	Scaled_Rec
6	1.01	Scaled_RecChange
7	17.38	Scaled_XOPR
8	6.80	Scaled_XOPRChange
9	1.03	Scaled_AP
10	1.04	Scaled_APChange
11	1.00	BookToMarket

#### Robust linear Model Regression Results

```

=====
Dep. Variable:          Scaled_Sales    No. Observations:
12233
Model:                  RLM    Df Residuals:
12224
Method:                 IRLS    Df Model:

```

```

8
Norm:                               HuberT
Scale Est.:                         mad
Cov Type:                           H1
Date:                               Mon, 08 Mar 2021
Time:                               17:23:03
No. Iterations:                     50

```

```

=====
=====

```

		coef	std err	z	P> z
[0.025	0.975]				
-----					
Intercept		0.0138	0.001	13.978	0.000
0.012	0.016				
Scaled_prevSales		0.9481	0.002	440.505	0.000
0.944	0.952				
Scaled_Emp		0.0251	0.069	0.366	0.714
-0.109	0.160				
Scaled_EmpChange		-856.9468	22.528	-38.039	0.000
-901.101	-812.792				
Scaled_COGS		1.106e+04	1140.113	9.705	0.000
8830.295	1.33e+04				
Scaled_RecChange		-0.1014	0.009	-11.484	0.000
-0.119	-0.084				
Scaled_X0PRChange		0.3049	0.004	78.365	0.000
0.297	0.313				
Scaled_APChange		-0.0383	0.010	-3.931	0.000
-0.057	-0.019				
BookToMarket		-1.082e-06	8.17e-06	-0.132	0.895
-1.71e-05	1.49e-05				

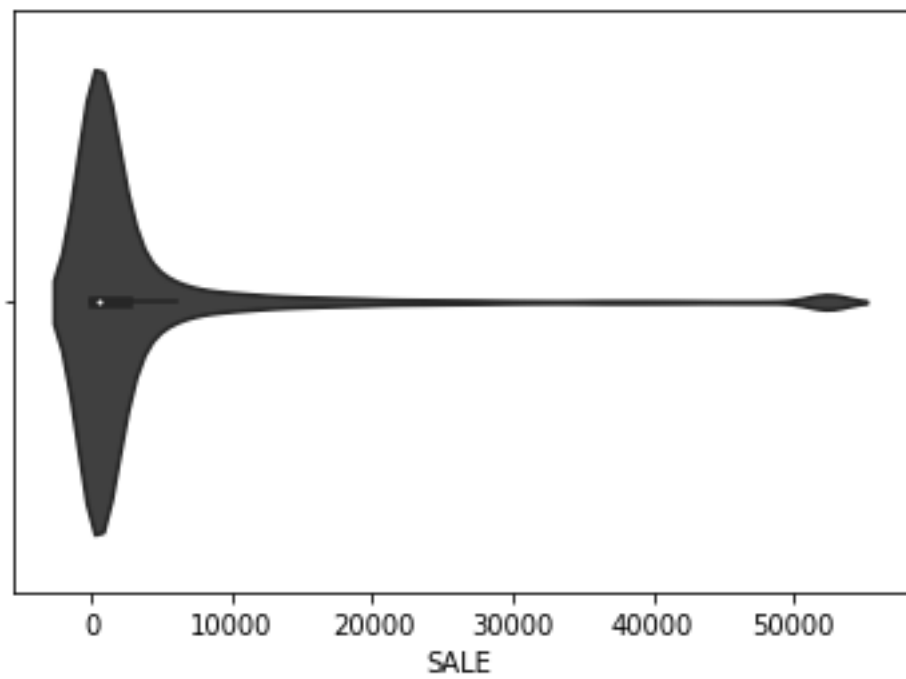
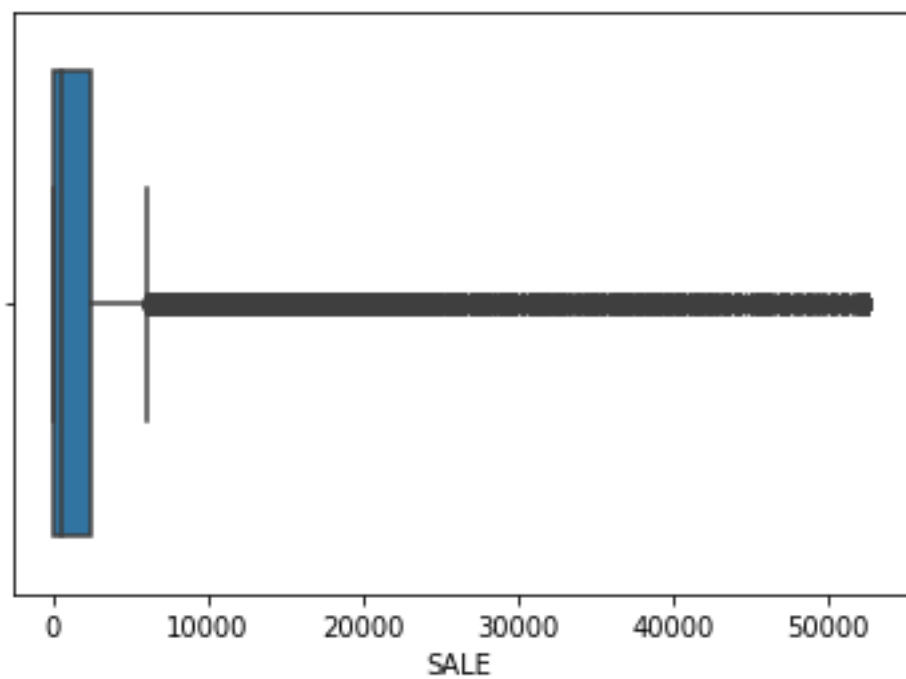
```

