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Cash Flow Trends and Their Fundamental Drivers: Comprehensive Review (Quarter 1-4, 2021)

Free Cash Margin Index:

0.99%, 3.45%
Recession Lows
(Dec 2000, Dec 2008)

4.04%
Current
(Dec 2021)

7.20%
Recent High
(Dec 2020)

Median free cash margin started 2021 with a 73 bps increase to 7.93% in March 2021 compared to December 2020 and then decreased dramatically throughout the remainder of 2021. Free cash margin dropped to 6.70% in June 2021 (123 bps decrease since March), 5.00% in September 2021 (170 bps decrease since June), and 4.04% in December 2021 (96 bps decrease since September). In 2020, free cash margin ranged from 4.43-7.20%.

The continued declines in free cash margin occurred despite ups and downs in revenues and operating cushion throughout 2021, which contrasted with the increasing trend in free cash margin in 2020. The decreases in free cash margin were largely driven by increases in capital expenditures and income taxes as a percentage of revenue.

Median revenues continued a downward trend from 2020, except for June 2021. Revenues declined by 4.05% to \$995.95 million in March 2021 from \$1,038.00 million in December 2020 and bounced back to \$1,035.79 million (a 4% increase from the prior quarter) in June 2021. Revenues then decreased in the latter half of 2021. Fluctuations in revenues were flatter in 2020, with an average decrease of 2.96%.

Median operating cushion went up 55 bps to 12.52% in March 2021 compared to 11.97% in December 2020. Gross margin reached its highest point of 38.41% in December 2021 (of the reporting periods covered by this report - March 2000- December 2021). SG&A spending as a percentage of revenue fluctuated in 2021, settling at 19.78% in December 2021; it was 19.30% in December 2020.

Median capital expenditures as a percentage of revenues went down throughout 2020 and the first half of 2021, ranging from 2.94-3.72%, but bounced back in the latter half of 2020. Capital expenditures as a percentage of revenues bounced back to 2.97% in September 2021 and then to 3.13% in December 2021.

Data for this research were obtained through Wharton Research Data Services.

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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 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 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.

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**Cash Flow Trends and Their Fundamental Drivers:
Comprehensive Industry Review (Quarter 4, 2021)**

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Cash Flow Trends and Their Fundamental Drivers: Comprehensive Industry Review (Quarter 4, 2021)

Free Cash Margin Index*:		
0.99%, 3.45%	4.04%	7.20%
Recession Lows (Dec 2000, Dec 2008)	Current (Dec 2021)	Recent High (Dec 2020)

The ***Free Cash Margin Index** is free cash flow measured as a percentage of revenue for the trailing twelve-month period.

Introduction

This research report is part of a continuing series that examines cash flow trends and the underlying drivers that are causing changes in those trends. The current study contains a review of the cash flow performance of all non-financial companies for a series of rolling twelve-month periods from the first quarter of 2000 through the fourth quarter of 2021. Additionally, it looks at individual industry results and focuses its attention on the drivers that pushed free cash margin higher or lower in those industries. All companies with total assets of \$100 million or more are included, resulting in a total sample of 2954 companies. Please see page 6 for a list of industries included. That list is followed by a summary of the findings.

Measured as free cash flow divided by revenue, free cash margin is a cash flow profit margin. It indicates what percent of revenue is left for shareholders in the form of free and discretionary cash flow. If the company sells its products or services for a dollar, free cash margin tells how many cents the shareholders can take home without reducing the company's ability to generate more. Thus, as the report looks at cash flow trends and their underlying drivers, its particular interest is on how those factors impact free cash margin.

Continuous Focus on Cash Flow

Corporate financial success is dependent not only on a company's ability to generate revenues and earnings, but also cash flow, especially free cash flow. It is free cash flow and growth in free cash flow, that discretionary stream of cash that a company can put to use for acquisitions, debt retirement, dividends, and stock buybacks that works with growing earnings to drive firm value higher.

Because it is “free,” free cash flow comes with no strings attached. It is truly discretionary. Spending it does not impact the company's ability to generate more. A company with revenue growth will eventually lose the favor of investors if it never finds a way to generate earnings. In a similar way, a company with profits that is unable to generate cash will also experience waning investor enthusiasm. It may take a while. Investors are patient with profitable, growing companies. Ultimately, however, a company must show an ability to generate free cash flow.

Companies that consume cash must continually seek new sources of capital – whether debt or equity. At some point, those sources of capital will dry up or become prohibitively expensive if the firm does not show at least some progress toward getting closer to positive cash generation. Worse, if cash flow does not back a company's earnings, ultimately, those earnings themselves may become suspect, necessitating write-downs of the resulting non-cash assets. Net losses will likely accompany those write-downs.

When free cash margin is positive, a firm is covering all ongoing claims and is able to pay dividends, reduce debt or simply add to its cash coffers. When free cash margin turns negative, ongoing claims are not being met. Cash and short-term investments can be used to meet the shortfall. However, on-hand cash and short-term investments are not an unlimited source of funds. Firms can borrow money to meet their needs. However, even if this were an option, increasing debt levels add new, unwanted risks. Equity issues provide another avenue, but capital markets can be painfully dilutive when share prices are depressed for firms that are seemingly unable to generate cash.

During periods of growth, firms may have problems generating cash as profits are consumed with growth-related investments in working capital and property, plant, and equipment needed to support that growth. During recessions, cash generation can be particularly problematic as revenues and profits decline, draining the economic engine that supports cash generation. Regardless of the economic environment, however, free cash margin serves as an important measure of long-term financial health for individual companies, industries, and the economy as a whole. The Lab thinks that by periodically examining their cash-generating ability, readers will gain insight into the overall financial health of important segments of U.S. firms. With all “nonfinancial firm industry” data dating back to 2000, it is possible to see how the cash-generating performance of these firms presently compares with their performance during previous periods of economic contraction (e.g., 2001 and 2008-2009) and economic expansion.

Cash Flow Definitions

Free cash flow is the cash flow equivalent of the income statement “bottom line”. Like net income, free cash flow is available for shareholders after all prior claims have been satisfied. However, like net income, which, to facilitate analysis, can be divided into certain sub-measures of performance, like gross profit and operating profit, free cash flow can be similarly divided. Thus, while the primary focus of the report is on free cash flow and free cash margin, or free cash flow as a percentage of revenue, it analyzes the fundamental drivers underlying two distinct but also closely related measures of cash flow:

- 1) Operating cash flow and operating cash margin - cash flow from operations after interest charges and income taxes. Operating cash margin is operating cash flow divided by revenue.
- 2) Free cash flow and free cash margin - cash flow available for common shareholders that can be used for such discretionary purposes as stock buybacks and dividends without affecting the firm’s ability to grow and generate more. This measure is calculated as operating cash flow less preferred dividends and net capital expenditures. Free cash margin is free cash flow divided by revenue.

The drivers of improvements or declines in free cash margin consist of factors that impact profitability and efficiency. On the profitability front, operating cushion measures operating profit, exclusive of the non-cash expenses, depreciation, and amortization. Factors impacting operating cushion consist of gross margin (excluding depreciation and amortization) and SG&A% (excluding depreciation and amortization). Also impacting profitability and a firm’s ability to generate free cash flow, but excluded from operating cushion, is income taxes paid, which is measured as a percent of revenue.

Capital expenditures do not impact profitability directly but through depreciation on fixed asset additions. However, these expenditures are subtracted in computing free cash flow. It is also important to look at capital expenditures because these are investments in fixed assets that will likely improve a company’s ability to generate revenue, and subsequent profit, in the future. Like operating expenses and taxes, capital expenditures are measured as a percent of revenue.

On the efficiency front, increases in receivables and inventory consume free cash flow. Increases in accounts payable provide free cash flow. The combination of receivables days plus inventory days less payables days is a firm’s cash cycle. Reductions in the cash cycle provide free cash flow, while increases in the cash cycle consume free cash flow. All of these factors are evaluated when analyzing changes in free cash margin for the standout firms discussed in this section.

Data and Methodology

The data is provided by Compustat through a license with the Wharton Research Data Services. As noted, each data amount is for a rolling twelve-month period ending with the quarter end in question. For example, cash flow amounts for December 31, 2021 represent amounts for the twelve months (four quarters) ended December 31, 2021.

The 20 analyzed industry groups are as follows:

GICS	Industry Group
1010	Energy
1510	Materials
2010	Capital Goods
2020	Commercial & Professional Services
2030	Transportation
2510	Automobiles & Components
2520	Consumer Durables & Apparel
2530	Consumer Services
2550	Retailing
3010	Food & Staples Retailing
3020	Food, Beverage, & Tobacco
3030	Household & Personal Products
3510	Health Care Equipment & Services
3520	Pharmaceuticals, Biotech, & Life Sciences
4510	Software & Services
4520	Technology Hardware & Equipment
4530	Semiconductors & Equipment
5010	Telecommunication Services
5020	Media
5510	Utilities

The 20 industry groups use the four-digit Global Industrial Classification System (GICS) and represent 10 overall sectors. The ten sectors with industry groups included in parentheses are Energy (Energy), Materials (Materials), Industrials (Capital Goods, Commercial & Professional Services, and Transportation), Consumer Discretionary (Automobiles & Components, Consumer Durables & Apparel, Consumer Services, Media and Retailing), Consumer Staples (Food & Staples Retailing, Food, Beverage & Tobacco and Household & Personal Products), Health Care (Health Care Equipment & Services and Pharmaceuticals, Biotech & Life Sciences), Information Technology (Software & Services, Technology Hardware & Equipment and Semiconductors & Equipment), Telecommunications (Telecommunication Services) and Utilities (Utilities).

Summary of Results for All Non-Financial Companies

Median free cash margin increased to 7.93% for the twelve months ending March 2021, compared to 7.20% for the twelve months ending December 2020 but decreased throughout the remainder of 2021. Free cash margin increased throughout 2020, at 4.43%, 5.93%, and 6.77%, and ended at 7.20% in December 2020. Free cash margin decreased to 6.70% in June 2021, 5.00% in September 2021, and 4.04% in December 2021.

Factors impacting the year-over-year variations in free cash margin were fluctuations in capital expenditures as a percentage of revenue and income tax as a percentage of revenue. We saw revenues first increase and then decrease during 2021; gross margin increased throughout 2021; operating cushion improved in the first half of the year but then dipped in the latter half.

Median revenues continued a downward trend from 2020, except for June 2021. Revenues declined by 4.05% to \$995.95 million in March 2021 from \$1,038.00 million in December 2020 and bounced back to \$1,035.79 million in June 2021. Revenues then decreased to \$988.95 million in September 2021 and \$974.02 million in December 2021, a 6.16% decrease relative to December 2020. Fluctuations in revenues were flatter in 2020, ranging from a 1.47% decrease to a 5.70% decrease.

Gross margin was at 37.14% during the twelve months ending December 2020. It climbed to 37.43% in March 2021, 37.97% in June 2021, 38.31% in September 2021, and 38.39% in December 2021. Operating cushion, or operating profit before depreciation, continued the increasing trend from 2020, jumping to 12.52% in March 2021 from 11.97% in December 2020. June, September, and December 2021 ranged from 12.65% to 13.38%.

Capital spending as a percentage of revenue continued to decrease throughout 2020 and in the first half of 2021. Capital spending increased in September and December 2021, bouncing to 2.97% and 3.13%, respectively (though still down from a range of 3.18-3.72% in 2020). Income taxes as a percentage of revenue improved from a range of 0.55-0.73% in 2020 to 0.75% in March and then to 0.88-0.91% in June-December 2021.

In the tables on the following pages, we present free cash margin and several of its underlying drivers with a focus on year-over-year effects from December 2020 to 2021. We then present free cash margin and its drivers for each quarter of 2021 and 2020.

Drivers of Free Cash Margin

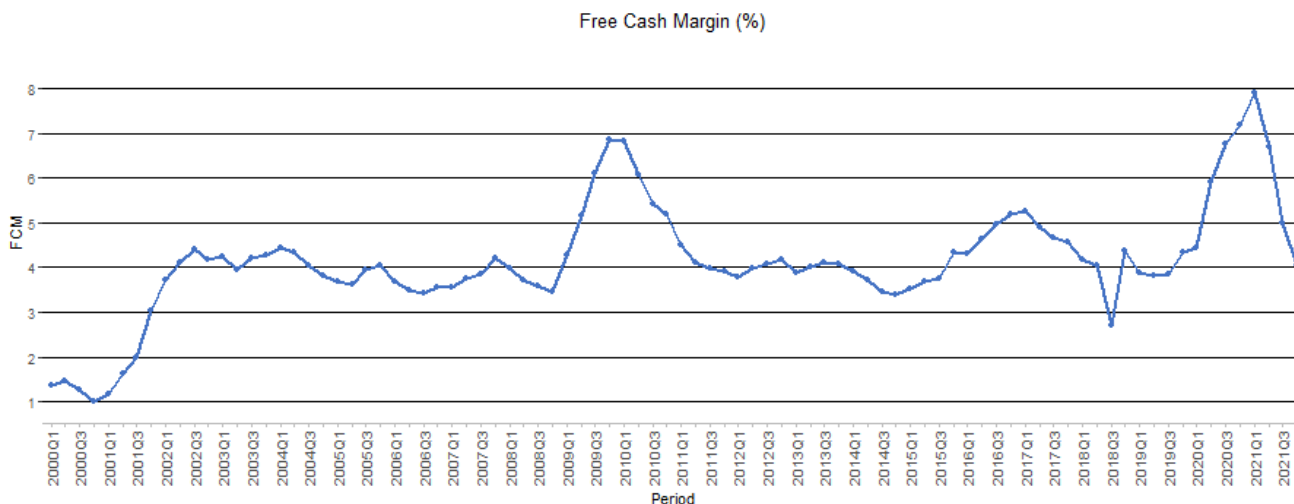
ALL NON-FINANCIAL INDUSTRIES	Q4 2021 (Dec 2021)	Q4 2020 (Dec 2020)	Effect on FCM (Q4 2021 vs. Q4 2020)
Revenue (\$Millions)	974.02	1,038.00	DOWN 6.16%
Free Cash Flow (\$Millions)	31.24	61.11	DOWN 48.88%
Free Cash Margin (%)	4.04	7.20	DOWN 316 bps
Operating Cushion (%)	12.65	11.97	Driving UP
Gross Margin before Depreciation (%)	38.39	37.14	Driving UP
SGA before Depreciation (%)	19.78	19.30	Driving UP
Cash Cycle (Revenue Days)	50.57	56.13	Driving DOWN
Accounts Receivable (Revenue Days)	55.96	56.27	Driving DOWN
Inventory (Revenue Days)	23.07	25.82	Driving DOWN
Accounts Payable (Revenue Days)	28.46	25.95	Driving UP
Income tax to Rev (%)	0.88	0.58	Driving UP
Cap Exp. to Rev (%)	3.13	3.18	Driving DOWN

ALL NON-FINANCIAL INDUSTRIES	Q4 2021 (Dec 2021)	Q3 2021 (Sep 2021)	Q2 2021 (Jun 2021)	Q1 2021 (Mar 2021)
Revenue (\$Millions)	974.02	988.95	1035.79	995.95
Free Cash Flow (\$Millions)	31.24	42.61	59.89	68.06
Free Cash Margin (%)	4.04	5.00	6.70	7.93
Operating Cushion (%)	12.65	12.96	13.38	12.52
Gross Margin before Depreciation (%)	38.39	38.31	37.97	37.43
SGA before Depreciation (%)	19.78	20.11	19.49	19.80
Cash Cycle (Revenue Days)	50.57	48.61	52.46	54.31
Accounts Receivable (Revenue Days)	55.96	55.14	56.14	56.98
Inventory (Revenue Days)	23.07	22.28	24.75	25.40
Accounts Payable (Revenue Days)	28.46	28.81	28.42	28.07
Income tax to Rev (%)	0.88	0.90	0.91	0.75
Cap Exp. to Rev (%)	3.13	2.97	2.94	3.03

ALL NON-FINANCIAL INDUSTRIES	Q4 2020 (Dec 2020)	Q3 2020 (Sep 2020)	Q2 2020 (Jun 2020)	Q1 2020 (Mar 2020)
Revenue (\$Millions)	1038.00	1053.46	1117.12	1152.58
Free Cash Flow (\$Millions)	61.11	60.90	53.82	45.87
Free Cash Margin (%)	7.20	6.77	5.93	4.43
Operating Cushion (%)	11.97	11.68	11.79	12.73
Gross Margin before Depreciation (%)	37.14	36.91	36.87	37.41
SGA before Depreciation (%)	19.30	19.62	19.29	18.71
Cash Cycle (Revenue Days)	56.13	51.59	48.65	49.04
Accounts Receivable (Revenue Days)	56.27	52.79	49.09	51.09
Inventory (Revenue Days)	25.82	24.71	24.12	22.99
Accounts Payable (Revenue Days)	25.95	25.92	24.56	25.04
Income tax to Rev (%)	0.58	0.55	0.56	0.73
Cap Exp. to Rev (%)	3.18	3.39	3.64	3.72

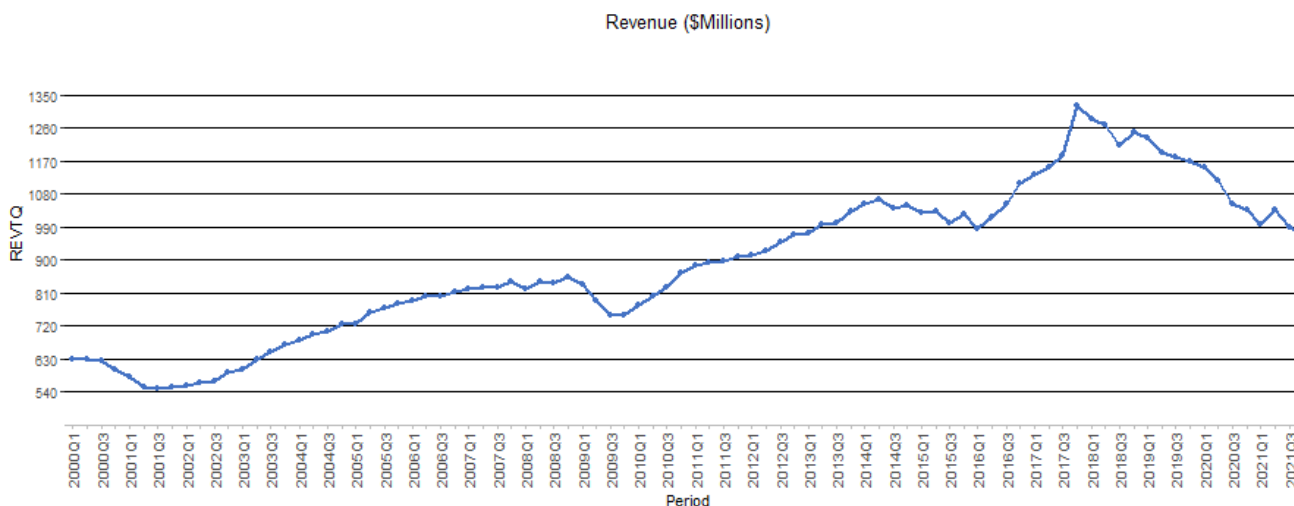
In the exhibits below, we present graphs of free cash margin and several of its underlying drivers. These exhibits were constructed with data from the complete sample of 2,954 non-financial companies. For more details on each of the 20 individual industry groups included, please refer to the individual industry spreadsheets and supporting charts that are available on our website (www.scheller.gatech.edu/centers-and-initiatives/financial-analysis-lab/).

All Non-financials, Q1 2000 – Q4 2021



	Q1 2020 (Mar 2020)	Q2 2020 (Jun 2020)	Q3 2020 (Sep 2020)	Q4 2020 (Dec 2020)	Q1 2021 (Mar 2021)	Q2 2021 (Jun 2021)	Q3 2021 (Sep 2021)	Q4 2021 (Dec 2021)
Free Cash Margin (%)	4.43	5.93	6.77	7.20	7.93	6.70	5.00	4.04

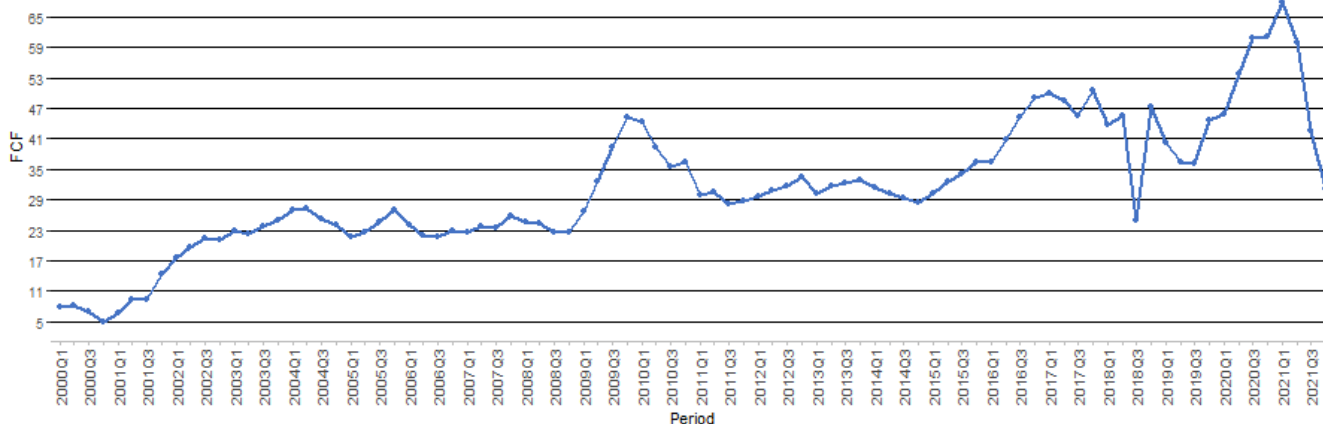
All Non-financials, Q1 2000 – Q4 2021



	Q1 2020 (Mar 2020)	Q2 2020 (Jun 2020)	Q3 2020 (Sep 2020)	Q4 2020 (Dec 2020)	Q1 2021 (Mar 2021)	Q2 2021 (Jun 2021)	Q3 2021 (Sep 2021)	Q4 2021 (Dec 2021)
Revenue (\$Millions)	1152.58	1117.12	1053.46	1038.00	995.95	1035.79	988.95	974.02

All Non-financials, Q1 2000 – Q4 2021

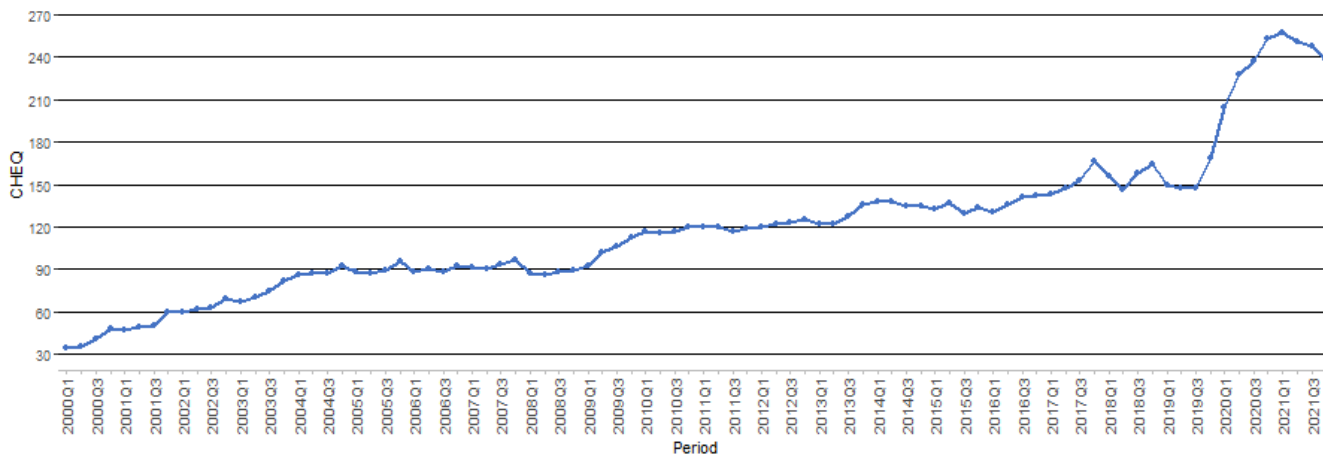
Free Cash Flow (\$Millions)



	Q1 2020 (Mar 2020)	Q2 2020 (Jun 2020)	Q3 2020 (Sep 2020)	Q4 2020 (Dec 2020)	Q1 2021 (Mar 2021)	Q2 2021 (Jun 2021)	Q3 2021 (Sep 2021)	Q4 2021 (Dec 2021)
Free Cash Flow (\$Millions)	45.87	53.82	60.90	61.11	68.06	59.89	42.61	31.24

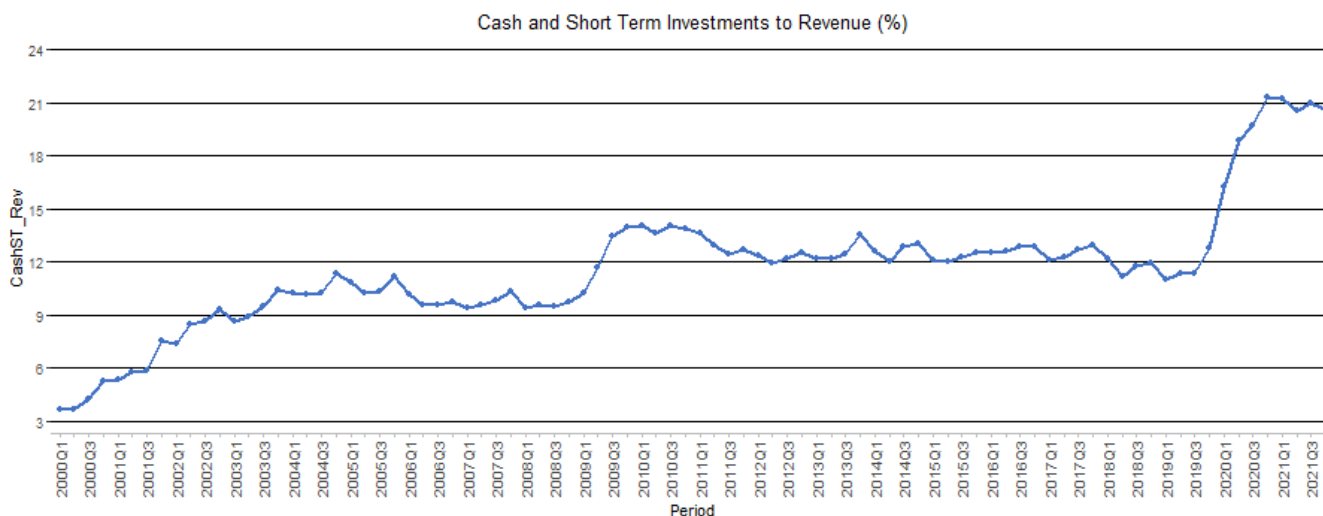
All Non-financials, Q1 2000 – Q4 2021

Cash and Short Term Investments (\$Millions)



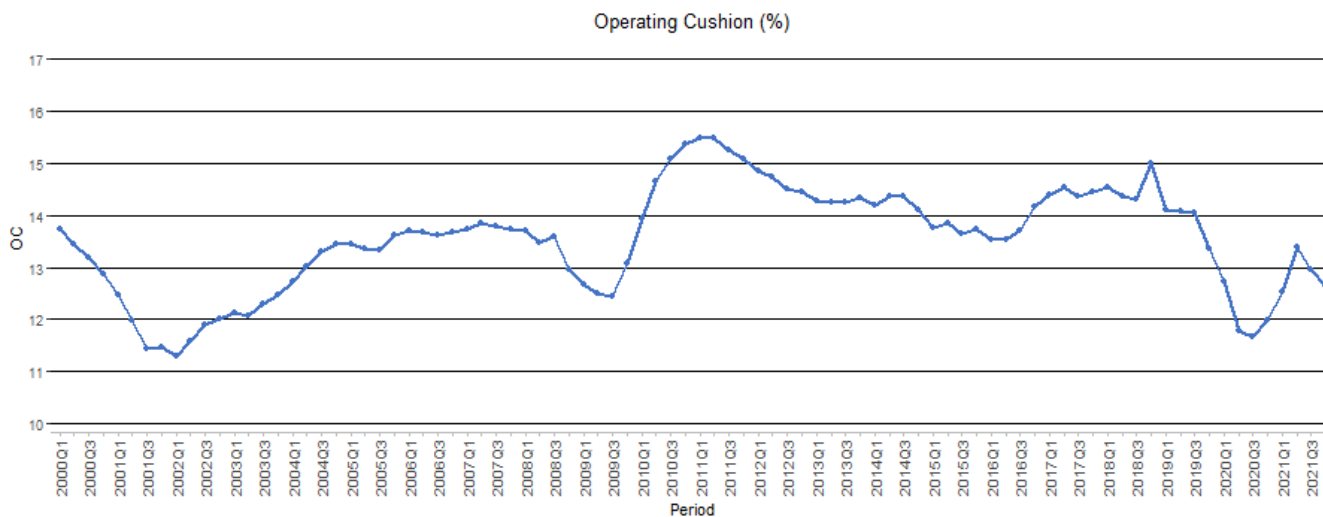
	Q1 2020 (Mar 2020)	Q2 2020 (Jun 2020)	Q3 2020 (Sep 2020)	Q4 2020 (Dec 2020)	Q1 2021 (Mar 2021)	Q2 2021 (Jun 2021)	Q3 2021 (Sep 2021)	Q4 2021 (Dec 2021)
Cash and Short Term Investments (\$Millions)	204.10	227.64	237.08	253.46	257.43	250.52	247.53	238.19

All Non-financials, Q1 2000 – Q4 2021



	Q1 2020 (Mar 2020)	Q2 2020 (Jun 2020)	Q3 2020 (Sep 2020)	Q4 2020 (Dec 2020)	Q1 2021 (Mar 2021)	Q2 2021 (Jun 2021)	Q3 2021 (Sep 2021)	Q4 2021 (Dec 2021)
Cash and Short Term Invest. to Revenue (%)	16.26	18.91	19.75	21.36	21.24	20.58	21.03	20.68

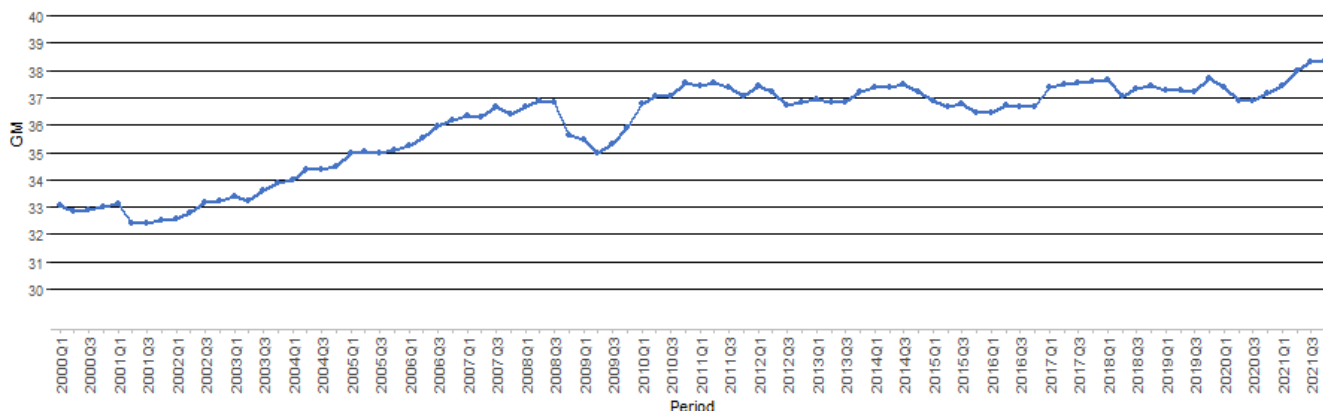
All Non-financials, Q1 2000 – Q4 2021



	Q1 2020 (Mar 2020)	Q2 2020 (Jun 2020)	Q3 2020 (Sep 2020)	Q4 2020 (Dec 2020)	Q1 2021 (Mar 2021)	Q2 2021 (Jun 2021)	Q3 2021 (Sep 2021)	Q4 2021 (Dec 2021)
Operating Cushion (%)	12.73	11.79	11.68	11.97	12.52	13.38	12.96	12.65

All Non-financials, Q1 2000 – Q4 2021

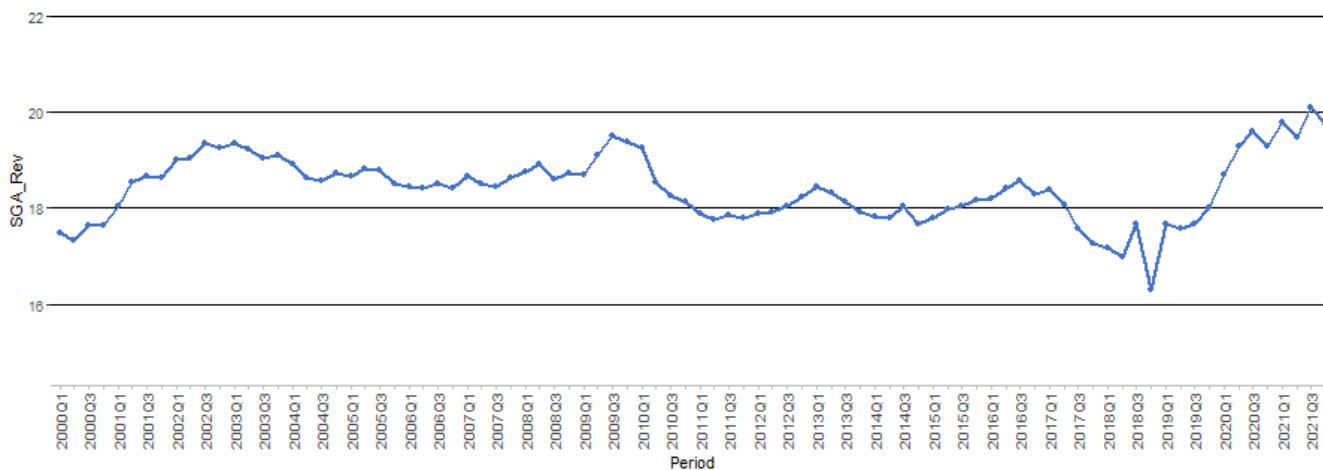
Gross Margin before Depr (%)



	Q1 2020 (Mar 2020)	Q2 2020 (Jun 2020)	Q3 2020 (Sep 2020)	Q4 2020 (Dec 2020)	Q1 2021 (Mar 2021)	Q2 2021 (Jun 2021)	Q3 2021 (Sep 2021)	Q4 2021 (Dec 2021)
Gross Margin before Depreciation (%)	37.41	36.87	36.91	37.14	37.43	37.94	38.31	38.39

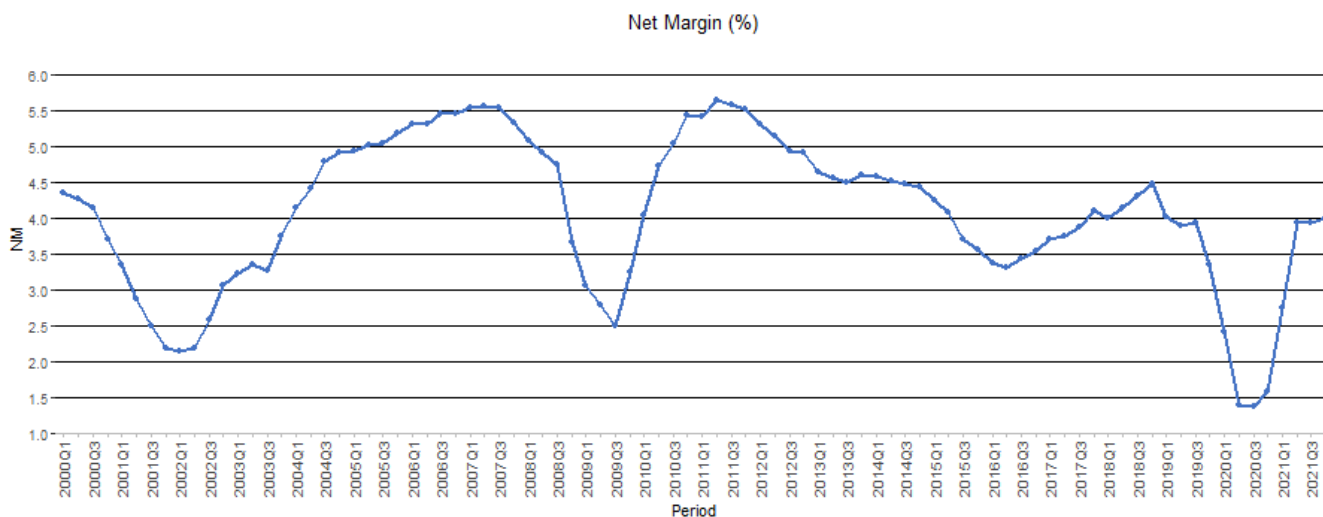
All Non-financials, Q1 2000 – Q4 2021

SG&A before Depr (%)



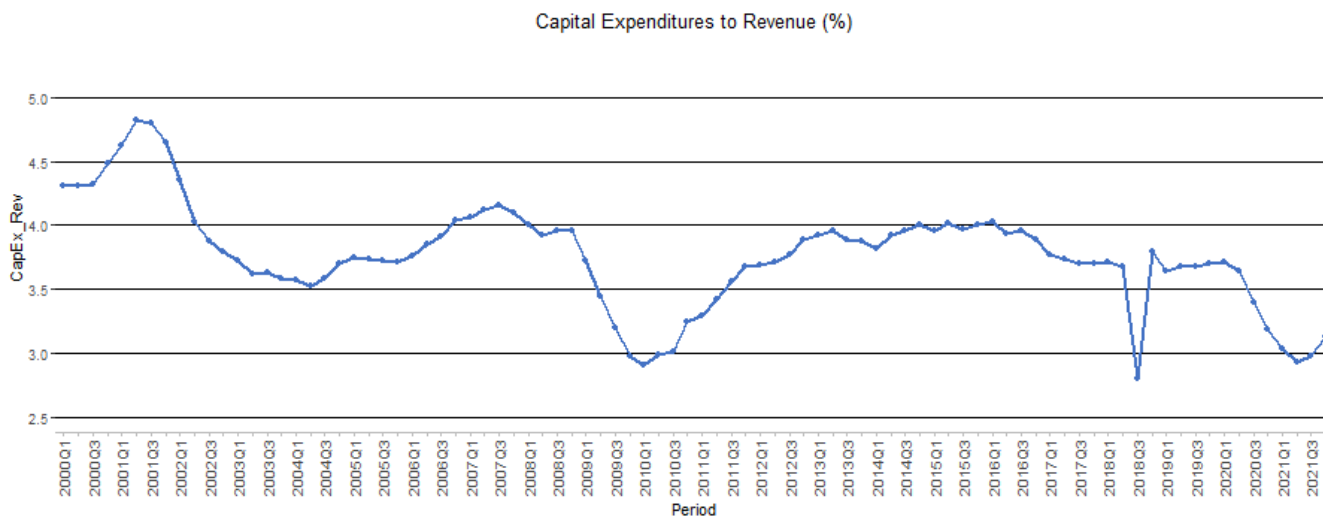
	Q1 2020 (Mar 2020)	Q2 2020 (Jun 2020)	Q3 2020 (Sep 2020)	Q4 2020 (Dec 2020)	Q1 2021 (Mar 2021)	Q2 2021 (Jun 2021)	Q3 2021 (Sep 2021)	Q4 2021 (Dec 2021)
SG&A before Depreciation (%)	18.71	19.29	19.62	19.30	19.80	19.49	20.11	19.78

All Non-financials, Q1 2000 – Q4 2021



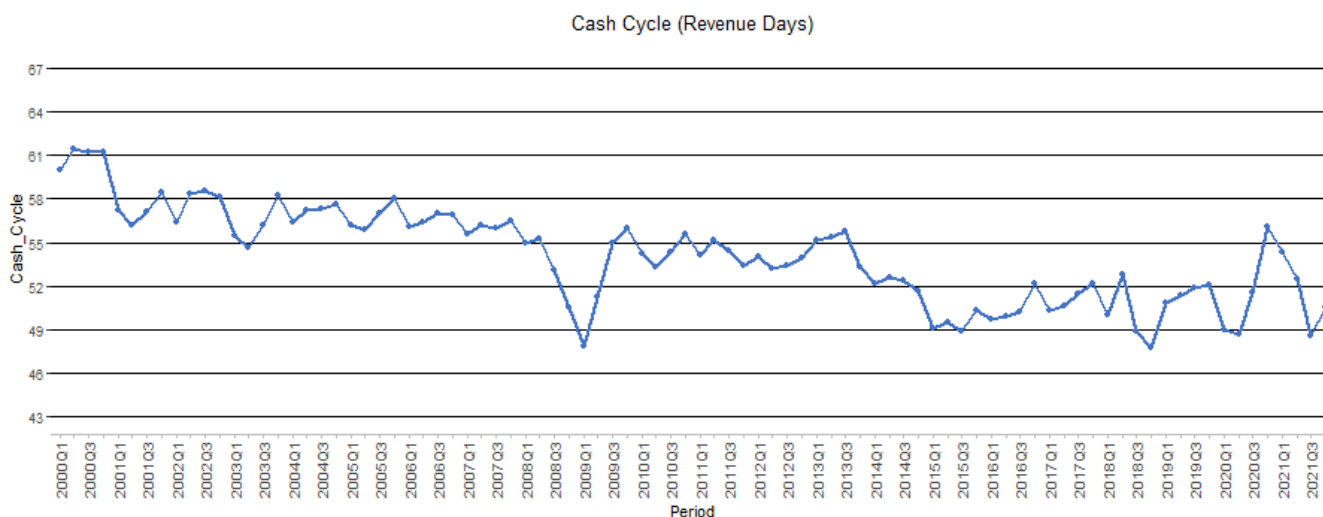
	Q1 2020 (Mar 2020)	Q2 2020 (Jun 2020)	Q3 2020 (Sep 2020)	Q4 2020 (Dec 2020)	Q1 2021 (Mar 2021)	Q2 2021 (Jun 2021)	Q3 2021 (Sep 2021)	Q4 2021 (Dec 2021)
Net Margin (%)	2.42	1.40	1.39	1.59	2.74	3.95	3.94	4.00

All Non-financials, Q1 2000 – Q4 2021



	Q1 2020 (Mar 2020)	Q2 2020 (Jun 2020)	Q3 2020 (Sep 2020)	Q4 2020 (Dec 2020)	Q1 2021 (Mar 2021)	Q2 2021 (Jun 2021)	Q3 2021 (Sep 2021)	Q4 2021 (Dec 2021)
Cap Exp. to Rev (%)	3.72	3.64	3.39	3.18	3.03	2.94	2.97	3.13

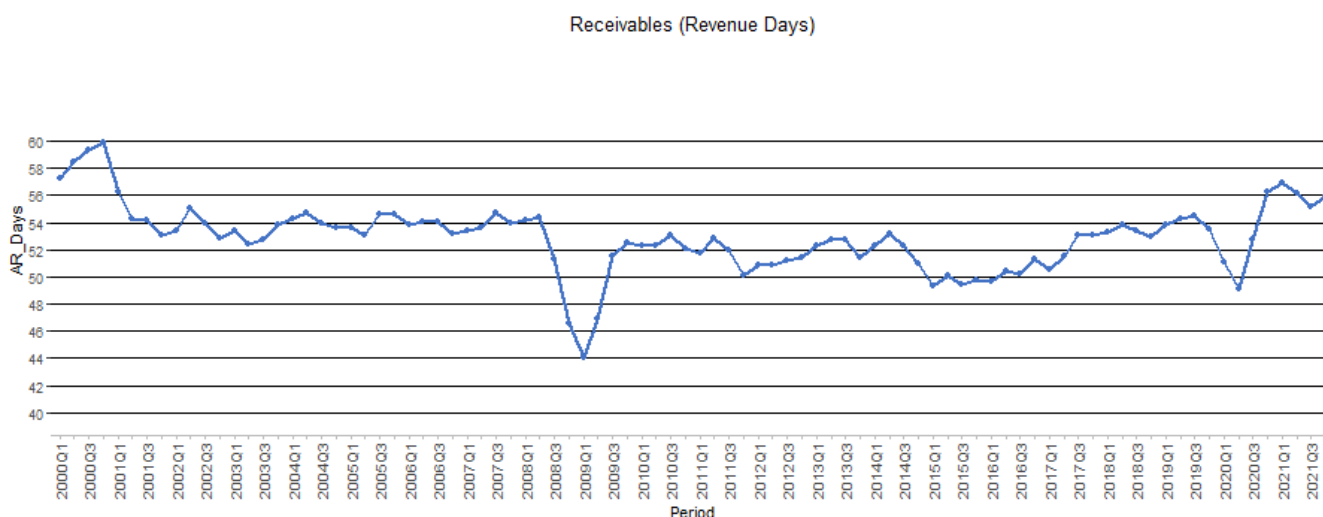
All Non-financials, Q1 2000 – Q4 2021



	Q1 2020 (Mar 2020)	Q2 2020 (Jun 2020)	Q3 2020 (Sep 2020)	Q4 2020 (Dec 2020)	Q1 2021 (Mar 2021)	Q2 2021 (Jun 2021)	Q3 2021 (Sep 2021)	Q4 2021 (Dec 2021)
Cash Cycle (Revenue Days)	49.04	48.65	51.59	56.13	54.31	52.46	48.61	50.57

The cash cycle measures the proportion of operating cash flow carried in working capital and is measured by receivables days plus inventory days less payables days.

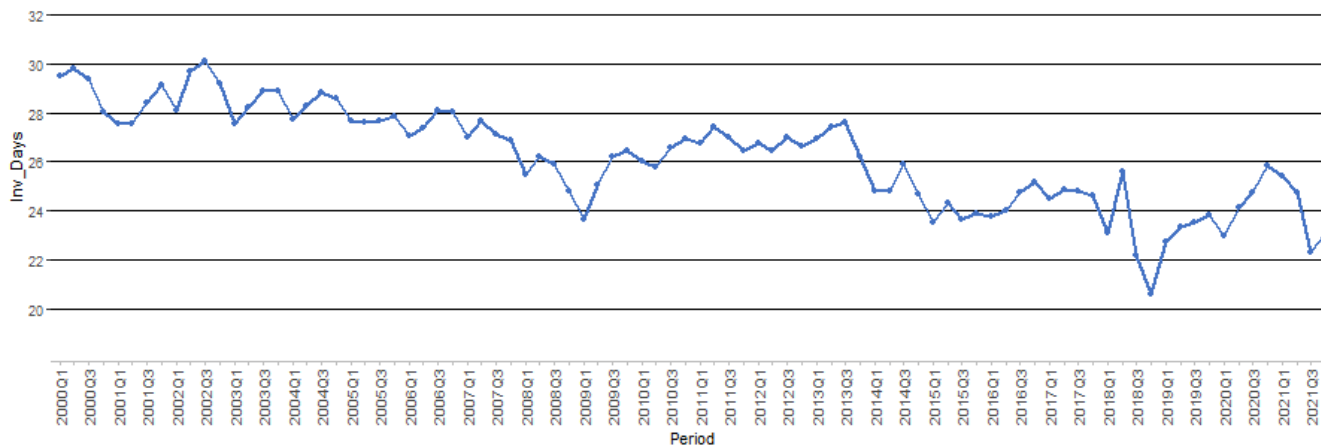
All Non-financials, Q1 2000 – Q4 2021



	Q1 2020 (Mar 2020)	Q2 2020 (Jun 2020)	Q3 2020 (Sep 2020)	Q4 2020 (Dec 2020)	Q1 2021 (Mar 2021)	Q2 2021 (Jun 2021)	Q3 2021 (Sep 2021)	Q4 2021 (Dec 2021)
Accounts Receivable (Revenue Days)	51.09	49.09	52.79	56.27	56.98	56.14	55.14	55.96

All Non-financials, Q1 2000 – Q4 2021

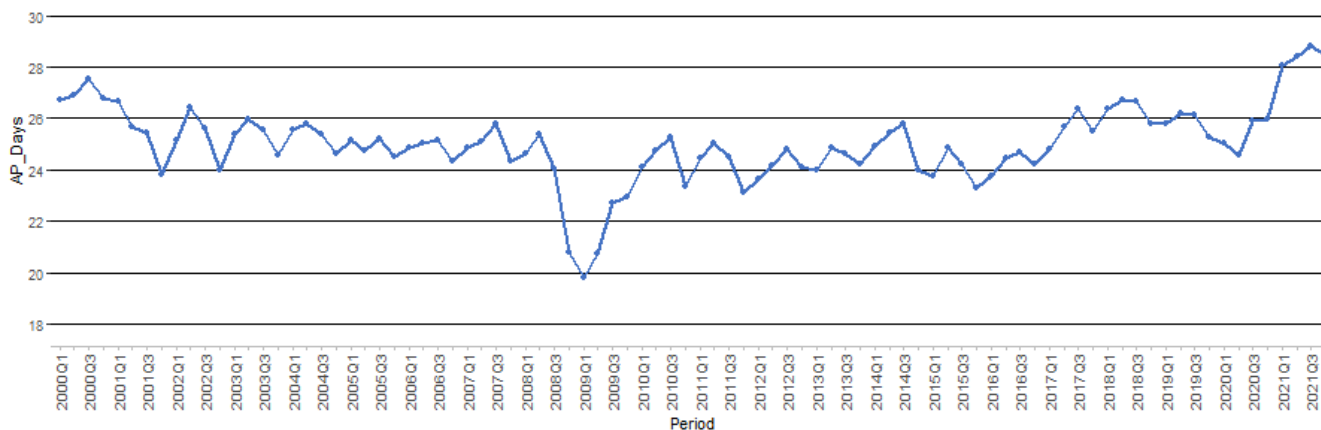
Inventory (Revenue Days)



	Q1 2020 (Mar 2020)	Q2 2020 (Jun 2020)	Q3 2020 (Sep 2020)	Q4 2020 (Dec 2020)	Q1 2021 (Mar 2021)	Q2 2021 (Jun 2021)	Q3 2021 (Sep 2021)	Q4 2021 (Dec 2021)
Inventory (Revenue Days)	22.99	24.12	24.71	25.82	25.40	24.75	22.28	23.07

All Non-financials, Q1 2000 – Q4 2021

Payables (Revenue Days)



	Q1 2020 (Mar 2020)	Q2 2020 (Jun 2020)	Q3 2020 (Sep 2020)	Q4 2020 (Dec 2020)	Q1 2021 (Mar 2021)	Q2 2021 (Jun 2021)	Q3 2021 (Sep 2021)	Q4 2021 (Dec 2021)
Accounts Payable (Revenue Days)	25.04	24.56	25.92	25.95	28.07	28.42	28.81	28.46

Individual Industry Results

Starting 2021, **16** industries saw an improvement in free cash margin in March 2021 compared to December 2020, while **4** industries saw a decrease. However, the majority of industries followed the overall trend of moderate to substantial declines in free cash margin throughout the remainder of the year. During the twelve months ended December 2021 (reported below), we saw a moderate to substantial year-over-year (compared to December 2020) decline in free cash margin in **17** industries and an improving free cash margin in just **3** industries (Energy, Consumer Services, and Semiconductors & Equipment). Declines continued in 2021 for many, with **17** industries reporting declines in December 2021 compared to the period ending September 2021 and **3** industries (Energy, Retailing, and Telecommunication Services) reporting a stable or slightly improved free cash margin in the same period.

Please refer to the individual industry spreadsheets, available on our website, for charts and further details on each of the 20 industry groups outlined in the following tables.

Industry Trends in Free Cash Margin

GICS	Industry Group	Q4 2021	vs Q3 2021	vs Q4 2020
1010	Energy	9.57%	UP 59 bps	UP 228 bps
1510	Materials	6.52%	DOWN 4 bps	DOWN 241 bps
2010	Capital Goods	3.89%	DOWN 115 bps	DOWN 414 bps
2020	Commercial & Prof Services	6.52%	DOWN 116 bps	DOWN 341 bps
2030	Transportation	3.53%	DOWN 45 bps	DOWN 43 bps
2510	Automobiles & Components	0.00%	DOWN 34 bps	DOWN 511 bps
2520	Consumer Durables & Apparel	4.22%	DOWN 173 bps	DOWN 604 bps
2530	Consumer Services	7.03%	DOWN 20 bps	UP 390 bps
2550	Retailing	4.05%	UP 7 bps	DOWN 343 bps
3010	Food & Staples Retailing	1.41%	DOWN 21 bps	DOWN 190 bps
3020	Food, Beverage, & Tobacco	5.10%	DOWN 166 bps	DOWN 307 bps
3030	Household & Personal Products	5.81%	DOWN 107 bps	DOWN 354 bps
3510	Health Care Equipment & Services	3.59%	DOWN 133 bps	DOWN 429 bps
3520	Pharmaceuticals, Biotech, & Life Sciences	-118.63%	DOWN 2410 bps	DOWN 6417 bps
4510	Software & Services	8.72%	DOWN 247 bps	DOWN 425 bps
4520	Technology Hardware & Equipment	3.19%	DOWN 137 bps	DOWN 319 bps
4530	Semiconductors & Equipment	15.05%	DOWN 187 bps	UP 208 bps
5010	Telecommunication Services	7.58%	UP 36 bps	DOWN 372 bps
5020	Media	4.58%	DOWN 189 bps	DOWN 77 bps
5510	Utilities	-9.12%	DOWN 221 bps	DOWN 336 bps
	Total	4.04%	3(17)	3 (17)

The following tables report Free Cash Margin for the 20 industry groups in the periods ending 2021 (Q1, Q2, Q3, and Q4 2021) and the periods ending 2020 (Q1, Q2, Q3, and Q4 2020).

GICS	Sector/Industry Group	Q4 2021	Q3 2021	Q2 2021	Q1 2021
1010	Energy	9.57%	8.98%	10.06%	10.17%
1510	Materials	6.52%	6.56%	8.36%	8.75%
2010	Capital Goods	3.89%	5.04%	6.91%	8.49%
2020	Commercial & Prof Services	6.52%	7.68%	8.19%	10.21%
2030	Transportation	3.53%	3.98%	5.47%	4.23%
2510	Automobiles & Components	0.00%	0.34%	4.56%	5.75%
2520	Consumer Durables & Apparel	4.22%	5.95%	8.99%	10.68%
2530	Consumer Services	7.03%	7.23%	8.38%	6.51%
2550	Retailing	4.05%	3.98%	5.73%	8.73%
3010	Food & Staples Retailing	1.41%	1.62%	1.65%	2.26%
3020	Food, Beverage, & Tobacco	5.10%	6.76%	6.26%	7.90%
3030	Household & Personal Products	5.81%	6.88%	6.68%	10.41%
3510	Health Care Equipment & Services	3.59%	4.92%	5.90%	8.55%
3520	Pharmaceuticals, Biotech, & Life Sciences	-118.63%	-94.53%	-63.15%	-54.36%
4510	Software & Services	8.72%	11.19%	12.09%	13.28%
4520	Technology Hardware & Equipment	3.19%	4.56%	6.54%	6.78%
4530	Semiconductors & Equipment	15.05%	16.92%	15.36%	14.59%
5010	Telecommunication Services	7.58%	7.22%	8.20%	10.75%
5020	Media	4.58%	6.47%	6.51%	7.74%
5510	Utilities	-9.12%	-6.91%	-6.95%	-4.97%
	All Industries Median	4.04%	5.00%	6.70%	7.93%

GICS	Sector/Industry Group	Q4 2020	Q3 2020	Q2 2020	Q1 2020
1010	Energy	7.29%	5.18%	3.38%	4.45%
1510	Materials	8.93%	8.26%	7.36%	5.92%
2010	Capital Goods	8.03%	8.09%	7.23%	5.85%
2020	Commercial & Prof Services	9.93%	9.23%	8.90%	7.13%
2030	Transportation	3.96%	4.52%	4.09%	3.58%
2510	Automobiles & Components	5.11%	4.74%	1.93%	2.66%
2520	Consumer Durables & Apparel	10.26%	10.92%	8.00%	5.72%
2530	Consumer Services	3.13%	3.68%	3.63%	3.72%
2550	Retailing	7.48%	6.50%	5.45%	2.26%
3010	Food & Staples Retailing	3.31%	3.56%	3.19%	2.48%
3020	Food, Beverage, & Tobacco	8.17%	7.06%	6.55%	6.40%
3030	Household & Personal Products	9.35%	9.62%	10.84%	9.04%
3510	Health Care Equipment & Services	7.88%	7.50%	7.23%	4.32%
3520	Pharmaceuticals, Biotech, & Life Sciences	-54.46%	-59.27%	-73.96%	-86.30%
4510	Software & Services	12.97%	11.84%	10.31%	9.21%
4520	Technology Hardware & Equipment	6.38%	5.44%	6.02%	4.08%
4530	Semiconductors & Equipment	12.97%	13.11%	13.80%	11.40%
5010	Telecommunication Services	11.30%	10.05%	9.59%	9.66%
5020	Media	5.35%	5.88%	5.70%	5.62%
5510	Utilities	-5.76%	-6.26%	-5.49%	-5.25%
	All Industries Median	7.20%	6.77%	5.93%	4.43%

Conclusions

The cash flow data reported through the fourth quarter of 2021 provides us with new insight into the U.S. economy. With uncertainties surrounding the pandemic, companies had difficulty controlling capital spending and costs. Despite the ups and downs in revenues and SG&A costs, companies managed to have relatively stable gross margins and operating cushions in the latter half of 2021. However, free cash margin declined substantially throughout 2021.

Median free cash margin increased significantly from December 2020 to March 2021 but then decreased significantly throughout the remainder of 2021. Median revenues continued a downward trend from 2020, except for June 2021, and ended with \$974.02 million in December 2021. Cash and short-term investments slightly increased from December 2020 to March 2021 but decreased afterward.

Median capital expenditures as a percentage of revenue continued a downward trend from 2020 until the last half of 2021, ranging from 2.94% to 3.72% in 2020 and the first half of 2021. Dividends and stock repurchases increased throughout 2021, ranging from 1.09% to 1.50%, while they decreased throughout 2020, dropping from 2.03% to 1.45%.

We saw declines in free cash margin in 2021 driven by increases in income tax and capital spending this year; whether the free cash margin will bounce back remains to be seen.