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Voluntary Disclosure of Free Cash Flow Information

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SYNOPSIS: Modern finance texts have long advocated a focus on "free cash flow" rather than on earnings for evaluating firm performance. While U.S. GAAP does not require firms to disclose free cash flow (FCF) information, some firms voluntarily report and emphasize FCF in their financial statements. FCFs are discussed and used in some finance texts, analysts' reports, and financial press articles, yet little theoretical and conceptual guidance exists on how to compute FCF. Hence, the SEC and the FASB have expressed concern about the comparability, consistency, and transparency of these reported measures. This study provides empirical evidence on a set of firms that voluntarily disclose FCF information in their 10-K and 10-Q reports filed between 1994 and 2004. The number of firms disclosing FCF information is small but has grown in recent years. We document that FCF definitions vary widely, limiting comparability of FCF disclosures across firms. Our results also indicate that FCF firms are less profitable and more leveraged than other firms in their own industries. Moreover, FCF firms have lower credit ratings and pay out higher dividends. These results suggest that FCF firms provide FCF disclosures to augment reported income and cash flow information. As such, our results suggest that FCF firms view FCF disclosures as an important complement to their traditional reporting practices.

INTRODUCTION

Modern finance texts have long advocated a focus on ''free cash flow'' (FCF) rather than on earnings for evaluating firm performance (e.g., Copeland et al. 2005). Conceptually, these texts and related research studies typically define FCF loosely as all cash generated by operations that the enterprise can distribute to shareholders without affecting the current level of growth (Jensen 1986; Hackel and Livnat 1996). While U.S. GAAP does not require firms to disclose FCF information, some firms voluntarily report and emphasize FCF in their financial statements. This study uses a hand-collected sample of financial statements from 1994–2004 that contain voluntary disclosures of FCF to investigate the comparability and consistency in FCF disclosures and factors that drive firms to voluntarily disclose FCF.

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The SEC and the FASB have expressed concern that the increased and diverse use of alternative non-GAAP financial measures such as FCF can lead to opportunistic reporting and undermine the credibility of business reporting (FASB 2002; SEC 2003).[1] Previous literature investigating non-GAAP measures generally focuses on pro forma earnings (e.g., Bhattacharya et al. 2003; Bhattacharya et al. 2004; Lougee and Marquardt 2004) while ignoring other non-GAAP metrics such as FCF.[2] However, unlike pro forma reporting studies that focus on non-GAAP disclosures in earnings announcements, we focus on FCF information reported in Forms 10-K and 10-Q.[3] Very little evidence exists regarding the extent of FCF reporting, the nature, comparability, and consistency of disclosed FCF measures, and the motivations for disclosing FCF. If FCF disclosures are not comparable across firms or not consistent over time, then they have the potential to mislead rather than inform users.

Using a sample of 985 Form 10-K and 10-Q filings issued between 1994 and 2004 that contain detailed FCF disclosures, we provide the following answers to several research questions:

- How widespread is FCF reporting? We find that 429 firms disclose FCF at least once during the sample period. The number of firms disclosing free cash flow information increases from 12 firms in 1994 to 176 firms in 2004. This suggests that voluntary FCF disclosures are a small but growing phenomenon.
- What is the nature of FCF disclosures? We document that while the term ''free cash flow'' is widely used in the finance literature and the investment world, it is not defined uniformly in practice. We find that FCF firms use two main methods: adjusting cash flow from operations (CFO-based), or adjusting net income (net income-based) to arrive at FCF. CFO-based definitions account for the largest number of our sample observations. However, even within this CFO-based group, we identify seven different types of adjustments. This suggests that FCF definitions vary widely, limiting comparability of FCF disclosures across firms.
- What are the characteristics of FCF disclosing firms? We find firms that engage in FCF disclosures are less profitable and more leveraged than matched non-disclosing firms. Moreover, FCF disclosing firms have lower credit ratings but pay out higher dividends. Additionally, FCF firms have lower profitability, higher leverage, and pay out higher dividends in years in which they disclose FCF compared to years in which

[1] In response to this concern, the SEC adopted Regulation G in 2003. Regulation G requires firms that report non-GAAP financial measures to also present the following in the same disclosure: (1) the most directly comparable GAAP financial measure and (2) a quantitative reconciliation of the disclosed non-GAAP measure to the most directly comparable GAAP financial measure (SEC 2003). While Regulation G focuses on pro forma earnings announcements, it also applies to the reporting of non-GAAP measures such as FCF in quarterly and annual reports.

[2] An exception is Marques (2005), who examines a wide range of non-GAAP measures in addition to pro forma earnings. However, she does not separately report or provide any discussion of free cash flow disclosures in her sample. Fields et al. (1998) examine the usefulness of funds from operations (FFO), a non-GAAP accounting measure in the real estate investment trust (REIT) industry. We could only identify two studies that specifically examine FCF disclosures. Jupe and Rutherford (1997) examine FCF disclosures made by a U.K. sample of firms and Mills et al. (2002) examine FCF disclosures using a case study of two firms. Both studies largely focus on definitional issues surrounding FCF and do not provide systematic evidence on FCF reporting.

[3] We randomly select 200 observations from our FCF disclosing sample and examine the related quarterly earnings press releases to determine the frequency with which our sample firms also disclose FCF data in concurrent earnings press releases. Of the 200 observations, we find FCF disclosure in 69 (35 percent) of the earnings announcements. Thus, some overlap exists in FCF disclosures in SEC filings (10-K and 10-Q) and earnings announcements.

they do not disclose FCF. These results suggest that FCF firms provide FCF disclosures to augment reported income and cash flow information.

To further investigate the underlying motivations for firms that disclose FCF information, we focus on a subsample of firms (FCF-Reporting Sample) that report a quantitative FCF measure that can be easily compared to other performance measures such as net income, cash flow from operations (CFO), and Richardson's FCF measure (Richardson 2006). Richardson (2006) measures FCF directly using information from the statement of cash flows as opposed to noisy combinations from the income statement and balance sheet. We find that reported FCF is invariably positive and usually higher than Richardson's FCF measure for reporting firms. Moreover, Richardson's FCF measure and CFO amounts for reporting firms are higher than comparable amounts for (1) nonreporting firms and (2) reporting firms in time periods in which the firms do not report FCF. In contrast, net income is lower for FCF reporting firms relative to nonreporting firms and nonreporting years. These results suggest that firms are more likely to report FCF when FCF and other cash flow measures portray the financial performance of the firm in a more positive light than reported earnings.

Overall, our results suggest that firms that elect to emphasize FCF likely have a desire or need to direct stakeholders' attention to cash flows. This is likely to occur if earnings are weak, and the company has relatively high dividend payout, larger than average debt loads, and weaker credit ratings. As such, firms view FCF disclosures as an important complement to their traditional reporting practices for providing information to stakeholders. Because positive FCF news is more likely to appear when earnings news is weak, our results are also potentially consistent with concerns that managers release FCF information to mislead market participants.

Our study also directs attention to the interaction between overall firm performance and corporate voluntary disclosure. Voluntary FCF disclosures can play a crucial role in a firm's access to capital (Graham et al. 2005). Brown et al. (1988) and Kwon and Wild (1994) argue that distress (or bad financial performance) induces an increase in market uncertainty leading to an increase in the cost of raising additional capital. Assuming that firms employ a cost-benefit analysis with respect to their voluntary disclosure strategy, firms may emphasize FCF information to signal good news in cash flows when experiencing transitory bad news in earnings.[4]

This paper represents the first systematic attempt to examine FCF disclosures contained in 10-K and 10-Q filings. Forms 10-K and 10-Q serve as a source for comprehensive and detailed financial information about companies and often contain highly significant information about a firm's performance or financial position that is not contained in other communications such as earnings announcements. While some studies (e.g., Brown 1985) have suggested that the information in 10-K and 10-Q filings is ''stale'' and of limited use for investors, Griffin (2003) provides evidence on the information content of these SEC filings.

The paper is organized as follows. In the next section, we describe our sample, data, and variable measures. Next, we report on the trends, nature, and definitions of FCF reporting. The fourth section examines the firm characteristics and incentives of FCF disclosing firms. In the fifth section, we perform additional tests using a sample of firms that

[4] Wasley and Wu (2006) examine voluntary disclosure of management cash flow forecasts. They predict and find that managers voluntarily issue cash flow forecasts to convey good news in cash flows and therefore the transitory nature of bad news in earnings.

report quantitative FCF measures that are comparable to traditional accounting numbers. The final section summarizes and concludes.

SAMPLE AND DATA

We use a full text keyword search of the EDGAR database to identify 10-K and 10-Q filings that contain free cash flow disclosures. Because these disclosures may replace ''free'' with adjectives such as ''raider's'' or ''surplus,'' ''excess,'' ''distributable,'' and ''disposable'' (Hackel and Livnat 1996), we search the database using all these terms. The initial search produced 9,994 hits (2,126 unique firms) for filings made during 1994–2004.

We examine each hit for its relevance. We consider a hit to be relevant for this study if FCF is the central focus of the specific discussion in which it is found and the discussion focuses attention on FCF as an important indicator of firm performance. Relevant FCF disclosures include some or all of the following characteristics: (1) definition of FCF, (2) quantitative disclosure of FCF, (3) forward-looking information (e.g., FCF forecasts), and (4) reconciliation with GAAP measures.[5] From the 9,994 original hits, we obtain 1,729 relevant disclosures from 429 unique firms. For firms with relevant hits in more than one filing in a given year, we retain the disclosure within the 10-K if available; if not, then we retain the most recent 10-Q with a relevant hit. This reduces the number of reports to 985 for the 429 unique firms. We use this sample to examine the trends in FCF reporting and the nature of FCF disclosures. To examine the characteristics of FCF disclosing firms, we reclassify the sample firms according to fiscal year (instead of filing year).[6] We merge the sample with the Compustat and CRSP databases, and match each sample firm that discloses FCF with a non-disclosing firm based on industry, fiscal year, and firm size, resulting in a sample of 789 relevant disclosures for 361 unique FCF firms for the 1994–2004 filing period. We lose 196 firm-years due to lack of the necessary Compustat and CRSP data. We use this matched sample for comparative analysis and logistic regression.

To gain further insights into the motivations for FCF disclosure, we focus on a matched subsample of 373 firm-years for 171 unique firms that report a quantitative FCF measure that can be easily compared to traditional performance measures. Some FCF disclosing firms do not provide quantitative FCF disclosure; others provide FCF metrics such as free-cash-flow-to-debt-coverage that are not easily comparable to traditional performance measures. Moreover, quantitative FCF disclosures are more ambiguous in 10-Q filings, and it is more difficult to get corresponding information on comparable performance measures. Therefore, we drop all these firms for this additional analysis. We use this matched subsample to compare reported FCF to net income and other cash flow measures.

We collect our data from the EDGAR Data Filing System.[7] Because the SEC required all firms to begin filing electronically after 1995, our sample might not include all relevant FCF disclosing firms for years prior to 1996, as this is the first year for which we have complete filing data for all sample firms.

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[5] We completely reviewed all disclosures. Two researchers independently reviewed each hit for relevance. Inter-rater comparability was over 90 percent, and questions and conflicts were resolved in conference. In the majority of observations that were dropped from the sample, FCF was mentioned only in passing and did not constitute the central focus of the specific discussion in which the hit was located.

[6] The fiscal year precedes the filing year for 10-Ks. For 10-Qs the filing and fiscal years are often the same. The latest fiscal year for which we have complete data is 2003. Therefore, for purposes of this analysis, we exclude 2004 10-K or 10-Q filings that pertain to fiscal year 2004.

[7] While the EDGAR Data Filing System began in 1984, electronic filing was voluntary until 1993, at which time the SEC mandated electronic filing for all companies with a two-year phase-in period. We do not find any relevant FCF disclosures in 1993 filings; therefore, our sample covers the 1994–2004 filing period.

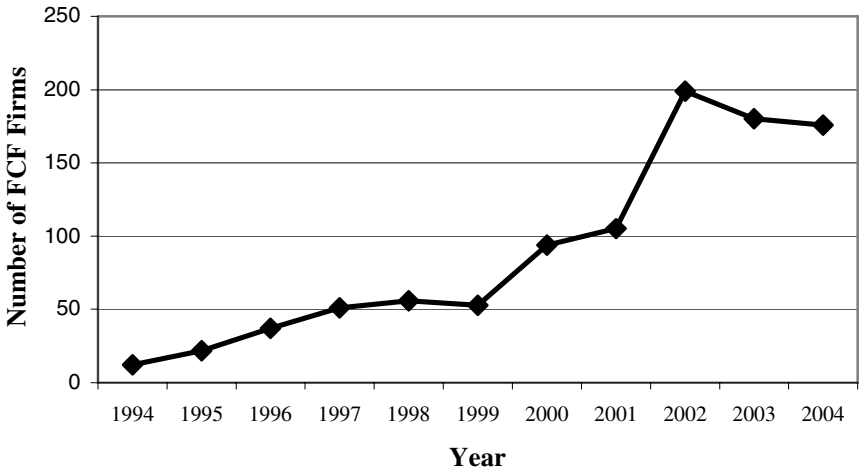
FREE CASH FLOW DISCLOSURE

How Widespread Is FCF Reporting?

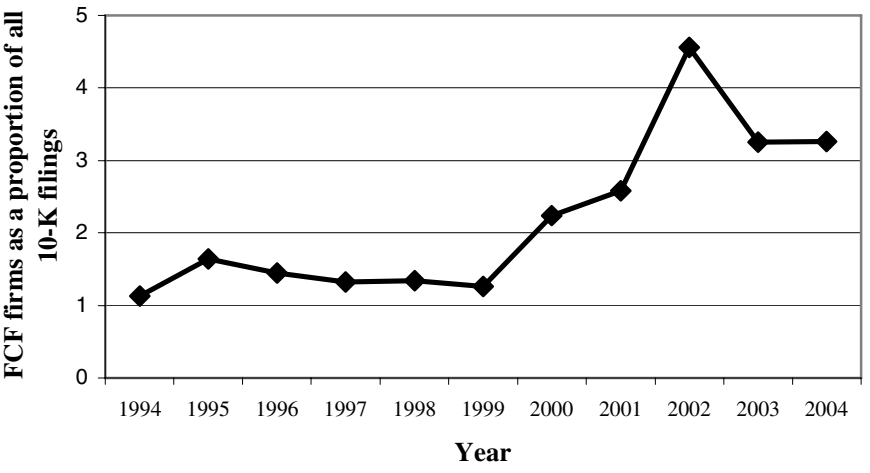
We first examine trends in free cash flow reporting during our sample period. Figure 1 presents the results of this analysis. We find that 12 firms disclose free cash flow information in 1994. This number grew each year up to 199 in 2002, before declining slightly to 176 in 2004. Also, we find that the proportion of SEC filers making FCF disclosures

FIGURE 1
Trends in FCF Reporting

Panel A: Frequency of FCF Firms[a]



Panel B: Relative Frequency of FCF Firms[b]



[a] Although we report data for 1994 and 1995, it may be incomplete, since 1996 is the first year in which the SEC required all companies to file electronically using the EDGAR Filing System.

[b] Data for total 10-K filings is compiled from the 10-K Wizard Search Database. We exclude 10-KSB filings (small businesses) since our sample of FCF firms includes large firms (median total assets of $1 billion).

increases from just over 1 percent in 1994 to 4.5 percent in 2002, before stabilizing at around 3.2 percent in 2003 and 2004. The drop in 2003 and 2004 is consistent with the recent increased scrutiny of alternative performance measures, reflecting concerns by regulators and the financial press that the use of alternative and inconsistent performance measures can be confusing and misleading (FASB 2002; SEC 2003; Gullapalli 2004). The drop coincides with the implementation of Regulation G, the new expanded disclosure rules established by the SEC to regulate non-GAAP disclosures.[8] Overall, the data reveal an upswing in the number of companies providing voluntary FCF information from 1994 through 2002, which moderated a bit following implementation of Regulation G.

What Is the Nature of FCF Information?

Disclosures related to FCF appear most frequently in the management discussion and analysis section of the 10-K or 10-Q filing, but they sometimes appear in the selected financial data section. Firms label their FCF disclosures in a number of ways, as indicated in Table 1, Panel A. While the vast majority of the SEC filings that report FCF use the term ''free cash flow'' (88.5 percent), alternatives such as ''excess cash flow'' (6.8 percent) and ''distributable cash flow'' (2.0 percent) are also used with some frequency. We also find variation in the level of FCF disclosure emphasis; some firms provide very detailed disclosures (including FCF definitions, quantitative FCF information, a reconciliation to GAAP measures, and explanatory discussion), while others provide more abbreviated disclosures. Seventy-six percent of all financial statements for firm years classified as containing relevant FCF disclosure include a quantitative measure of FCF. While the dollar amount of free cash flow is most frequently disclosed, a few firms also disclose other free cash flow metrics such as free cash flow per share and free cash flow to debt coverage. The Appendix presents an example of a FCF disclosure for Watts Industries, Inc. from the year 2003. In the disclosure, the company clearly identifies FCF as a non-GAAP measure and quantitatively reconciles FCF with cash flow from continuing operations, the most directly comparable GAAP financial measure. The disclosure is consistent with the requirements of Regulation G and is typical of the type of FCF disclosure we observe for firms in the later years of our sample. However, FCF disclosures are more varied in the earlier years.

Free Cash Flow Definitions

Table 1, Panel B reports the frequency of financial statements using the different definitions of FCF. We classify the FCF disclosures into ten categories based on the adjustments made to operating cash flow, net income, or EBITDA to arrive at FCF. The wide variation in FCF adjustments suggests that comparability of FCF across firms may be difficult. In a large proportion of the firm-years with relevant FCF disclosures (30.2 percent), firms either make unique adjustments to arrive at their FCF number or provide no clear definition. We classify these reports into a separate category, which we label as ''other.'' This category includes firms that follow industry-specific free cash flow definitions such as funds from operations (FFO) in the real estate industry or broadcasting cash flows in the broadcasting industry, firms that use stylized definitions of FCF guided by specific debt covenants, and other firms that report FCF but provide no clear definition.[9]

[8] Marques (2005) and Entwistle et al. (2006) also document a drop in the frequency of disclosures of non-GAAP financial measures in quarterly press releases following the adoption of Regulation G.

[9] While these firms are inherently difficult to classify, we attempt to separate the firms in the ''other'' category. The majority of the firms in this category provide no clear definition (52 percent), some use stylized definitions governed by specific debt and compensation agreements (25 percent), and others follow industry-specific definitions (23 percent).

TABLE 1
Nature of Free Cash Flow Disclosures

Panel A: Nomenclatures to Describe FCF

Terminology Used	Frequency	Percent
Free Cash Flow	871	88.5
Operational Cash Flow	9	0.9
Available Cash	12	1.2
Distributable Cash Flow	20	2.0
Excess Cash Flow	67	6.8
Discretionary Cash Flow	2	0.2
Deployable Cash	1	0.1
Cash Flow Before Share Repurchases	3	0.3
Total	**985**	**100.0**

Panel B: FCF Definition by Sample Firms and Major Methods in Defining FCF

CFO-Based Methods	Frequency	Percent of CFO-Based Method Sample	Percent of Total Sample
Capital Maintenance Perspective			
CFO − *CAPEXP*	283	51.6	28.7
CFO − *CAPEXP* +/− Change in *NWC*	10	1.8	1.0
CFO − Nonrecurring charges − *MCAPEXP*	41	7.5	4.2
CFO − Investing activity	64	11.7	6.5
Total	**398**	**72.6**	**40.4**
All Inclusive Perspective			
CFO − *CAPEXP* − Debt payment	21	3.8	2.1
CFO − *CAPEXP* − Dividend	117	21.4	11.9
CFO − Investing activity − Dividend	12	2.2	1.2
Total	**150**	**27.4**	**15.2**
Sub-Grand Total—CFO-Based Methods	**548**	**100.0**	**55.6**
Income-Based Methods			
Derived from *EBITDA*	112		11.4
Derived from Net Income	28		2.8
Sub Total—Income-Based Methods	**140**		**14.2**
Others	297		30.2
Grand Total	**985**		**100.0**

Definition of terms:
CFO = cash flow from operations;
CAPEXP = capital expenditure;
NWC = net working capital;
MCAPEXP = maintenance capital expenditure; and
EBITDA = earning before interest, taxes, depreciation, and amortization.

Excluding the ''other'' cases, we find that firms generally compute FCF using two main methods, which we refer to as CFO-based and income-based. Under the CFO-based method, firms calculate FCF by making adjustments to CFO. In the income-based method, firms use an implicit two-stage process to derive FCF. First, they adjust net income or EBITDA to calculate an approximation for CFO, which they then adjust to arrive at FCF. Of the

relevant sample of FCF disclosures that we can classify, 55.6 percent use the CFO-based method, while 14.2 percent use the income-based method. The income-based method only yields a crude estimation of CFO, which can be directly obtained from the statement of cash flows. However, the use of the income-based method is not surprising and is consistent with the continued popularity of EBITDA as a proxy for CFO.

To get a better sense of the approach firms use to define FCF, we analyze the financial statements of all FCF disclosing firms (548 firm-years) that use the CFO-based method to derive FCF.[10] Under the CFO-based method, firms apply one of two broad perspectives in defining FCF. The more common perspective is to view FCF from a capital maintenance perspective, where FCF represents the amount of cash that owners can consume without reducing the value of the business (Hicks 1946; Hackel and Livnat 1996). Under this perspective, FCF is calculated as net cash flow from operating activities less capital expenditures necessary to maintain the productive capacity of the firm. Discretionary expenditures such as outlays for debt reduction, dividends, and stock repurchases are excluded from the FCF computation. The growth and financial flexibility of the firm depends on FCF; the firm can distribute FCF back to shareholders without affecting the value of the firm, or it can use FCF to pay down debt or take advantage of new business opportunities.

Of the 548 FCF disclosing financial statements that use the CFO-based method to derive FCF, 398 (72.6 percent) use a capital maintenance perspective. We find that 283 (51.6 percent) of our CFO-based method observations define FCF as CFO minus capital expenditures. Some firms define FCF as CFO minus cash flows from investing activities instead of capital expenditures. Cash flows from investing activities include proceeds from fixed asset sales and changes in long-term investments, in addition to capital expenditures. However, if cash flows from these activities are insignificant for a firm-year observation, both definitions should yield fairly similar estimates of FCF. We find that in 41 (7.5 percent) financial statements in our CFO-based method sample, firms subtract nonrecurring charges and maintenance capital expenditures from CFO in deriving FCF. Maintenance capital expenditure refers to the notion of buying new assets to replace the capacity lost due to obsolescence or wearing out. Accordingly, Richardson (2006) defines maintenance capital expenditure as the portion of total investment expenditure necessary to maintain the assets-in-place. Hackel and Livnat (1996) argue that the definition of FCF that subtracts only maintenance capital expenditures accounts for capital spending adequate to keep up the current level of production and does not take into account the future needs of the firm.

An alternative perspective views FCF as the cash over which management has discretion. We label this as the ''all inclusive'' perspective in our discussion. Proponents of the ''all inclusive'' perspective argue that firms have relatively little discretion in making mandatory debt payments and normal dividend payouts, and therefore these cash outflows should also be subtracted in order to derive a true measure of ''free'' cash flow to equity investors. Under the ''all inclusive'' perspective, FCF is defined as cash that is available after meeting all current commitments, including capital reinvestments, dividends, and current principal payments on debt. Some definitions of FCF go even further to exclude share repurchases in calculating FCF. We find that in 150 (27.4 percent) financial statements using a CFO-based method, the ''all inclusive'' perspective is used to define FCF. CFO

[10] We also examine FCF definitions using the income-based method. However, we do not attempt to classify them into sub-classes because of their greater diversity compared to the CFO-based method. While differences in definitions to reconcile CFO to FCF are similar under the two methods, the income-based method also includes differences stemming from the reconciliation of EBITDA or net income to CFO. Therefore, we restrict our detailed analysis to examine FCF definitions under the CFO-based method only.

minus capital expenditures and dividends is the most commonly used definition under the ''all inclusive'' perspective. We also find that in a few financial statements (3.8 percent) that use an ''all inclusive'' perspective, debt payments are subtracted to arrive at FCF.

We do not analyze the definitions employed by firms using the income-based method in any detail. However, we do observe that the FCF derived under this approach often does not reconcile to CFO reported in the statement of cash flows less the necessary adjustments to arrive at FCF. Adjustments to EBITDA or net income to estimate CFO vary widely among firms. Moreover, adjustments made to reconcile estimates of CFO to FCF also differ substantially, which is consistent with what we observe for firms that use the CFO-based method to derive FCF. Our overall results suggest that FCF definitions vary widely, therefore limiting comparability of FCF disclosures across firms. Hackel and Livnat's (1996) characterization that ''FCF wears many masks and has no unique definition'' seems well justified.

Consistency of FCF Disclosures

We also examine the consistency of FCF disclosures provided by disclosing firms. Of the 429 firms in our sample, 186 provide relevant disclosures of FCF more than once in the sample period (unreported results). We analyze the FCF disclosures of these 186 firms to assess consistency in the definitions they employ for FCF across periods. We find that 129 (69 percent) firms use the same definition for FCF over time. For a large number of firms that change FCF definitions, we find that the change occurs in the 2002–2003 period. We suspect that changes in FCF definitions during this period are in response to the heightened scrutiny on reported non-GAAP measures surrounding the implementation of Regulation G. We also find that firms that disclose FCF over a long period of our sample years often use one FCF definition in earlier years and change to another definition in later years. For example, some firms use income-based definitions in earlier years and switch to a CFO-based definition in later years. Generally, however, they use consistent definitions across the different subperiods.

Our results contrast significantly with Bhattacharya et al. (2004), who report a fairly low level of consistency (22 percent) among companies defining pro forma earnings across time. This suggests different considerations may influence the reporting of pro forma earnings in press releases relative to FCF disclosure in required financial filings. While both types of discretionary disclosure may be motivated by a desire to manage investors perceptions, pro forma earnings disclosures appear to be more *ad hoc* and driven by managers' desire to meet immediate concerns to exceed earnings performance expectations. Doyle et al. (2004) find that managers define earnings opportunistically to meet or beat analysts' forecasts using the alternative earnings definitions. Additionally, some of the differences in consistency that we note in defining FCF relative to pro forma earnings announcements may also arise because we study FCF disclosures in regulated SEC filings (10-K and 10-Q) while the extant literature examines pro forma earnings that occur in earnings press releases that were largely unregulated prior to Regulation G.

CHARACTERISTICS OF FIRM-YEARS WITH FCF DISCLOSURES

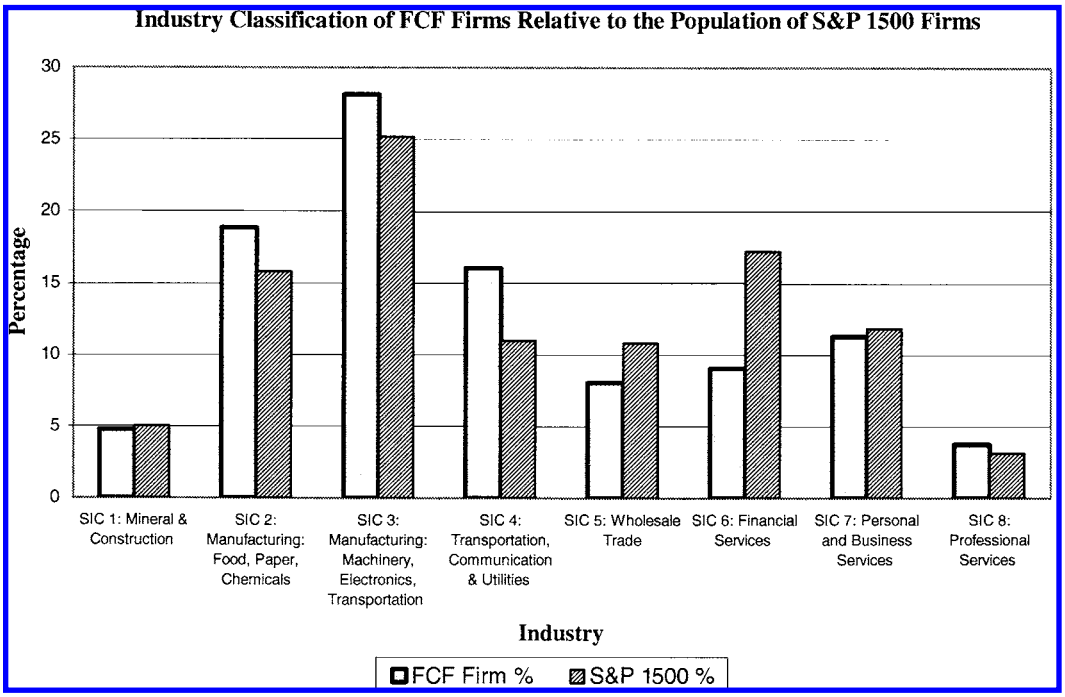
In this section, we examine characteristics of firms that voluntarily disclose FCF information. Moreover, we compare disclosing firms to non-disclosing firms in their respective industries based on various firm characteristics. We also examine characteristics of disclosing firms in non-disclosure years. Finally, using a logistic regression, we investigate the factors that explain the likelihood that firms disclose FCF information.

What Are the Characteristics of Disclosing Firms?

Figure 2 reports the distribution of sample firms across industries based on one-digit standard industry classification (SIC) codes. The majority of the disclosing firms operate in the manufacturing (28 percent), food (19 percent), and transportation (16 percent) industries. Figure 2 also plots the distribution of firms in the S&P 1500 across industries.[11] In general, the industry distribution of disclosing firms is fairly similar to what we observe for the S&P 1500 sample. The greatest difference occurs in the financial services industry. Financial services firms account for 9 percent of our total sample compared to 17.2 percent of all firms in the S&P 1500. Overall, however, the results suggest that FCF disclosures are not prompted by factors that are unique to a particular industry.

Unlike studies that have examined pro forma earnings reporting (e.g., Bhattacharya et al. 2004; Lougee and Marquardt 2004), our sample is not heavily focused on the business services industries. The personal business and professional business services sectors (which include the high-tech sector) only account for 11.3 percent and 3.8 percent of our total sample, respectively, which is similar to the S&P 1500 proportions of 11.8 percent and 3.1

FIGURE 2
Classification of and Trends in FCF Disclosure by Industry



[11] The S&P 1500 consists of about 2,000 firms belonging to S&P 500, mid-cap, and small-cap classifications. As a robustness test, we also benchmark our sample against all firms in the Compustat database, and our results are qualitatively unchanged. We note that the means and medians for total assets and total sales revenue are significantly larger for our firms compared to the comparison groups. For other comparative tests in the study, we use a matched control design with matching based on industry (four-digit industry group), size (total assets), and year of FCF disclosure.

percent. In contrast, Bhattacharya et al. (2004) and Lougee and Marquardt (2004) report that service industries account for approximately 50 percent and 46 percent, respectively, of their samples of pro forma earnings announcements. Differences in industry composition of companies choosing to disclose pro forma versus FCF suggest that motivations for the two types of reporting are not identical. To address the overlap in FCF and pro forma reporting, we randomly select 100 observations from our FCF disclosing sample and examine the related SEC filing to determine the frequency of pro forma earnings. We find pro forma earnings disclosure in 42 (42 percent) of our FCF subsample. This suggests that an overlap exists between FCF and pro forma earnings disclosures, and the two types of disclosure are not completely independent. An interesting extension of our study would be to examine more closely the relation between these two types of non-GAAP measures.

Comparative Financial and Operating Measures Analysis

Columns 1 and 2 of Table 2 report selected measures of firm characteristics and key financial ratios for FCF disclosing firms. Columns 3 and 4 show differences with matched control firms. To examine whether differences in characteristics across firms within an industry are important for the decision to disclose FCF, we match each sample firm-year observation with a non-disclosing firm within the same four-digit industry group, in the same fiscal year, and of similar size (total assets).[12] We are successful in matching about 90 percent of the sample observations (702) using the four-digit industry group; we use three-digit matches for the rest (87 observations).

The results suggest that disclosing firms are fairly large firms; the mean (median) value of total assets is $5,816 million ($1,350 million). The substantial differences between the mean and median values suggest some firms in the sample are very large. The industry-matched median difference for total assets is not statistically significant, while the mean difference is significant at the 10 percent level, suggesting that the matching procedure is largely successful. In contrast, we find that sales for FCF firms are, on average, significantly higher than for the matched firms.

In the absence of a well-developed literature on FCF disclosures, we draw upon extant research in voluntary disclosure to select variables that are potentially associated with firms' choices to provide FCF disclosures. Managers may be motivated to disclose alternative performance measures to portray their firm's performance more favorably than suggested by traditional GAAP measures. Bhattacharya et al. (2004) and Lougee and Marquardt (2004) find that non-GAAP measures are more likely to be disclosed when firms experience poor performance. We find statistically significant mean differences between disclosing firms and the matching firms in all performance-related firm characteristics. Disclosing firms are more likely to be loss (*LOSS*) firms and have lower net income (*NETINC*) and market returns (*RETANN*). We also find that FCF firms have lower return on sales (*ROS*) and lower return on assets (*ROA*), although mean differences between disclosing and non-disclosing firms for *ROA* are only marginally significant at the 10 percent level. However, except for *RETANN*, the median differences of these variables are not statistically significant. Overall, these findings suggest that FCF firms are, on average, less healthy financially.

As the probability of financial distress increases, current earnings become less informative (Barth et al. 1998) and cash flows become more important for valuation (Ohlson 1980). Moreover, Hodgson and Clarke (2000) find that investors perceive earnings to be

[12] The matching is based on fiscal year rather than filing year. The analysis covers fiscal years 1994–2003 because the latest fiscal year for which we have complete data is 2003, and we only have a few observations for fiscal year 1993.

TABLE 2
Differences between Disclosing Firm-Years and Matched Non-Disclosing Firm-Years

Variable	FCF Disclosing Firms (n = 789)		Disclosing − Nondisclosing[a]	
Firm Characteristics	**Mean**	**Median**	**Mean**	**Median**
ASSETS	5,816.01	1,350.31	1,110.50*	137.50
SALES	55.73	25.91	23.10**	4.43*
LOSS	0.23	0.00	0.07***	0.00
NETINC	0.72	1.12	−0.35**	0.07
RETANN	0.09	0.10	−0.03**	−0.02**
SPDRC	12.24	12.00	0.96***	1.00***
ACCRUALS	−0.026	−0.043	0.013	0.001
CAPEXP	2.86	1.15	0.94**	−0.11
DIVIDENDS	2.22	0.12	1.90**	0.08
RETANNSD	0.52	0.45	0.02*	0.02*
Ratios				
ROS	−0.62	0.04	−0.60***	−0.41***
ROA	0.04	0.04	−0.02*	−0.01*
LEVERAGE	0.66	0.65	0.13***	0.08***
CURRENT	1.63	1.41	−0.61*	−0.28*
CFNETINC	4.35	2.01	0.01*	0.36*
BOOKMKT	1.23	0.46	0.61***	0.00
PERATIO	8.39	15.13	−12.97***	−2.03**

*, **, *** Denote statistical significance at the 0.10, 0.05, and 0.01 levels, respectively.

[a] Numbers in the Disclosing − Nondisclosing column equal the characteristic for the disclosing firm-year minus that of its matched firm-year. For each disclosing firm-year observation, we select a matched observation within the same four-digit industry group for 702 observations and three-digit industry group for the remaining 87 observations.

Variable Definitions:

ASSETS = total assets (Compustat data item 6);
SALES = sales (net) (Compustat data item 12) deflated using common shares (Compustat data item 25);
LOSS = 1, if income before extraordinary items (Compustat data item 18) < 0, and 0 otherwise;
NETINC = net income (loss) (Compustat data item 172) deflated using common shares (Compustat data item 25);
RETANN = annualized hold-period returns measured beginning from day −1 of the fiscal year through the last day of the fiscal year;
SPDRC = Standard & Poor's Long-Term Domestic Issuer Credit Rating − Current (a measure of an issuer's overall creditworthiness);
ACCRUALS = Total accruals as defined by Jones (1991). We calculate total accruals as the change in noncash working capital less total depreciation expense. We define the change in noncash working capital as the change in current assets other than cash and short-term investments less current liabilities;
CAPEXP = capital expenditure (Compustat data item 128) deflated using common shares (Compustat data item 25);
DIVIDENDS = common dividend (Compustat data item 21) deflated using common shares (Compustat data item 25);
RETANNSD = the annualized standard deviation of stock returns;
ROS = return on sales (Compustat data item 172/data item 12);
ROA = return on assets (Compustat data item 172/data item 6);
LEVERAGE = debt ratio (Compustat data item 181/data item 6);
CURRENT = current ratio (Compustat data item 4/data item 5);
CFNETINC = cash-flow-to-net-income ratio (Compustat data item 308/data item 172);
BOOKMKT = book-to-market ratio (Compustat data item 60/[data item 25*data item 199]); and
PERATIO = price earning ratio (Compustat data item 172/data item 12).

