Georgia Tech Financial Analysis Lab
800 West Peachtree Street NW
Atlanta, GA 30308-0520
404-894-4395
http://www.mgt.gatech.edu/finlab

Dr. Charles W. Mulford
Invesco Chair and Professor of Accounting
charles.mulford@mgt.gatech.edu

Sarika Misra
Graduate Research Assistant
sarika.misra@gatech.edu

Earnings Quality Trends: Stabilization (Quarter 3, 2015)

Earnings Quality Indicator (EQI):

4.55%	8.04%	11.17%
Pre-Recession (Jun. 2007)	Current (Sep. 2015)	Recent High (Sep. 2009)

During the recent financial crisis, median earnings quality, measured using EQI or operating cash margin less net margin, had increased dramatically and then fallen to pre-recession levels. In a January 2013 Report, the Georgia Tech Financial Analysis Lab noted the return of EQI to normal levels. Now, we revisit earnings quality trends by observing the median EQI for the 20 GICS non-financial industry groups. Median EQI for all non-financial industries rose slightly from 6.37% for the three months ended September 2014 to 8.04% for the quarter ended September 2015.

This 26.21% rise in EQI demonstrates higher than normal growth in earnings quality trends. Companies found an equilibrium ratio of operating cash flow to revenue as there were no significant movements across the cash cycle and its components. However, net margins suffered as the increase in SG&A expenses were higher compared to the increase in gross margins. Companies may continue to see gross margin reversion from recent highs as labor seeks greater claims on revenue and new entrants fueled by easy credit are able to enter markets.

A falling EQI raises questions about the sustainability of future earnings. In a similar fashion, a rising EQI raises questions about the sustainability of future operating cash flow. A stable EQI, showing no discernible trend, is one that does not raise such questions about the sustainability of future earnings or operating cash flow. While EQI did show a significant increase during the recession and a decline after the recession ended, EQI has stabilized at a level that existed prior to the recent recession. In future periods we expect EQI to trend around current levels. Significant increases or declines from this level could be cause for concern.

Regarding individual industries, during the period between September 2014 and September 2015, EQI was stable in 8 industries, increased in 11 and declined in 1. In this report we take a closer look at one individual industry where EQI has risen dramatically, Energy.

Data for this research were provided by S&P Capital IQ's Compustat Database. **May 2016**

Georgia Tech Financial Analysis Lab
Scheller College of Business
Georgia Institute of Technology
Atlanta, GA 30332-0520

Georgia Tech Financial Analysis Lab

The Georgia Tech Financial Analysis Lab conducts research on issues of financial reporting and analysis. Unbiased information is vital to effective investment decision-making. Accordingly, the Lab thinks that independent research organizations, such as this Lab, have an important role to play in providing information to market participants.

Because the Lab is housed within a university, all of its research reports have an educational quality, as they are designed to impart knowledge and understanding to those who read them. Its focus is on issues that it believes will be of interest to a large segment of stock market participants. Depending on the issue, it may focus its attention on individual companies, groups of companies, or on large segments of the market at large.

A recurring theme in the work is the identification of reporting practices that give investors a misleading signal, whether positive or negative, of corporate earning power. The Labs defines earning power as the ability to generate a sustainable stream of earnings that is backed by cash flow. Accordingly, its research may look into reporting practices that affect either earnings or cash flow, or both. At times, its research may look at stock prices generally, though from a fundamental and not technical point of view.

Contact Information

Charles Mulford	Invesco Chair, Professor of Accounting and the Lab's Director
	Phone: (404) 894-4395
	Email: charles.mulford@mgt.gatech.edu
Kevin Bell	Graduate Research Assistant and MBA Student
Biro Conde	Graduate Research Assistant and MBA Student
Sarika Misra	Graduate Research Assistant and MBA Student
Website:	http://www.mgt.gatech.edu/finlab

Earnings Quality: Background and Definition

Earnings quality is an evaluation of the extent to which a firm's earnings are generated from sustainable sources that are backed by cash flow. There are two dimensions to earnings quality: the persistence and cash flow dimensions. In examining the persistence dimension of earnings quality, we identify whether reported earnings have been boosted by nonrecurring items. For example, earnings increased by a nonrecurring gain from an asset sale or a one-time reduction in the effective tax rate due to a tax-loss carryforward would impair earning quality on the persistence dimension. In evaluating the cash dimension of earnings quality, we seek to determine whether reported earnings are supported by cash flow. For example, cash flow would lag earnings for a company that has provided its customers with extended payment terms or that has accumulated inventory in anticipation of increased future sales. Such lagging cash flow would impair earnings quality on the cash dimension.

Earnings that are of low quality increase the likelihood that future earnings will decline from current levels. This is not to say that future earnings will decline, but the likelihood of a decline is increased for companies with low earnings quality. For example, in the case of the nonrecurring gain or the low effective tax rate, future earnings will decline when that gain is excluded or the tax-loss carryforward is no longer available. For the firm that has provided extended payment terms or that has accumulated inventory, future earnings will decline if the resulting receivables or accumulated inventory cannot be realized and write-downs ensue.

In assessing earnings quality, the balance sheet also plays an important role. We use the term position quality to refer to the effects of the balance sheet on earnings quality. We say that position quality is impaired when assets are carried at amounts that exceed fair value or when obligations are carried at less than the amounts needed to liquidate them. Companies that accumulate overvalued assets or undervalued liabilities will see their earnings decline when those overvalued assets are written down or those undervalued liabilities are written up. For example, at some point an investment in a debt security of a financially-troubled issuer that is held to maturity and carried at cost will need to be written down. Similarly, a charge will be needed to increase the balance of an under-accrued warranty obligation. In both instances, future earnings will suffer.

In this report, we examine issues impacting earnings quality on the cash dimension across all nonfinancial industries as measured by an Earnings Quality Indicator (EQI). EQI is a ratio that measures the relationship between sustainable operating cash flow and net income. The ratio measures the excess of sustainable operating cash flow over net income as a percentage of revenue. The calculation is as follows:

Earnings Quality Indicator (EQI) = [(Operating Cash Flow – Net Income) / Revenue]

Note that before its use in the EQI calculations, operating cash flow measured under generally accepted accounting principles (GAAP) is first adjusted for nonrecurring and non-operating items. Net Income measured under GAAP is similarly adjusted. Such adjustments remove noise and improve the effectiveness of EQI.
EQI can also be expressed as: (Operating Cash Flow / Revenue) – (Net Income/Revenue), or

Operating Cash Margin less Net Margin.

Interpretations of EQI

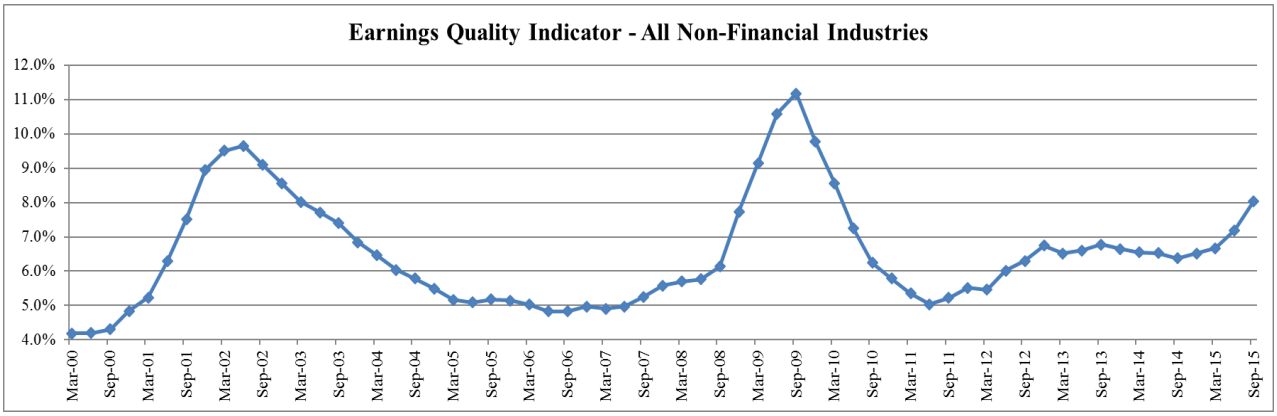
Significant decreases in the ratio over time are of particular concern and indicate that operating cash flow is either growing slower or declining faster than net income, leading to a build-up of non-cash balance sheet accounts and warning of possible operational difficulties or of aggressive practices in the measurement of earnings. Future earnings may be at risk for decline. Significant increases in the ratio over time indicate that operating cash flow is growing faster or declining slower than net income, leading to a decline in non-cash balance sheet accounts. Such a development suggests either the possibility of increasingly conservative accounting practices in the measurement of earnings or of a decline in future operating cash flow. A steady to slightly increasing ratio over time indicates an equilibrium relationship between operating cash flow and net income.

Purpose

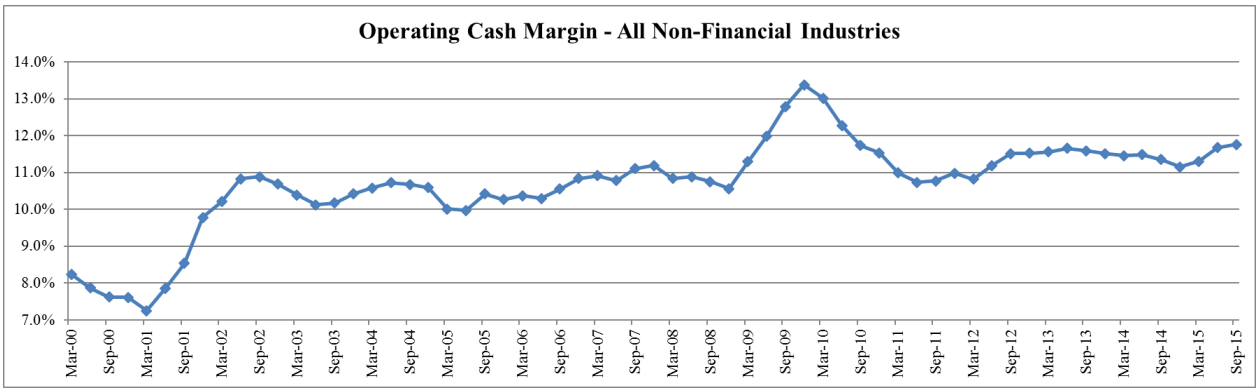
In this study we look at the trend in EQI across all non-financial industries. We present median data for all industries combined for the quarters ending March 2000 through September 2015. Then, for individual industries, we present median data for the 3 months ended September 2000 through September 2015.