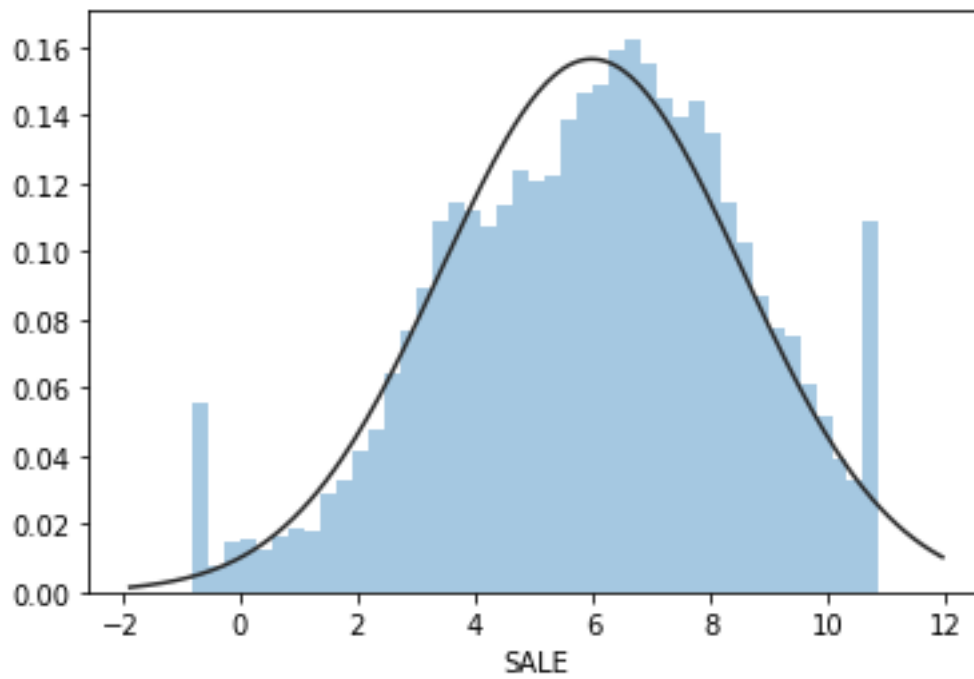
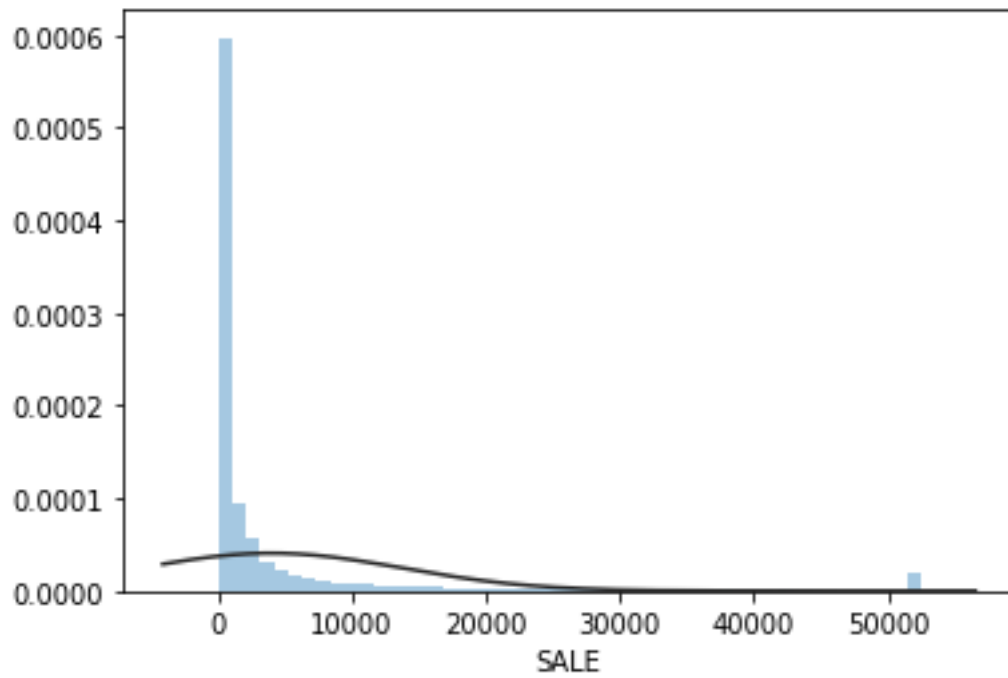
=====
=====

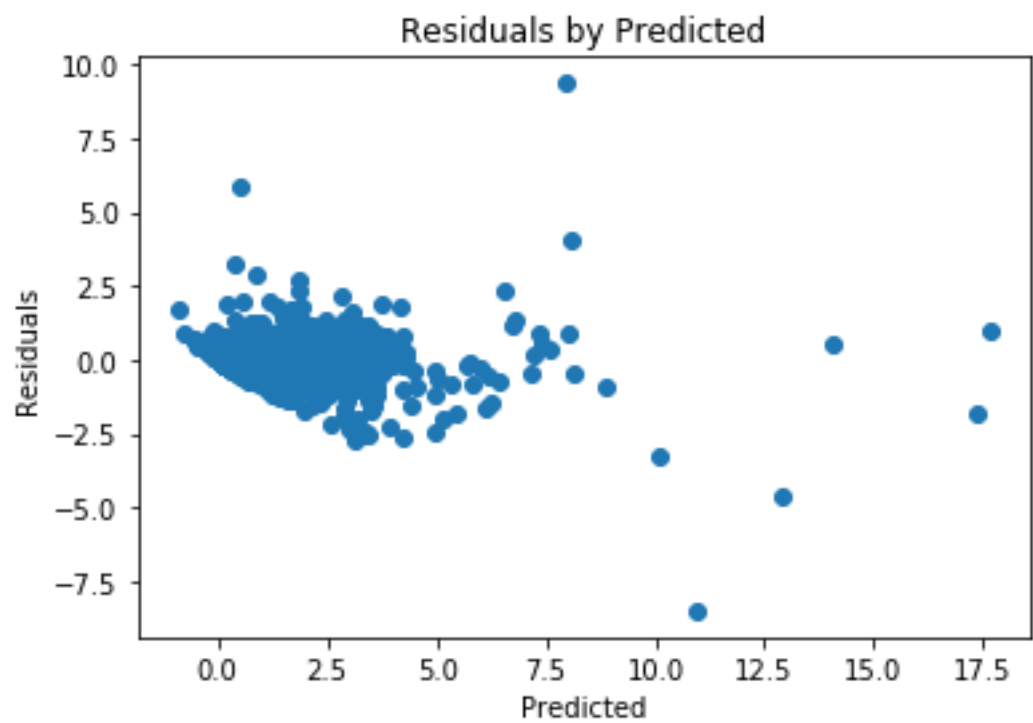
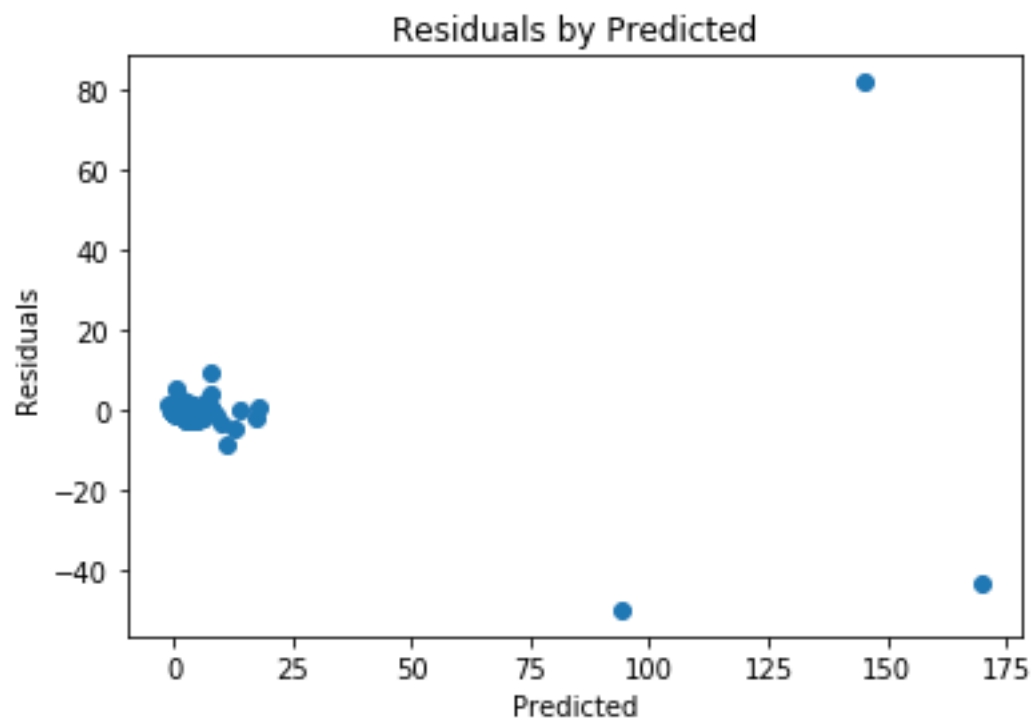
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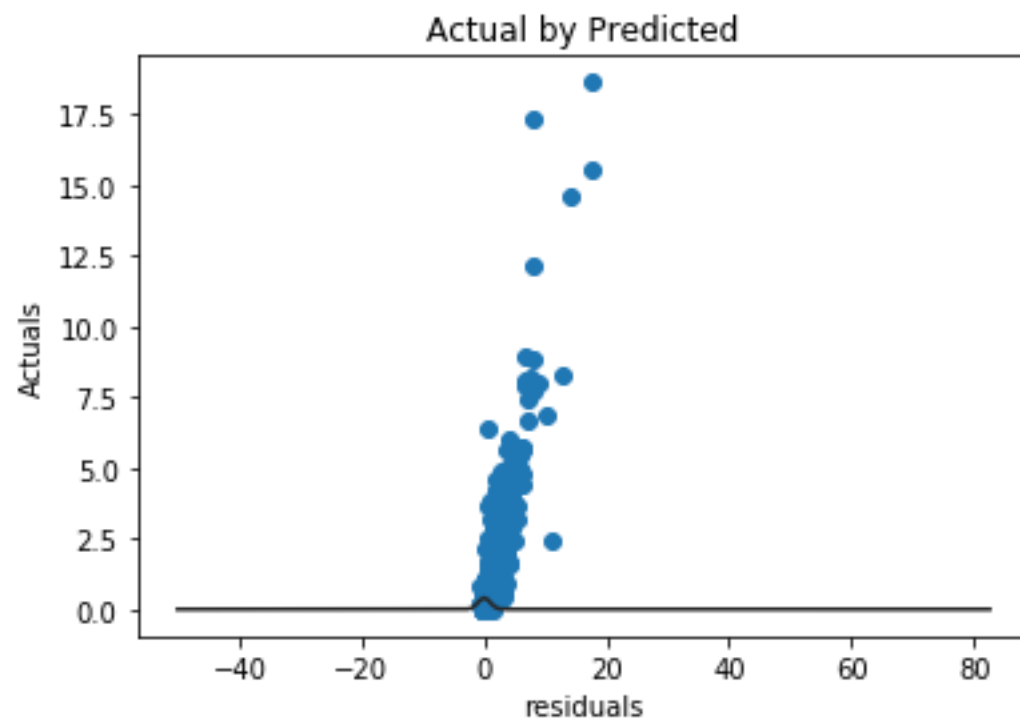
If the model instance has been used for another fit with different fit parameters, then the fit options might not be the correct ones anymore .











<Figure size 432x288 with 0 Axes>

In [3]: