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Impact of 2008 Recession on Consumer Discretionary Sector

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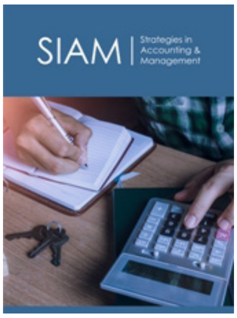

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Abstract

I examine the effect of the 2008 economic recession on the current assets, sales, COGS, and day's sales of companies in consumer discretionary sector. The study focuses on 19 companies in the consumer discretionary sector selected from S&P 500. The study finds similar effects of recession on different groups of companies except for day's sales. The companies are grouped with the same four-digit SIC codes within the consumer discretionary sector. All groups show increased sales, inventory, COGS, and current assets after recession. Interestingly, some groups show faster day's sales after recession and some show slowdown in the consumer discretionary sector.

Introduction

The economic recession in 2008, sometimes called the financial meltdown, affected all sectors of the industry in the USA. In the academic literature, there are many articles that examined the impact of the 2008 recession/meltdown [1-3]. Goodman & Mance [1] focus on labor, oil, construction-related manufacturing, real estate, mortgage finance, and retail furniture stores. Roubini's article (2008) relates to twelve steps: financial systems related to subprime mortgages, prime mortgages, financial institutions, consumer debts like credit cards, auto loans, student loans, commercial real estate loan markets, regional and national banks, and more. Roubini [3] also discusses issues related to housing problem. Kerr's paper (2011) presents three stories regarding 2008, related to corporate laws. Kerr [2] examines Bank of America, Citigroup, and General Motors. These papers do not show extreme changes of assets and incomes during 2008. My paper is based on Consumer Discretionary Sector related to simple accounting information.

Study objectives

In the present study, we examine how the 2008 recession affected the retail sector in the USA. As retailers directly serve consumers, a change in employment and income of consumers should have an immediate, direct effect on the accounting metrics of retailers. To study such effects, we examine a wide spectrum of retailers ranging from high-end entities such as Nordstrom to retailers such as Family Dollar that serve lower income consumers. The specific objective of our study is to identify which metrics were affected by the 2008 recession and which retailers were affected.

Data and results

I have collected data from nineteen retail companies included in the consumer discretionary sector of S&P 500. The companies include Macy's, Kohl's and J.C. Penney Company with SIC 5311; Abercrombie & Fitch, The Gap, Nordstrom, Ross Stores, The TJX Companies, Urban Outfitters with SIC 5651; Target, Dollar General, Family Dollar Stores, Big Lots, Dollar Tree with SIC 5331. Best Buy (SIC 5751), Bed Bath & Beyond (SIC 5700), Ralph Lauren (SIC 2320) are also included. The Home Depot and Lowe's are included (SIC 5211) also. The study period runs from fiscal year 1999 to 2013. Other than current assets, sales, and COGS, I also study the day's sales. Day's sales are defined as Inventory*365/COGS which measures how many days it would take to sell the inventory. Interestingly, some SIC sectors show faster sales and some show slower sales after the recession within the consumer discretionary sector of S&P 500 list. Some of the companies included in this study are removed from the current S&P500 list. J.C. Penney, Big Lots, Family Dollar Stores, and Abercrombie & Fitch are not part of the current S&P 500 list anymore. Dollar Tree acquired Family Dollar Stores in July 2015. The current S&P500 list has 505 companies (Table 1).

Table 1: Summary of results.

SIC	5751	5700	5211	5311	5331	5651	2320
Day's Sales	↑*	↓**	↑**	↑	↓**	↓	↓
Sales	↑**	↑**	↑	↑	↑	↑*	↑**
COGS	↑**	↑**	↑	↑	↑	↑*	↑**
Inventory	↑**	↑**	↑*	↑	↑	↑	↑**
Current Assets	↑**	↑**	↑	↓	↑	↑**	↑**

The single (double) star in the above table indicates 5% (1%) significance. In all groups, sales, COGS, inventory, and current assets show increase after the recession. Companies within SIC 5311, SIC 5331, and SIC 5211 show increased sales after the recession but the increases are not significant. However, Best Buy, Bed Bath & Beyond, Ralph Lauren, and high end retailers show significant increase in sales. Increasing day's sales indicate inventory is moving at a slower rate after recession. Best Buy (SIC 5751), Home Depot, Lowe's (SIC 5211) show significantly slowdown moving inventory after the recession. However, Bed Bath & Beyond (SIC 5700), Target, Dollar Tree, Family Dollar Stores, Dollar General, Big Lots (SIC 5331), show significantly faster inventory move after the recession. SIC 5311 shows slower movement which is not significant. SIC 5651 and SIC 2320 show faster movements but the movements are not significant. Among these groups, SIC 5331 shows the fastest inventory movement after the recession whereas the sales, inventory, COGS do not show any significant increase. This group, SIC 5331, includes five low-end retail companies. SIC 5751 includes one company, Best Buy, which shows significant sales increase after the recession. However, it shows significant slower inventory movement after the recession. Significant increase in sales is expected to indicate faster inventory movement, however, Best Buy (SIC 5751) shows the opposite result. On the other hand, SIC 5331 show insignificant sales increase but inventory movement is significantly faster. Data are collected from fiscal year 1999 to 2013 for every company, except for Family Dollar Stores and Dollar Tree. For these two companies the data are collected for the fiscal years 2000-2013. The study period is partitioned in two segments. Fiscal years 1999 - 2007 are designated as "Before Recession" and 2008-2013 are designated as "After Recession". The results are given in the following tables (Table 2-8). The above tables show similar effects of the recession on different groups of companies except for day's sales. All groups show increased sales, inventory, COGS, and current assets after the recession. Interestingly, some groups show faster day's sales after the recession and some show slowdown in the consumer discretionary sector. In the low-end retail stores (SIC 5331) the inventory movement is the fastest and highly significant after the recession. Bed Bath & Beyond also shows fast and significant inventory movement after the recession. The Home Depot, Lowe's as well as Best Buy show significantly slower inventory movement after the recession. These results match with the economic downturn during the study period.

Table 2:

SIC 5751: BBY n=15	Mean	Standard Error	T Stat	P-value
Sales Before Recession	25238.73	2516.254633	10.0303	1.74E-07
Sales Change After Recession	21958.1	3978.547907	5.51912	9.89E-05
COGS Before Recession	18901.08	1786.890778	10.5776	9.34E-08
COGS Change After Recession	15982.92	2825.322395	5.65703	7.84E-05
Inventory (INV) Before Recession	2754.068	317.8709401	8.66411	9.24E-07
INV Change After Recession	2881.598	502.5980863	5.7334	6.90E-05
Currents Assets (CA) Before Recession	5742.236	653.3410743	8.78903	7.87E-07
CA Change After Recession	4601.097	1033.022942	4.45401	0.00065
Day's sales Before Recession	52.24765	1.832520953	28.5114	4.17E-13
Day's Sales Change After Recession	6.842754	2.897470035	2.36163	0.03447

Table 3:

SIC 5700: BBBY n=15	Mean	Standard Error	T Stat	P-value
Sales Before Recession	4441.038	598.3409894	7.42225	5.03E-06
Sales Change After Recession	4844.641	946.060172	5.12086	0.000196
COGS Before Recession	2519.075	352.1096949	7.15423	7.43E-06
COGS Change After Recession	3001.679	556.7343111	5.39158	0.000123
INV Before Recession	1037.294	128.9569577	8.04372	2.11E-06
INV Change After Recession	1044.041	203.8988532	5.12039	0.000197
CA Before Recession	1696.75	210.8178086	8.04842	2.09E-06
CA Change After Recession	1974.086	333.3322232	5.92228	5.05E-05
Day's Sales Before Recession	153.1968	2.332898406	65.668	8.78E-18
Day's Sales Change After Recession	-15.4264	3.688636256	-4.1821	0.001075

Table 4:

SIC 5211: HD LOW n=30	Mean	Standard Error	T Stat	P-value
Sales Before Recession	48478.9	4451.265521	10.891	1.42E-11
Sales Change After Recession	12155.43	7038.068758	1.7271	0.095168
COGS Before Recession	32644.39	2917.217071	11.1903	7.60E-12
COGS Change After Recession	7117.357	4612.525187	1.54305	0.134046
INV Before Recession	7102.584	576.559502	12.3189	8.00E-13
INV Change After Recession	2434	911.6206165	2.66997	0.012486
CA Before Recession	9378.053	857.7598028	10.9332	1.30E-11
CA Change After Recession	2706.447	1356.237331	1.99556	0.055794
Day's Sales Before Recession	80.70109	1.552851562	51.9696	2.15E-29
Day's Sales Change After Recession	8.098709	2.455273902	3.2985	0.002651

Table 5:

SIC 5311: JCP M KSS n= 45	Mean	Standard Error	T Stat	P-value
Sales Before Recession	18309.55	1319.998859	13.8709	1.78E-17
Sales Change After Recession	1711.726	2087.101451	0.82015	0.416657
COGS Before Recession	11565.72	886.1414435	13.0518	1.49E-16
COGS Change After Recession	796.7835	1401.112645	0.56868	0.572532
INV Before Recession	3327.126	247.4700073	13.4446	5.32E-17
INV Change After Recession	416.8186	391.2844378	1.06526	0.292705
CA Before Recession	6126.104	408.0731063	15.0123	1.05E-18
CA Change After Recession	-108.66	645.2202339	-0.1684	0.867052
Day's Sales Before Recession	106.2554	2.994268539	35.4863	1.75E-33
Day's Sales Change After Recession	3.252878	4.734354254	0.68708	0.495722

Table 6:

SIC 5331 DLTR DG FDO TGT BIG n=73	Mean	Standard Error	t Stat	P-value
Sales Before Recession	13669.11	3221.436289	4.24317	6.55E-05
Sales Change After Recession	6846	5025.165267	1.36234	0.177396
COGS Before Recession	9074.712	2207.76745	4.11036	0.000105

COGS Change After Recession	4776.371	3443.928519	1.3869	0.169812
INV Before Recession	1772.03	341.3021838	5.19197	1.90E-06
INV Change After Recession	719.6392	532.4022349	1.35168	0.180767
CA Before Recession	3466.837	824.2795275	4.2059	7.48E-05
CA Change After Recession	1052.375	1285.80561	0.81846	0.415836
Day's Sales Before Recession	95.82718	3.250431419	29.4814	1.45E-41
Day's Sales Change After Recession	-17.7532	5.070395192	-3.5014	0.000805

Table 7:

SIC 5651: ANF GPS ROST JWN URBN TJX n=90	Mean	Standard Error	t Stat	P-value
Sales Before Recession	7020.485	865.6172047	8.11038	2.76E-12
Sales Change After Recession	3455.741	1368.660974	2.52491	0.013365
COGS Before Recession	4521.464	608.7798161	7.42709	6.75E-11
COGS Change After Recession	2031.01	962.5654062	2.11	0.037697
INV Before Recession	955.6848	109.4096678	8.73492	1.44E-13
INV Change After Recession	267.3223	172.9918742	1.54529	0.125865
CA Before Meltdown	1928.39	235.1254	8.20154	1.79E-12
CA Change After Meltdown	1054.026	371.7659	2.835188	0.005681
Day's Sales Before Recession	81.88462	3.322944168	24.6422	2.89E-41
Day's Sales Change After Recession	-3.92877	5.254036055	-0.7478	0.456598

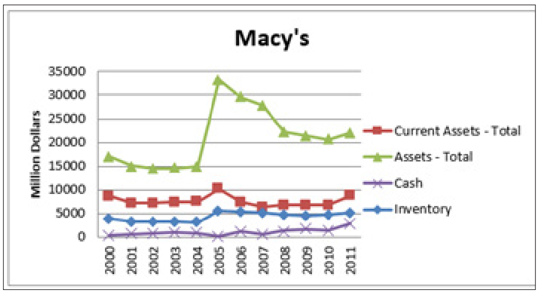
Table 8:

SIC 2320: RL n=15	Mean	Standard Error	t Stat	P-value
Sales Before Recession	3094.802	346.0345393	8.94362	6.47E-07
Sales Change After Recession	3057.265	547.1286466	5.58784	8.80E-05
COGS Before Recession	1493.912	137.8558144	10.8368	7.03E-08
COGS Change After Recession	1089.488	217.9691811	4.99836	0.000244
INV Before Recession	427.9121	46.44643052	9.21302	4.62E-07
INV Change After Recession	320.2379	73.43825482	4.36064	0.000772
CA Before Recession	1285.74	134.678591	9.54673	3.07E-07
CA Change After Recession	1381.294	212.9455498	6.4866	2.05E-05
Day's Sales Before Recession	108.3414	5.896887433	18.3726	1.11E-10
Day's Sales Change After Recession	-4.20327	9.323797698	-0.4508	0.659553

Graphs

This section includes time series plots for five companies for concise presentation. The other plots will be provided upon request. The descriptive statistics in the above tables represent the difference in means but the time series plots provide graphical information over time. Time-series plots for sales show a downward trend for most retailers around 2005-2008. The day's sales in inventory estimates how many days it will take to convert end of the period inventory to cash or accounts receivable. It is determined as Inventory*365/COGS. To include this ratio in the same graph as sales and COGS, I multiplied this ratio by 100 as Inventory*36500/COGS. The graphs are based on data from fiscal years 2000-2011 (Figure 1-6). Macy's, Kohl's, and JC Penney show different results. In particular, JC Penney's results are quite different from all other retailers. JC Penney's senior management change seems to play a significant role. Interestingly, Kohl's sales show a steady growth and do not show a significant drop in sales during 2007-2008. Macy's sales as well as total assets started decreasing from 2006 and continued to decrease for several years. Macy's sales started recovering from 2009 and total assets show increase from 2010 onwards.

I present two other companies' graphs, Nordstrom and TJX Companies (Figure 7&8). They are given below. Nordstrom shows a slight decrease in sales during 2008 whereas TJX shows flat sales around that time. Nordstrom's day's sales shows a steady decrease until 2008 after which it stabilizes whereas TJX's day's sales shows a stable pattern throughout. Among the nineteen companies studied so far, Nordstrom, Ross Stores, Urban Outfitters, Abercrombie & Fitch show a lot of variation in days' sales. The graphs of all nineteen companies have not been included for a concise presentation. These graphs of rest of the companies will be provided upon request. The above graphs provide the time-series results of five individual companies. It may be noted from the graphs that even when the sales of a company continued to grow, there is generally a change in the rate of growth around the time of the financial the recession.



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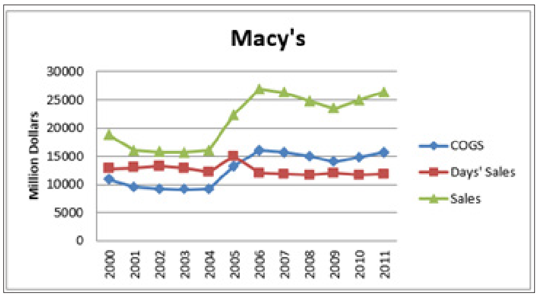

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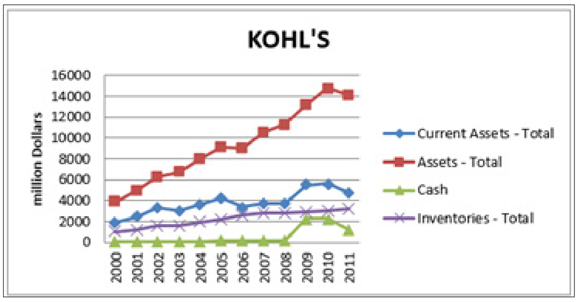

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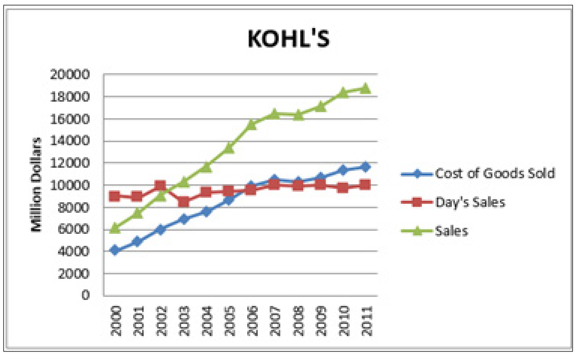

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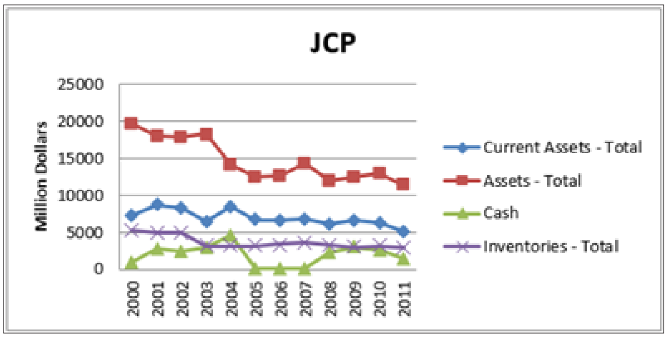

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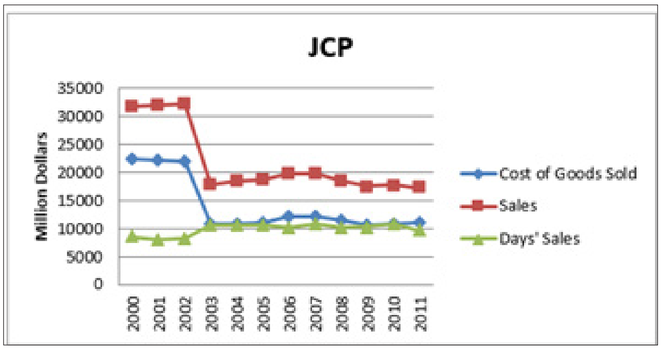

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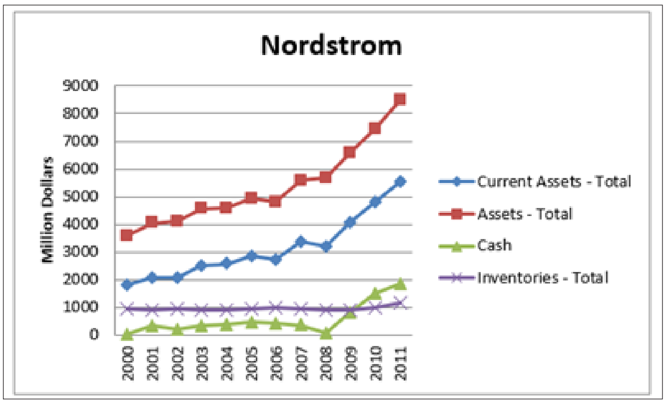

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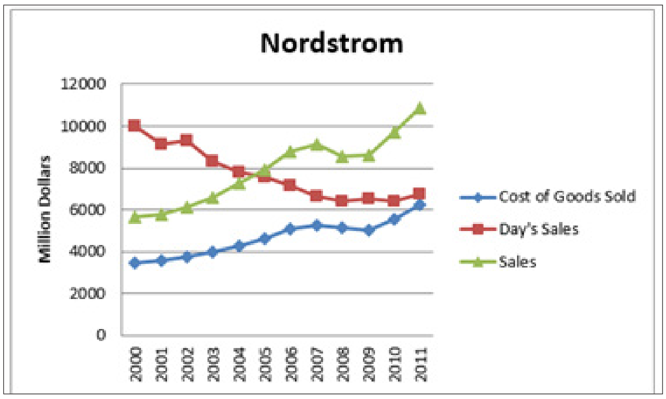

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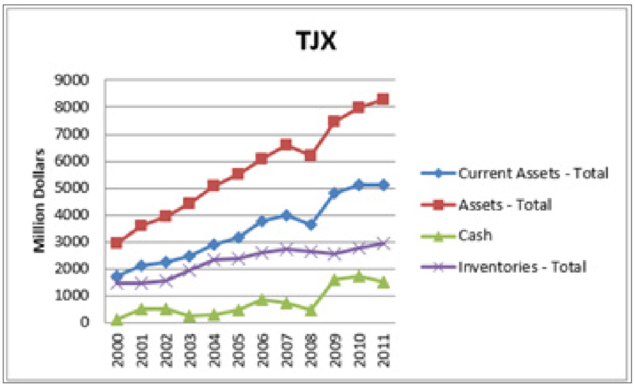

Figure 9:

Figure 10:

Conclusion

The effects of the recession/financial meltdown on current assets, sales, COGS, and day's sales are studied based on nineteen companies from the consumer discretionary sector of S&P 500. The companies are grouped within the same four-digit SIC codes. The study finds similar effects of the recession on different groups of companies except for day's sales. All groups show increased sales, inventory, COGS, and current assets after the recession. Interestingly, some groups show faster day's sales after the recession and some show slowdown in the consumer discretionary sector. In the low-end retail stores the inventory movement is the fastest and highly significant after the recession. Bed Bath & Beyond also shows fast and significant inventory movement after the recession. The Home Depot, Lowe's as well as Best Buy show significantly slow inventory movement after the recession. These results match with the economic downturn during the study period.

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