Results – All Industry Data

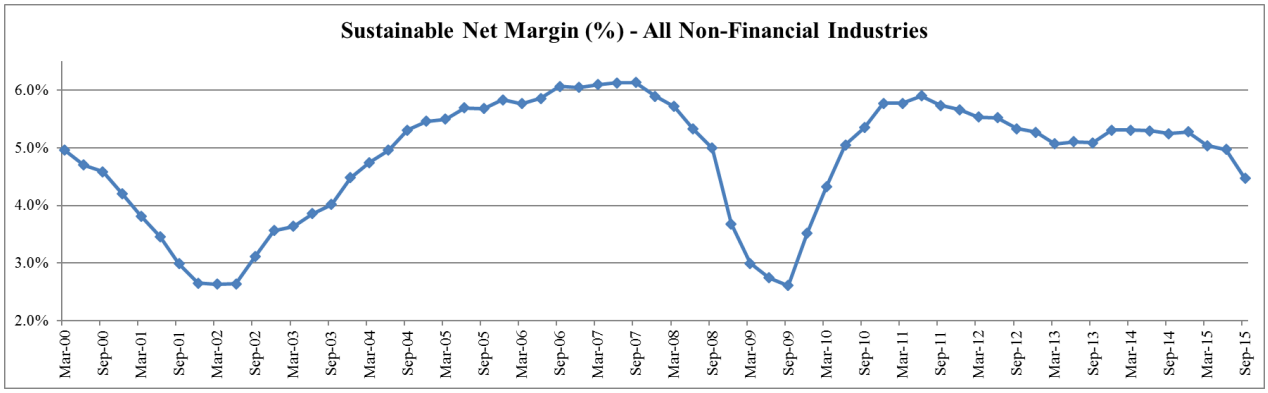
For all industries combined, as indicated in the chart below, there is steadily increasing trend in EQI since September 2014. Operating cash margin rose slightly between December 2014 and June 2015 and then held stable as the impacts from reduced inventory days and operating receivables days offset the reduced Payables days. However, net margins suffered slightly (from 5.28% in Dec 2014 t0 4,47% in Sep 2015) as operating cushion percent was reduced by higher SG&A. It should be noted that the use of median data for all non-financial industries, while representative of the broad economy, produces an EQI that does not equal the difference between sustainable operating cash margin and sustainable net margin. This is because the three measurements, EQI, sustainable operating cash margin and sustainable net margin, represent industry medians, and as a result, may reflect measures taken from different companies.



EQI = [(Sustainable Operating Cash Flow – Sustainable Net Income) / Revenue] or
Sustainable Operating Cash Margin – Sustainable Net Margin



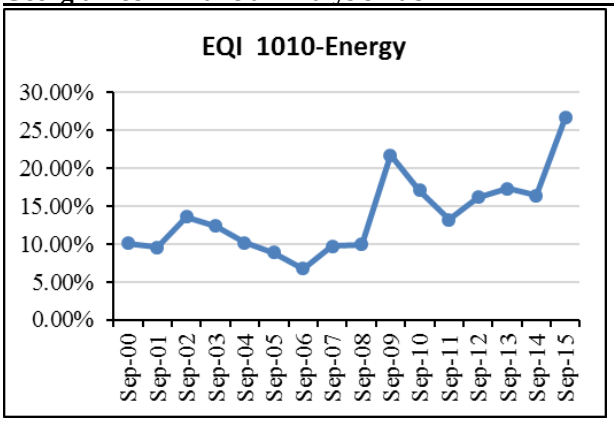
Operating Cash Margin (Sustainable) = Operating Cash Flow(Sustainable)/ Revenue

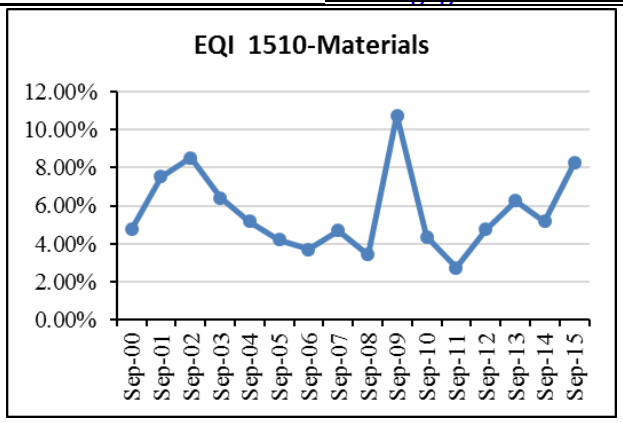


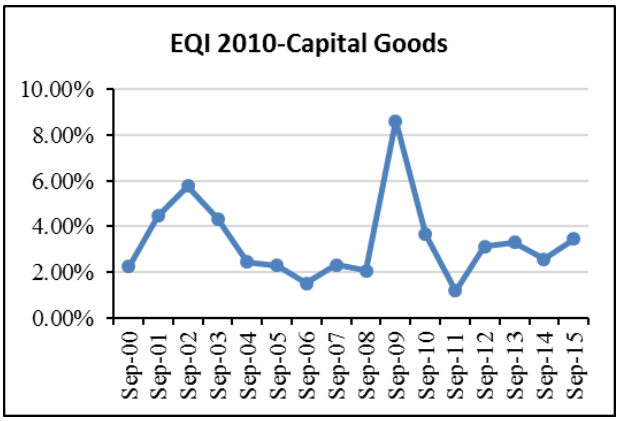
Sustainable Net Margin = Sustainable Net Earnings / Revenue

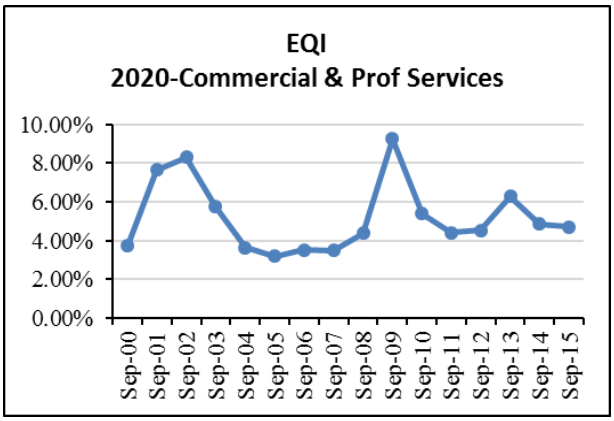
Results – Individual Industry Data

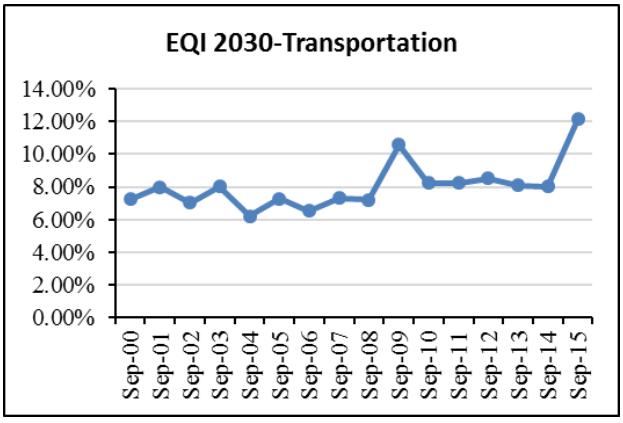
We next take a look at the EQI trends for all the 20 industry groups from September 2000 till September 2015. Consistent with the combined industry data, we find median EQI to be generally rising over the period Sep 2014 through September 2015, with EQI rising in 11 industries, stable in 8 industries, and falling in 1 industry.

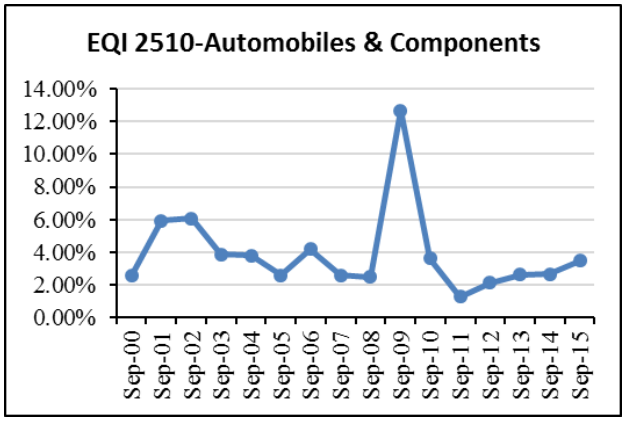

EQI 1010-Energy
30.00%
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

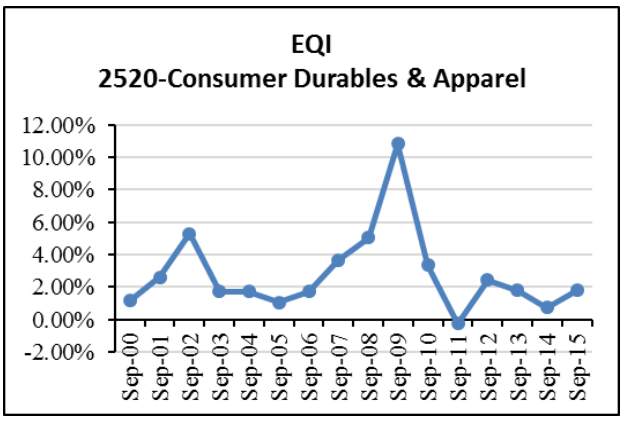

EQI 1510-Materials
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

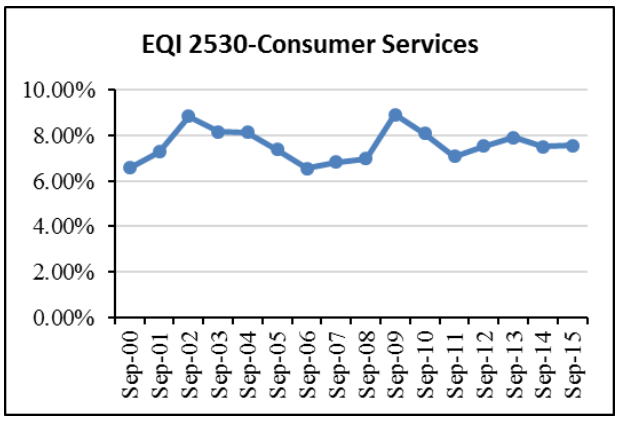

EQI 2010-Capital Goods
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

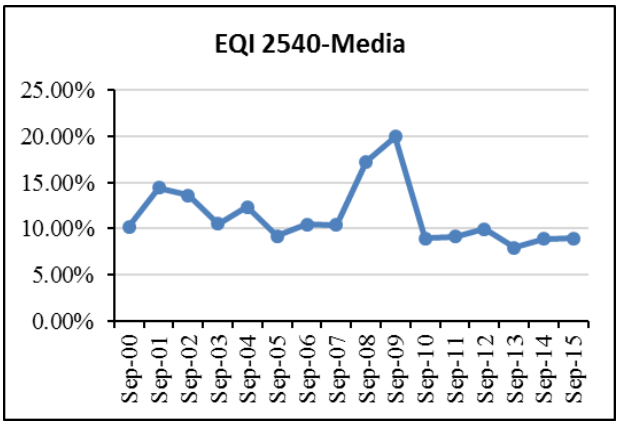

EQI
2020-Commercial & Prof Services
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

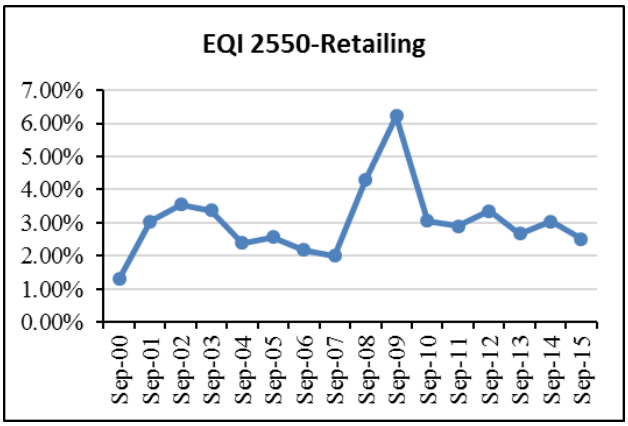

EQI 2030-Transportation
14.00%
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

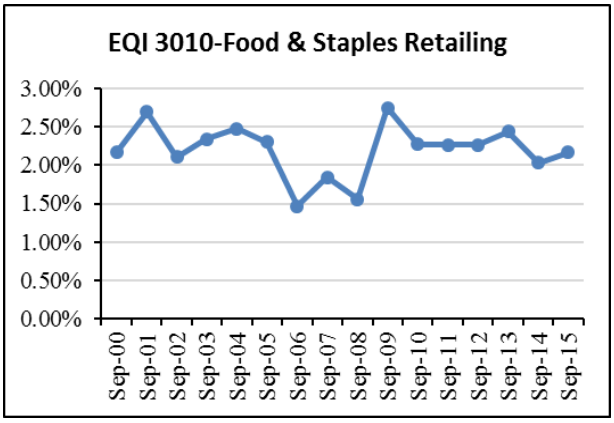

EQI 2510-Automobiles & Components
14.00%
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

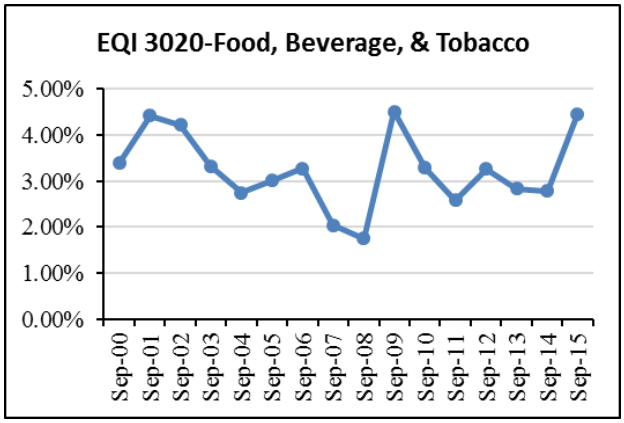

EQI
2520-Consumer Durables & Apparel
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
-2.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

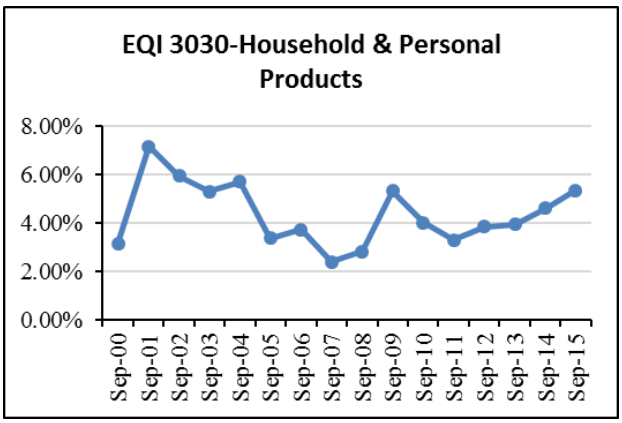

EQI 2530-Consumer Services
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

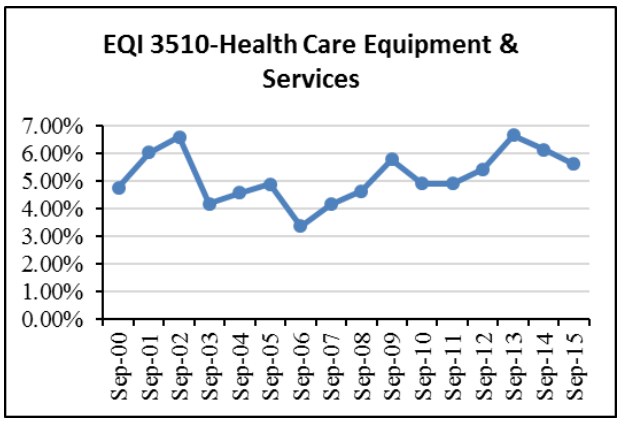

EQI 2540-Media
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

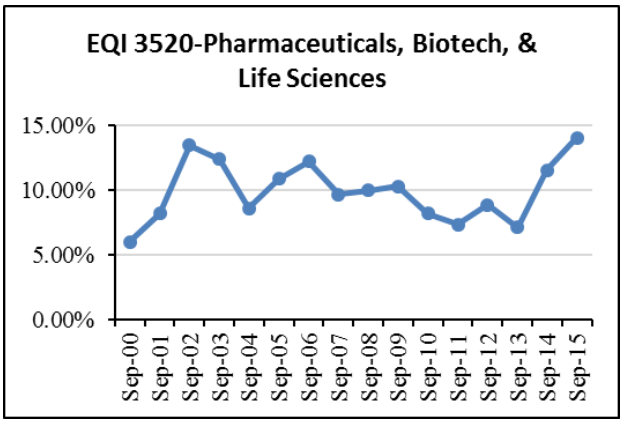

EQI 2550-Retailing
7.00%
6.00%
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

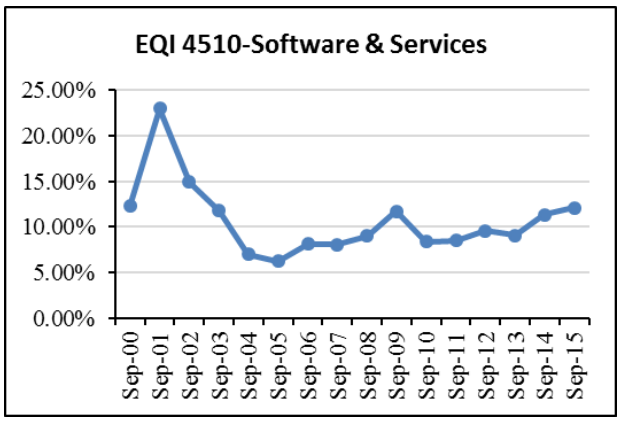

EQI 3010-Food & Staples Retailing
3.00%
2.50%
2.00%
1.50%
1.00%
0.50%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

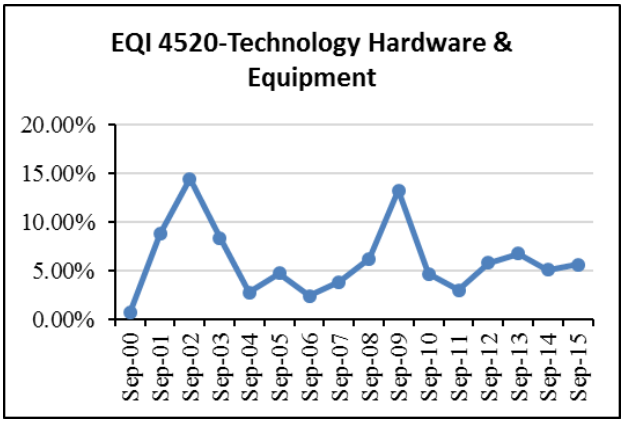

EQI 3020-Food, Beverage, & Tobacco
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

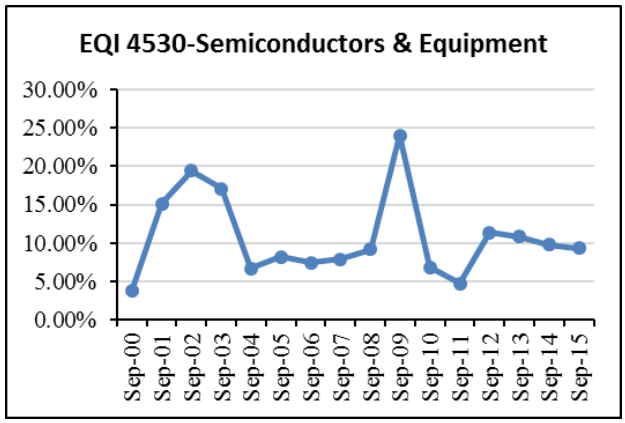

EQI 3030-Household & Personal Products
8.00%
6.00%
4.00%
2.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

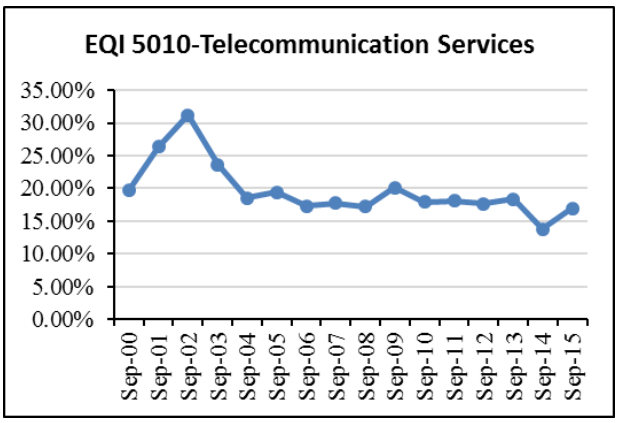

EQI 3510-Health Care Equipment & Services
7.00%
6.00%
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

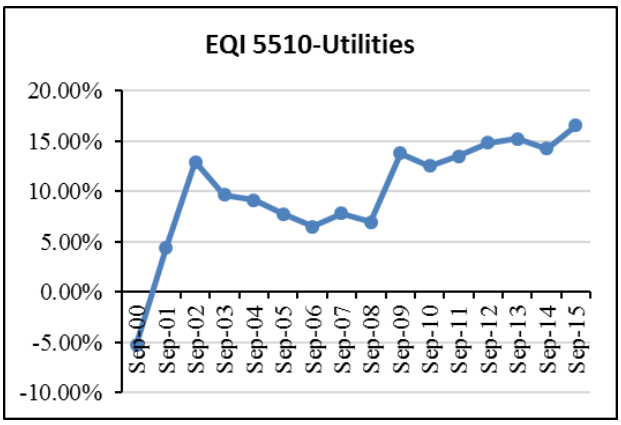

EQI 3520-Pharmaceuticals, Biotech, & Life Sciences
15.00%
10.00%
5.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15


EQI 4510-Software & Services
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15


EQI 4520-Technology Hardware & Equipment
20.00%
15.00%
10.00%
5.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15


EQI 4530-Semiconductors & Equipment
30.00%
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15





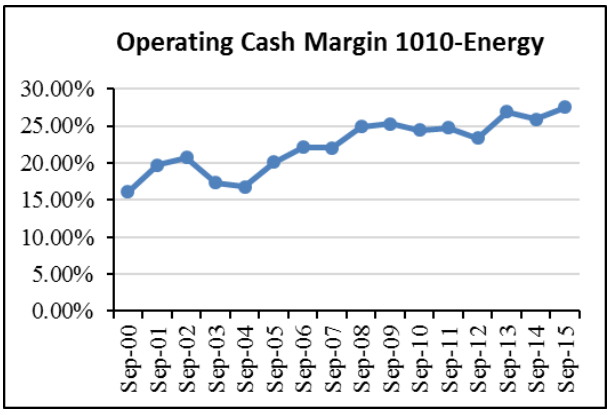
In the table below we compare EQI results for the 20 separate non-financial industry groups we follow.

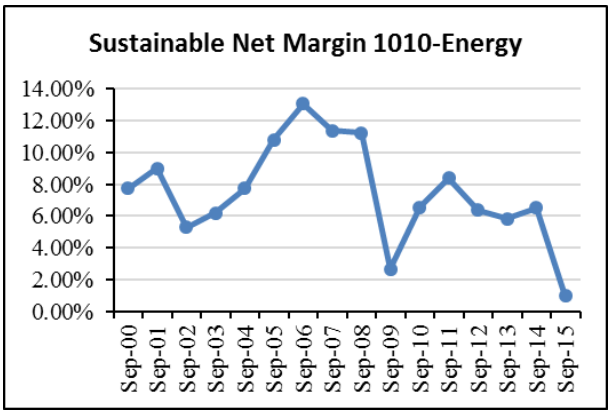
Earnings Quality Indicator for 20 Non-financial industry groups

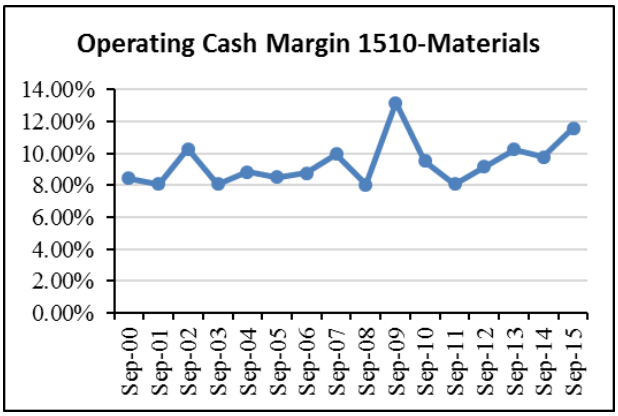
	Industry	Sep 2014	Sep 2015	Trend*
1	1010-Energy	16.41%	26.62%	Rising
2	1510-Materials	5.16%	8.26%	Rising
3	2010-Capital Goods	2.58%	3.45%	Rising
4	2020-Commercial & Prof Services	4.85%	4.71%	Stable
5	2030-Transportation	8.01%	12.16%	Rising
6	2510-Automobiles & Components	2.65%	3.45%	Rising
7	2520-Consumer Durables & Apparel	0.75%	1.81%	Rising
8	2530-Consumer Services	7.50%	7.56%	Stable
9	2540-Media	8.93%	8.96%	Stable
10	2550-Retailing	3.04%	2.50%	Falling
11	3010-Food & Staples Retailing	2.03%	2.17%	Stable
12	3020-Food, Beverage, & Tobacco	2.78%	4.45%	Rising
13	3030-Household & Personal Products	4.59%	5.33%	Rising
14	3510-Health Care Equipment & Services	6.12%	5.61%	Stable
15	3520-Pharmaceuticals, Biotech, & Life Sciences	11.49%	13.99%	Rising
16	4510-Software & Services	11.36%	12.10%	Stable
17	4530-Semiconductors & Equipment	9.76%	9.30%	Stable
18	4520-Technology Hardware & Equipment	5.10%	5.60%	Stable
19	5010-Telecommunication Services	13.81%	16.97%	Rising
20	5510-Utilities	14.22%	16.53%	Rising

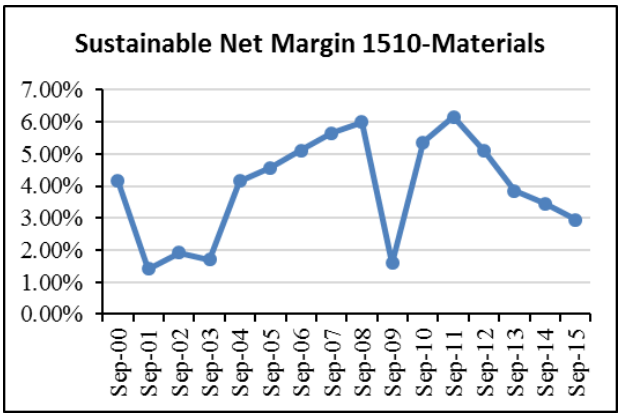
*Note – Stable is considered to be within a +/- 15% change

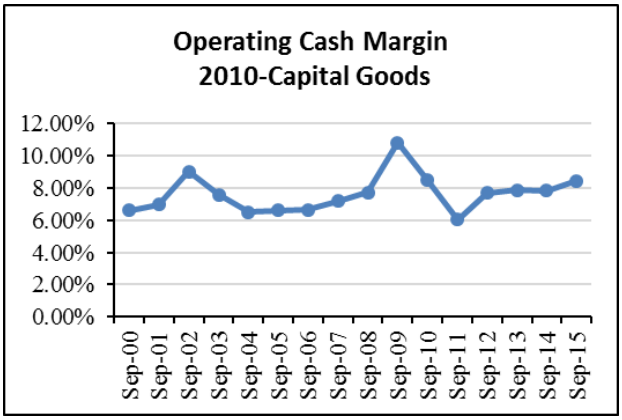
We also look at the Operating cash flows and Net Margins for each of the industry categories.

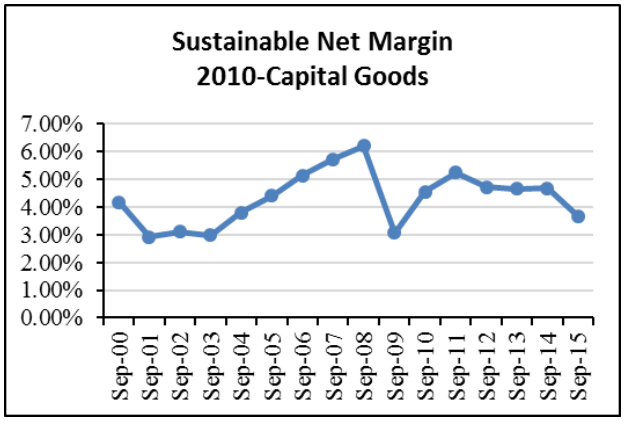

Operating Cash Margin 1010-Energy
30.00%
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

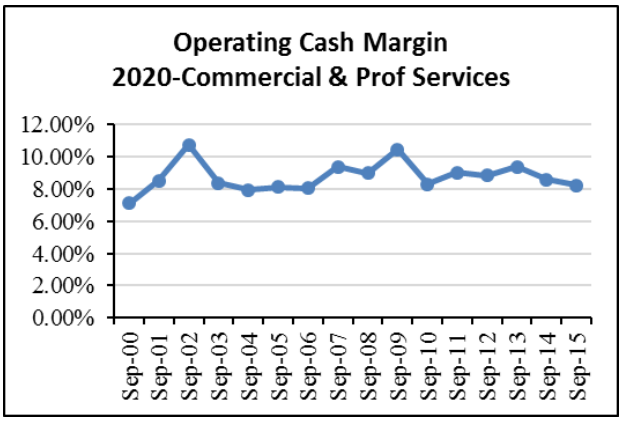

Sustainable Net Margin 1010-Energy
14.00%
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

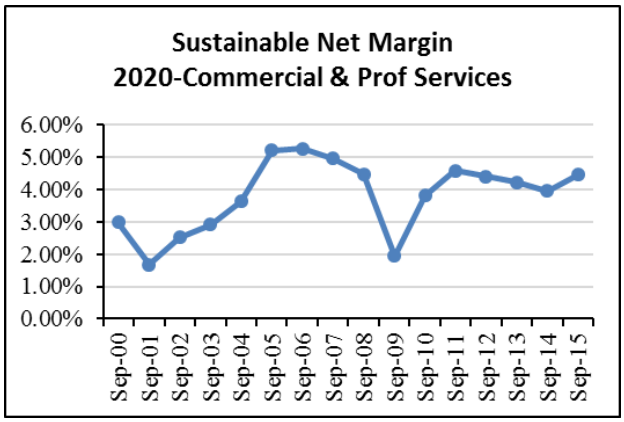

Operating Cash Margin 1510-Materials
14.00%
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

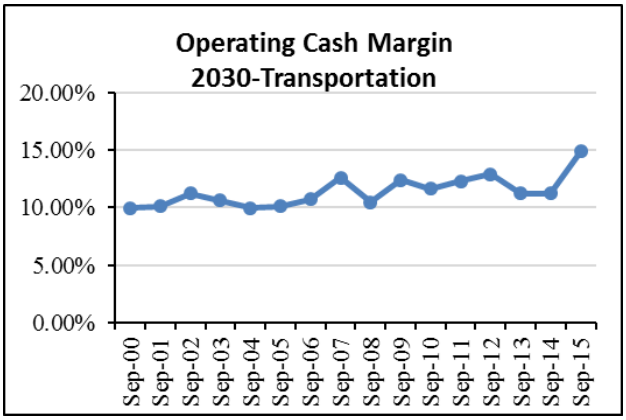

Sustainable Net Margin 1510-Materials
7.00%
6.00%
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

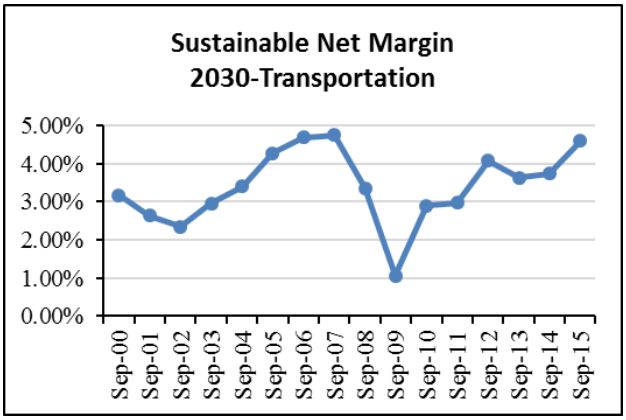

Operating Cash Margin
2010-Capital Goods
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

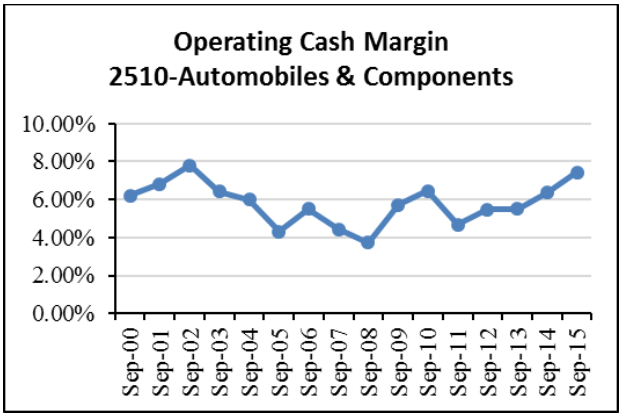

Sustainable Net Margin
2010-Capital Goods
7.00%
6.00%
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

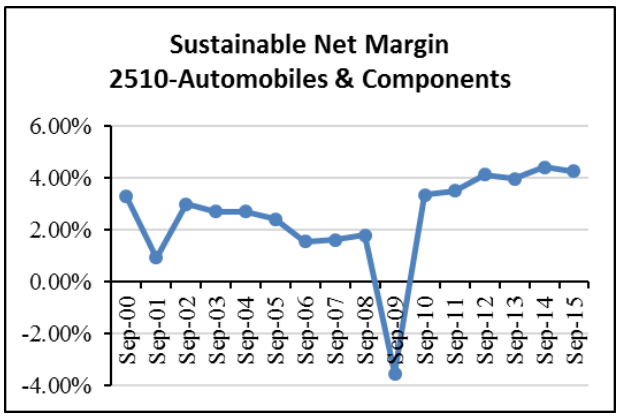

Operating Cash Margin
2020-Commercial & Prof Services
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

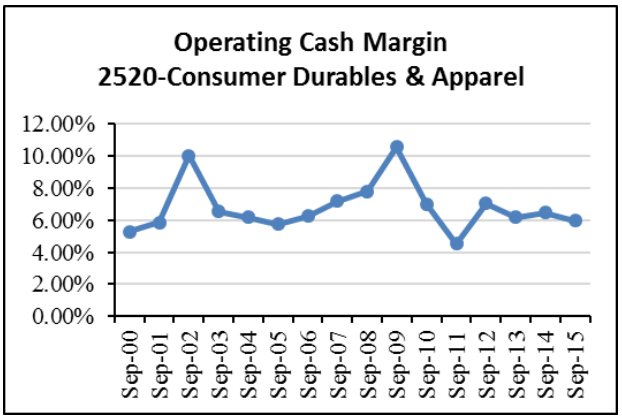

Sustainable Net Margin
2020-Commercial & Prof Services
6.00%
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

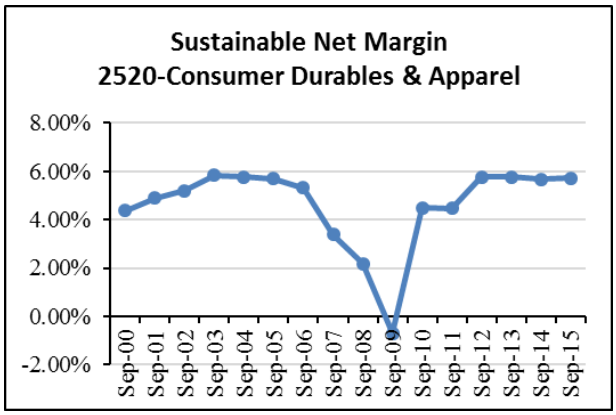

Operating Cash Margin
2030-Transportation
20.00%
15.00%
10.00%
5.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

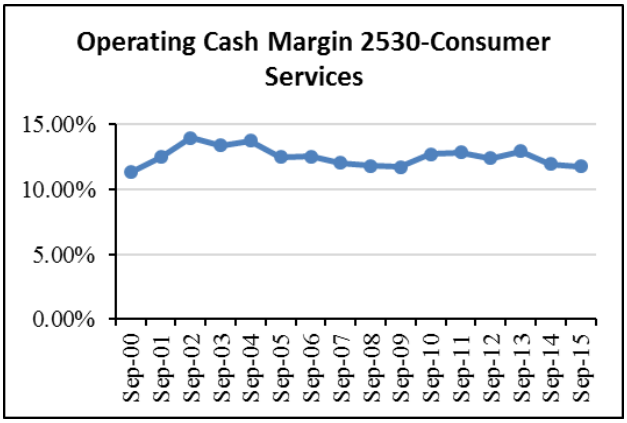

Sustainable Net Margin
2030-Transportation
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

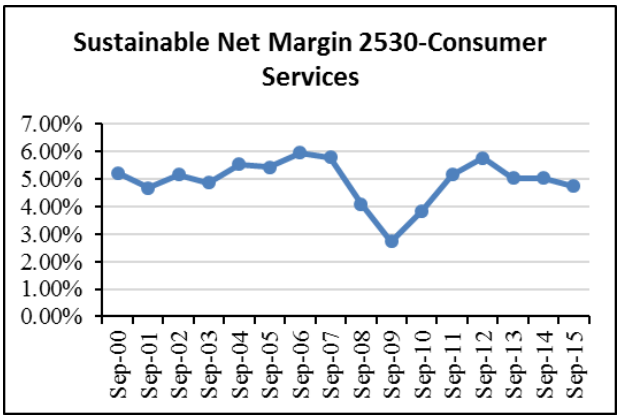

Operating Cash Margin
2510-Automobiles & Components
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

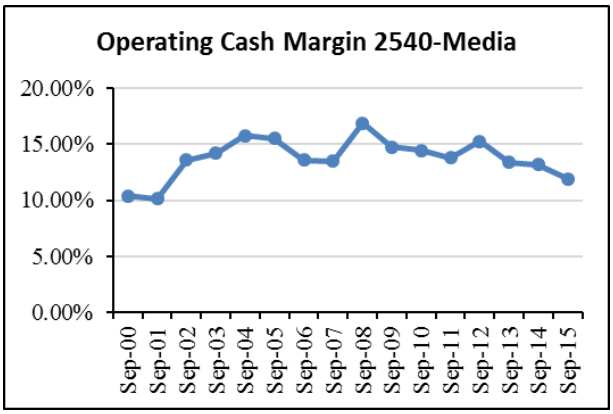

Sustainable Net Margin
2510-Automobiles & Components
6.00%
4.00%
2.00%
0.00%
-2.00%
-4.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

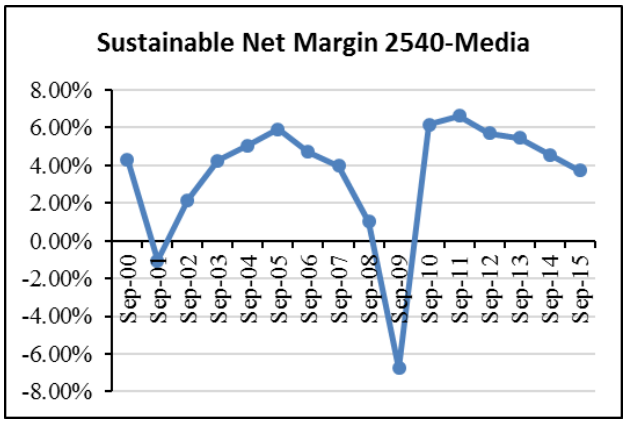

Operating Cash Margin
2520-Consumer Durables & Apparel
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

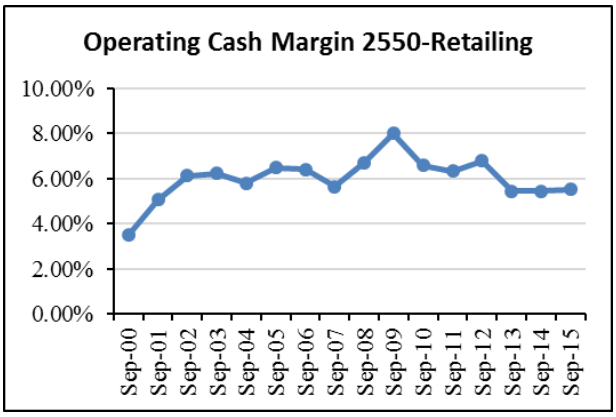

Sustainable Net Margin
2520-Consumer Durables & Apparel
8.00%
6.00%
4.00%
2.00%
0.00%
-2.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

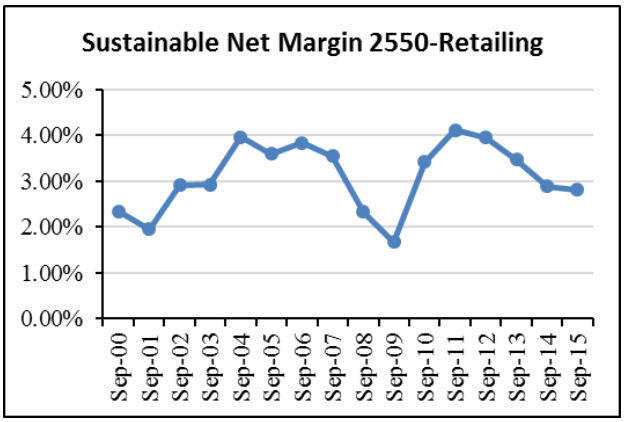

Operating Cash Margin 2530-Consumer
Services
15.00%
10.00%
5.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

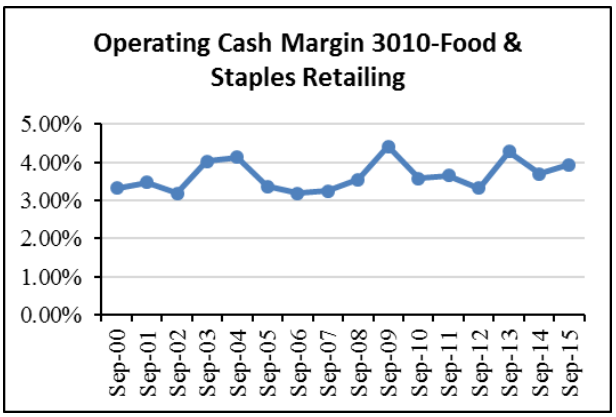

Sustainable Net Margin 2530-Consumer
Services
7.00%
6.00%
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

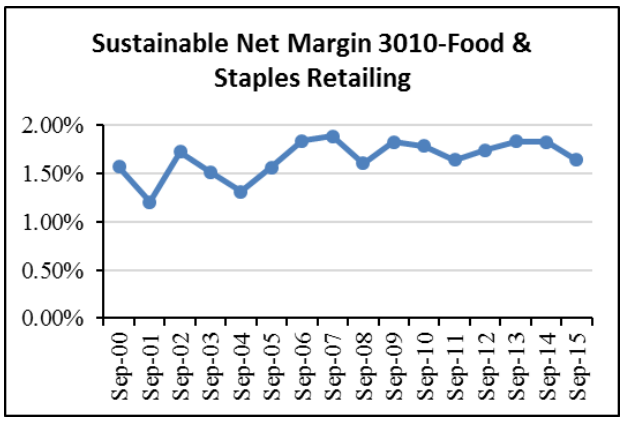

Operating Cash Margin 2540-Media
20.00%
15.00%
10.00%
5.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

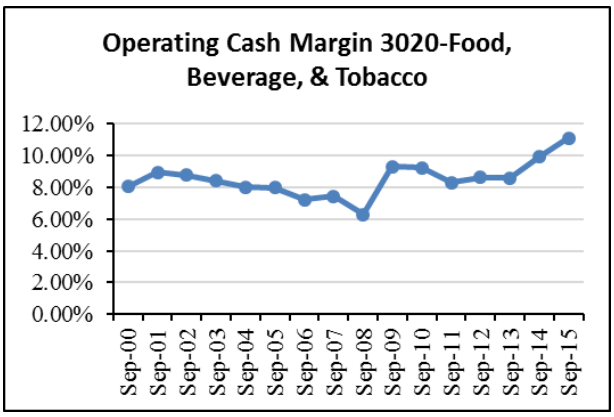

Sustainable Net Margin 2540-Media
8.00%
6.00%
4.00%
2.00%
0.00%
-2.00%
-4.00%
-6.00%
-8.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

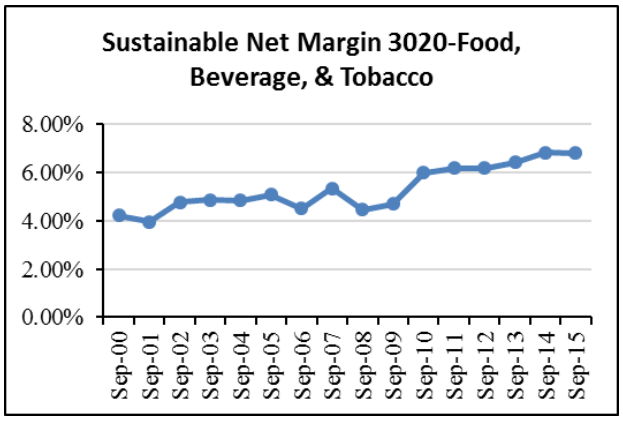

Operating Cash Margin 2550-Retailing
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

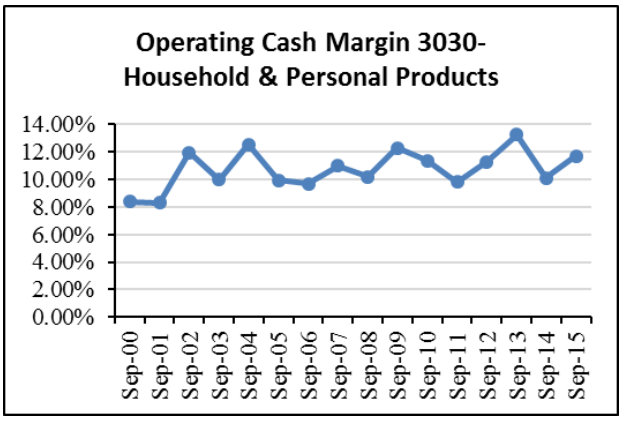

Sustainable Net Margin 2550-Retailing
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

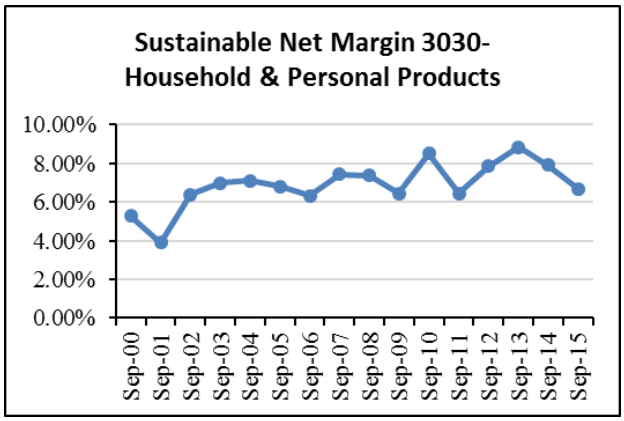

Operating Cash Margin 3010-Food & Staples Retailing
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

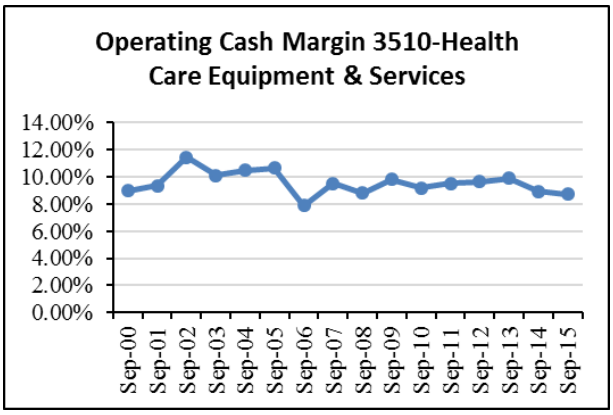

Sustainable Net Margin 3010-Food & Staples Retailing
2.00%
1.50%
1.00%
0.50%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

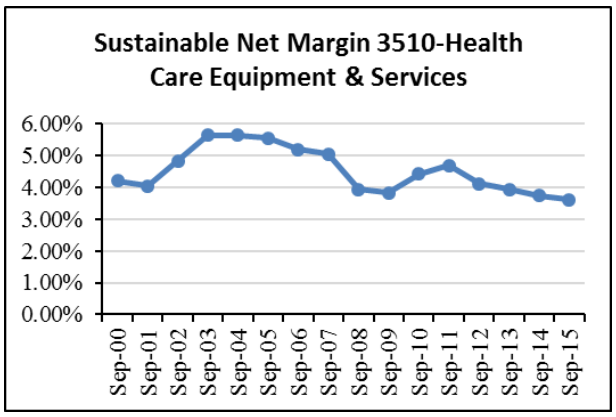

Operating Cash Margin 3020-Food, Beverage, & Tobacco
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

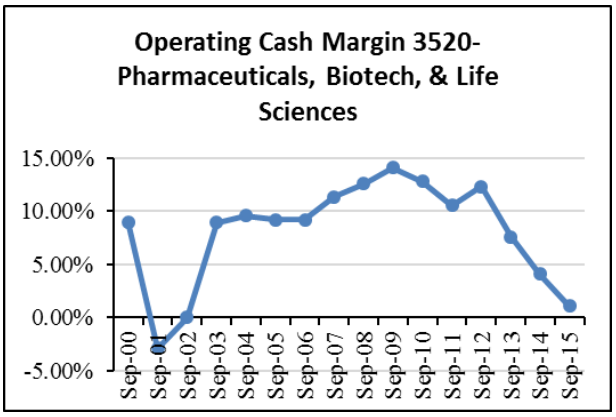

Sustainable Net Margin 3020-Food, Beverage, & Tobacco
8.00%
6.00%
4.00%
2.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

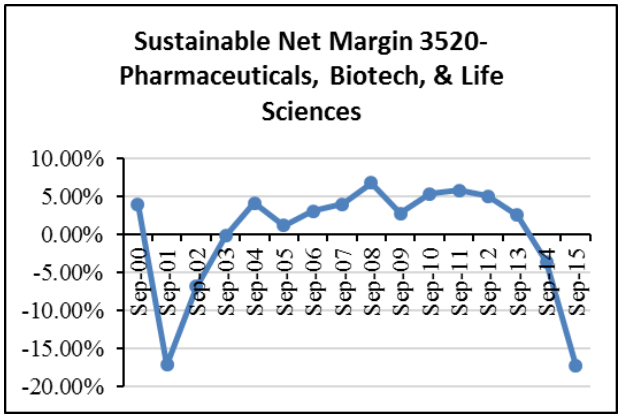

Operating Cash Margin 3030-Household & Personal Products
14.00%
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
Sep-00 Sep-01 Sep-02 Sep-03 Sep-04 Sep-05 Sep-06 Sep-07 Sep-08 Sep-09 Sep-10 Sep-11 Sep-12 Sep-13 Sep-14 Sep-15

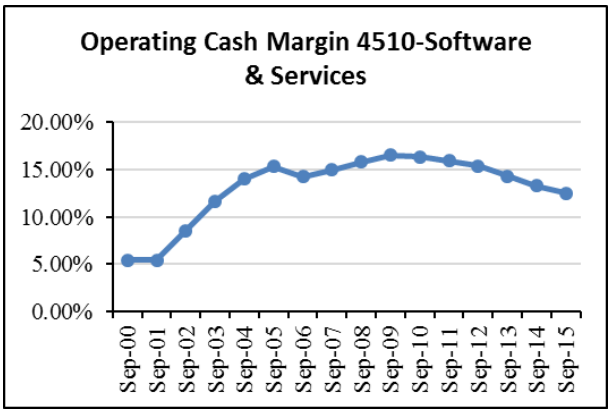

Sustainable Net Margin 3030-Household & Personal Products
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
Sep-00 Sep-01 Sep-02 Sep-03 Sep-04 Sep-05 Sep-06 Sep-07 Sep-08 Sep-09 Sep-10 Sep-11 Sep-12 Sep-13 Sep-14 Sep-15

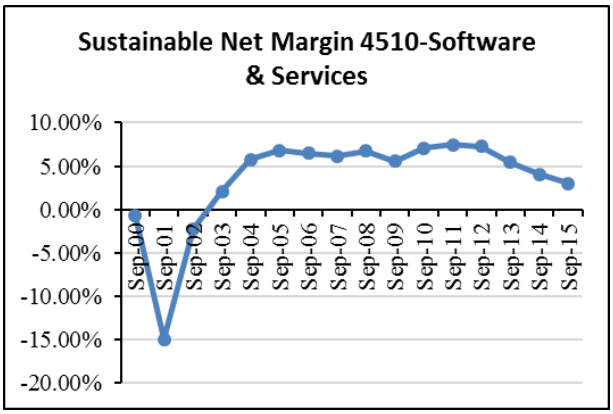

Operating Cash Margin 3510-Health Care Equipment & Services
14.00%
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
Sep-00 Sep-01 Sep-02 Sep-03 Sep-04 Sep-05 Sep-06 Sep-07 Sep-08 Sep-09 Sep-10 Sep-11 Sep-12 Sep-13 Sep-14 Sep-15

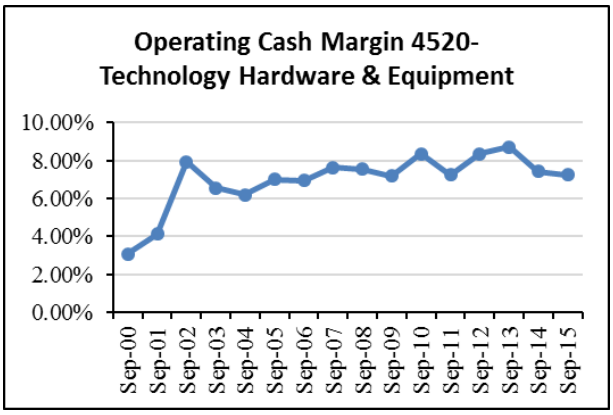

Sustainable Net Margin 3510-Health Care Equipment & Services
6.00%
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
Sep-00 Sep-01 Sep-02 Sep-03 Sep-04 Sep-05 Sep-06 Sep-07 Sep-08 Sep-09 Sep-10 Sep-11 Sep-12 Sep-13 Sep-14 Sep-15

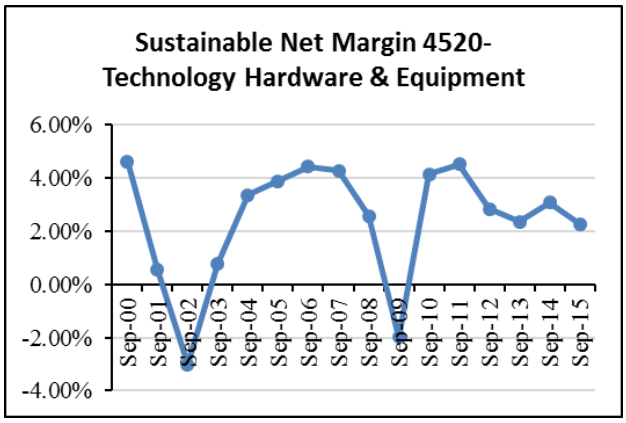

Operating Cash Margin 3520-Pharmaceuticals, Biotech, & Life Sciences
15.00%
10.00%
5.00%
0.00%
-5.00%
Sep-00 Sep-01 Sep-02 Sep-03 Sep-04 Sep-05 Sep-06 Sep-07 Sep-08 Sep-09 Sep-10 Sep-11 Sep-12 Sep-13 Sep-14 Sep-15

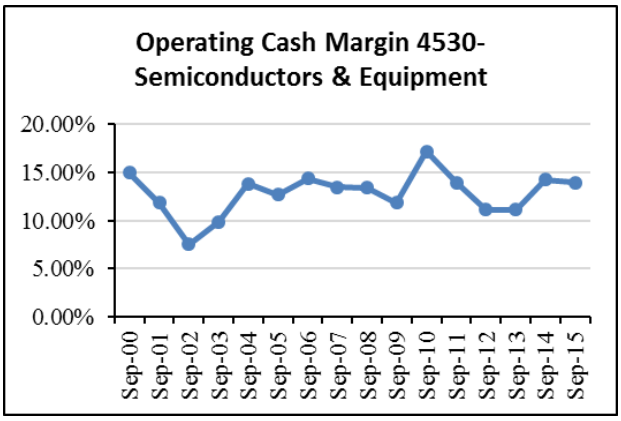

Sustainable Net Margin 3520-Pharmaceuticals, Biotech, & Life Sciences
10.00%
5.00%
0.00%
-5.00%
-10.00%
-15.00%
-20.00%
Sep-00 Sep-01 Sep-02 Sep-03 Sep-04 Sep-05 Sep-06 Sep-07 Sep-08 Sep-09 Sep-10 Sep-11 Sep-12 Sep-13 Sep-14 Sep-15

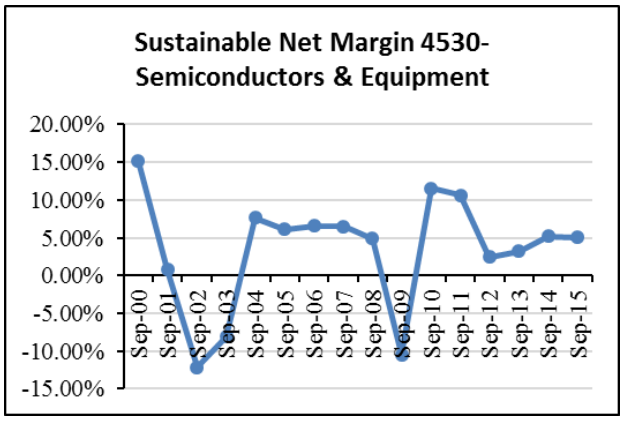

Operating Cash Margin 4510-Software & Services
20.00%
15.00%
10.00%
5.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

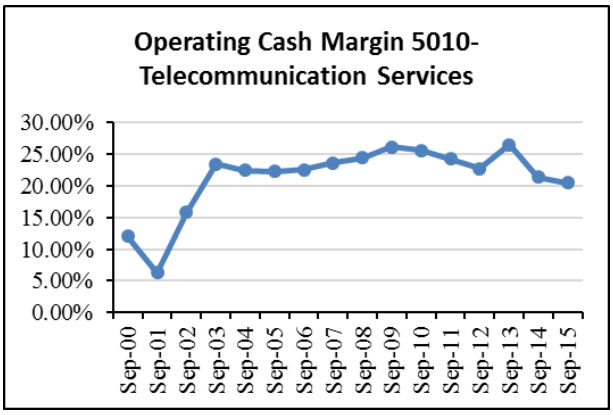

Sustainable Net Margin 4510-Software & Services
10.00%
5.00%
0.00%
-5.00%
-10.00%
-15.00%
-20.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

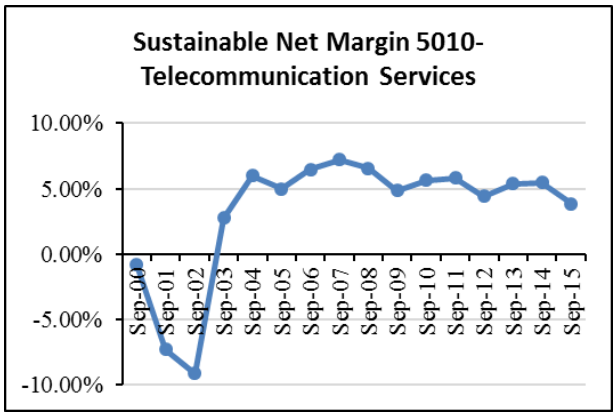

Operating Cash Margin 4520- Technology Hardware & Equipment
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

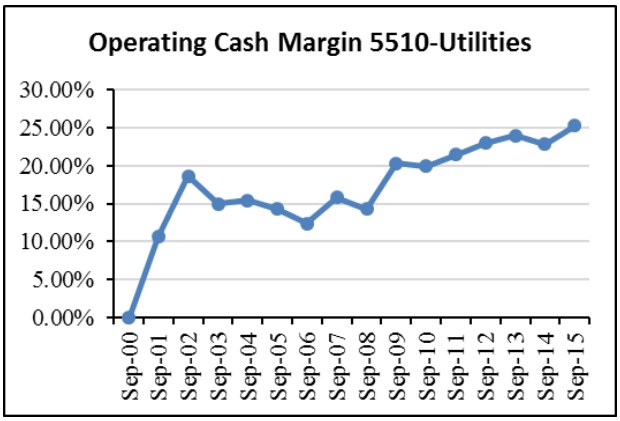

Sustainable Net Margin 4520- Technology Hardware & Equipment
6.00%
4.00%
2.00%
0.00%
-2.00%
-4.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15

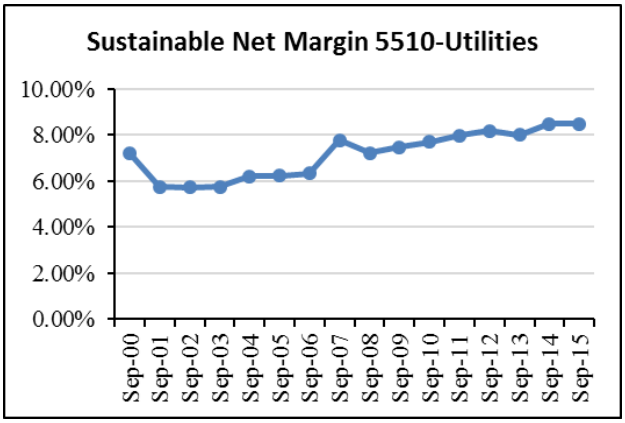

Operating Cash Margin 4530- Semiconductors & Equipment
20.00%
15.00%
10.00%
5.00%
0.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15


Sustainable Net Margin 4530- Semiconductors & Equipment
20.00%
15.00%
10.00%
5.00%
0.00%
-5.00%
-10.00%
-15.00%
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15









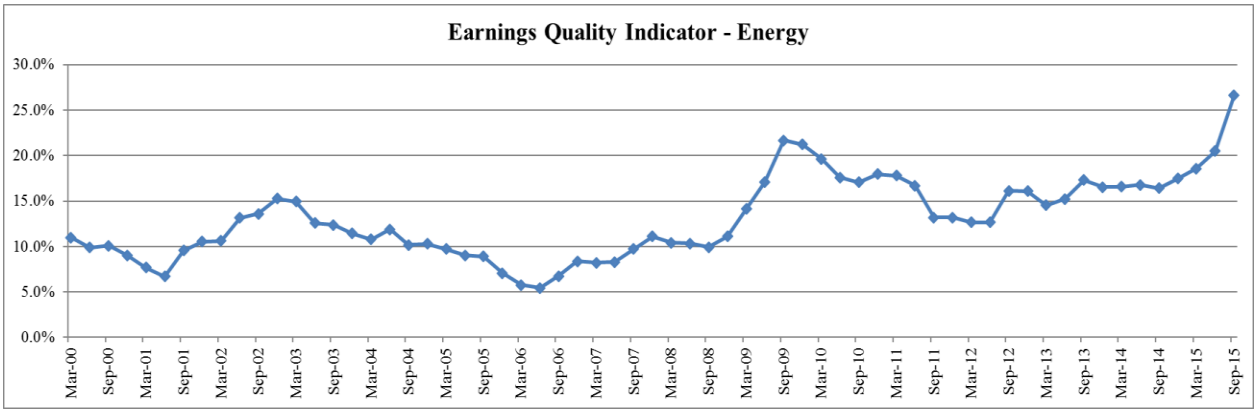
A Closer Look at the Energy Industry

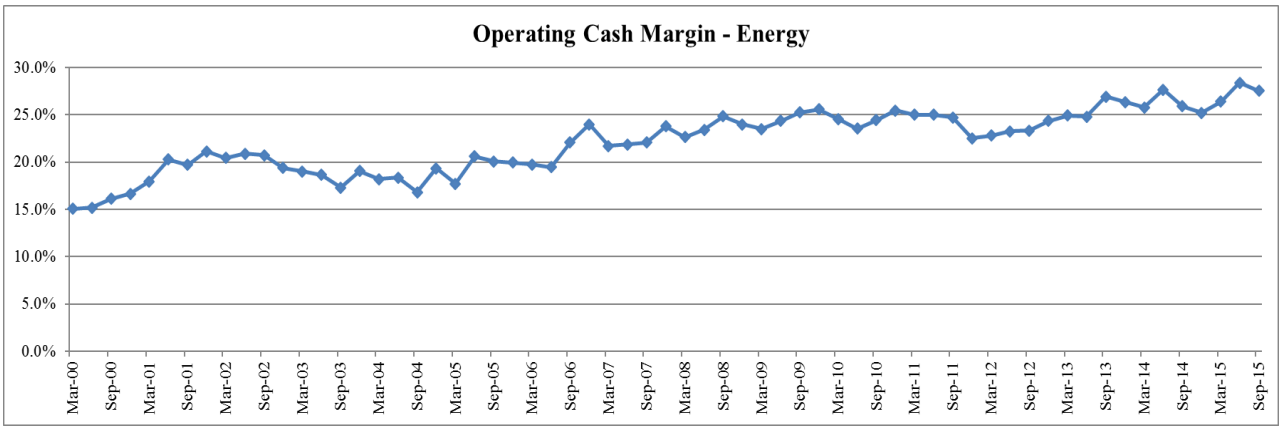
During the course of collecting data we noted a particularly strong increase in EQI for the Energy industry and decided to take a closer look. Median trailing three months EQI for the industry increased from 16.41% to 26.62% between September 2014 and September 2015. During that period, median operating cash margin rose slightly from 25.89% to 27.55% while sustainable net margin declined from 6.53% to 0.96%. Again, the use of median data for the energy industry, while representative, produces an EQI that does not equal the difference between sustainable operating cash margin and sustainable net margin. This is because the three measurements often come from different companies.

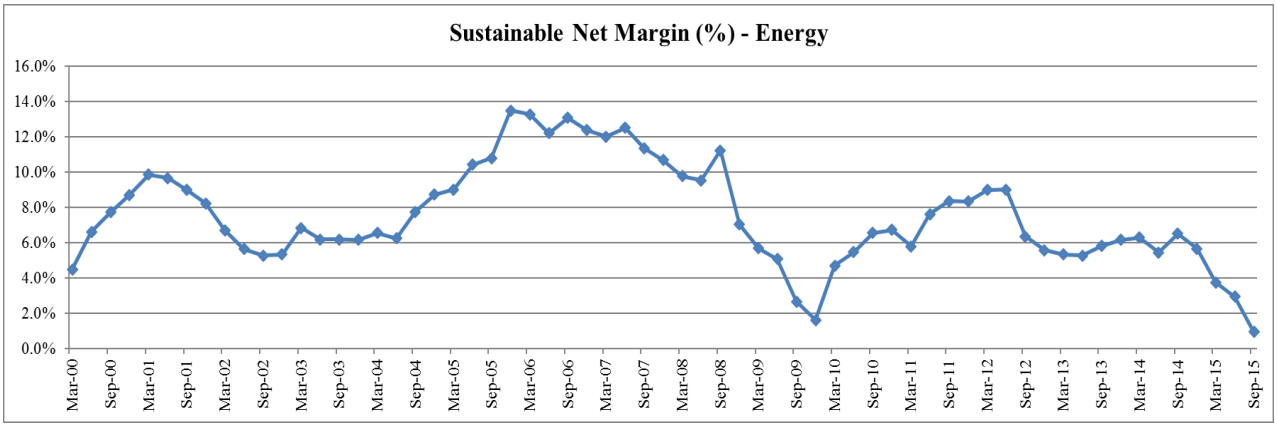
The minimal rise in median operating cash margin can mainly be attributed to decreased receivables days even though there was a slight reduction in payables days as well. Median operating payables days decreased from 30 days to 25 days. Median receivables days decreased from 52 days to 44 days. Median inventory days remained more or less the same. These trends in more favorable payment terms are a source of operating cash flow.

Median sustainable net margin decreased since September 2014 primarily due to deteriorating gross margin from core operations and increasing SG&A expenses. Median gross margin from core operations decreased from 41.96% to %. This reduction in margin is the result of reduced energy/oil prices and the companies have tried to offset it by reducing the capital expenditures, especially since June 2015.

Rising EQI indicates that operating cash flow is growing faster or declining slower than net income, leading to a decline in non-cash balance sheet accounts. In the case of the current trend in the energy industry, we believe that increasing EQI may portend reduced operating cash flow in the periods to come. Reduced revenues, gross margins and net margins are indicators of the pressures on the operating cash flows even though we see rising EQI – the Net margins have been dropping faster than the operating cash flows.







Summary and Conclusion

The Earnings Quality Indicator, calculated as operating cash margin minus net margin, measures earnings quality on the cash dimension. When the ratio declines for extended periods, earnings are not backed by cash flow. As a result, non-cash accounts may accumulate on the balance sheet. If these accounts are not realized, write-downs may ensue, reducing future earnings. Also, the balance sheet may see reductions in operating liabilities, such as accrued expenses payable and deferred revenue. Here future earnings may suffer as accruals are increased and the income statement loses the support of revenues recognized currently that were collected previously. When EQI rises for extended periods the balance sheet is likely being liquidated – a development that cannot be used to support operating cash flow for the long run.

A stable EQI, showing no discernible trend, is one that does not raise similar questions about the sustainability of earnings or cash flow going forward. Median EQI for all non-financial industries has stabilized around normal levels – levels that existed prior to the recent recession. In future periods, we would expect EQI to remain stable around current levels. Significant increases or declines from this level could be cause for concern.