less informative for highly leveraged firms due to the increased probability of default. We find that disclosing firms have higher leverage (*LEVERAGE*) and lower current ratio (*CURRENT*), although the mean difference in current ratio between FCF firms and matched firms is only marginally significant at the 10 percent level. Disclosing firms also have weaker levels of the Standard & Poor's Long-Term Domestic Issuer Credit Rating—Current (*SPDRC*). This is a measure of an issuer's capacity and willingness to meet its long-term financial commitments as they come due. The rating ranges from ''2 for an AAA'' (high quality) rating to ''27 for a D'' (default) rating. Thus, firms with stronger ratings have lower credit scores and vice versa. Taken together, the above results suggest that, on average, FCF firms are marginally less liquid (*CURRENT*), have higher debt levels (*LEVERAGE*), and have weaker credit ratings (*SPDRC*) than non-disclosing firms in their respective industries. Because of their higher leverage and weaker credit ratings, we conjecture that firms may voluntarily disclose FCF information to allay the concerns of creditors and provide assurance that they are protecting creditors' interests. FCF disclosures may serve to mitigate financial distress concerns by signaling the ability of the firm to generate cash to repay debt.

Cash flow information is also useful in validating information in accruals-based earnings because accruals contain managers' subjective estimates and managers can exercise their reporting discretion opportunistically (DeFond and Hung 2003). The insignificant mean and median differences for *ACCRUALS* suggest that accruals for disclosing firms are not significantly different from non-disclosing firms. The cash-flow-to-net-income ratio (*CFNETINC*) also proxies for the magnitude of accruals since it measures the gap between net income and cash flow from operations. *CFNETINC* is only marginally significant at the 10 percent level.

Prior research (e.g., DeFond and Hung 2003) suggests that cash flow information is important for capital-intensive firms. For firms with large amounts of assets in place, cash flow becomes more important for routine maintenance and replacement of existing assets. The significant positive mean difference for capital expenditure (*CAPEXP*) suggests that FCF firms, on average, spend more on capital expenditures than other firms in their own industries. Consistent with cash flow information being important for dividend-paying firms, we find disclosing firms, on average, pay higher dividends. However, the median differences based on *CAPEXP* and *DIVIDENDS* are not statistically significant.

Core (2001) argues that firms with high growth opportunities have greater potential for information asymmetry and may take steps to reduce information asymmetry through voluntary disclosure. Lang and Lundholm (1993) document that greater information asymmetry is associated with more voluntary disclosure. We measure growth opportunities as the firm's book-to-market ratio at the end of the fiscal year (*BOOKMKT*). The significantly higher mean book-to-market ratio (*BOOKMKT*) and lower mean price earnings ratio (*PERATIO*) suggests that disclosing firms may face an undervaluation problem.[13]

Taken together, the results presented in this section indicate that FCF firms are less profitable and more leveraged than other firms in their own industries. Moreover, FCF firms have lower credit ratings, but spend somewhat more on capital expenditures and pay out

[13] Low P-E ratios and high book-to-market ratios do not necessarily imply mispricing. We thank an anonymous referee for this observation. Also, comparing these firms based on firm risk (*RETANNSD*) yields no statistical difference between them.

higher dividends. These results suggest that firms provide FCF disclosures to augment reported income and cash flow information.[14]

Table 3 presents the results of comparing the characteristics of FCF disclosing firms based on the means of disclosing and non-disclosing years for the same firm. Since some variables have a lot of ''memory'' from one year to the next, and therefore potentially violate the assumption of independence, we compute a mean for all disclosure years and another mean for all non-disclosure years for each firm. Thus, in Table 3, we have one disclosure and one non-disclosure observation for each firm (n = 361), in contrast to Table 2 where we consider all disclosing firm years (n = 789).

The t-test statistic on the mean difference between disclosing and non-disclosing years is significantly positive for both size variables (*ASSETS* and *SALES*) suggesting that FCF firms are relatively larger in the years in which they disclose compared to the years in which they do not disclose. This result is not surprising since in our sample period, we have a higher frequency of FCF disclosures in the later years when firms generally would

TABLE 3
Differences between FCF Disclosing Firms across Years

Variable	FCF Disclosing Firms (n = 361)		Differences[a]	
Firm Characteristics	**Mean**	**Median**	**Mean**	**Median**
ASSETS	5,796.33	1,217.38	1,275.69**	323.44
SALES	51.41	23.15	20.59***	1.93
LOSS	0.28	0.00	0.03	−0.14
NETINC	0.46	0.99	−0.38***	0.00
RETANN	0.12	0.12	−0.04*	0.00
SPDRC	12.36	12.00	−0.05	0.00
ACCRUALS	−0.019	−0.043	−0.007	−0.002
CAPEXP	2.54	1.40	−0.08	−0.32
DIVIDENDS	2.50	0.02	2.15***	−0.04
RETANNSD	0.57	0.47	0.05	0.03
Ratios				
ROS	−1.45	0.03	−1.22***	0.00
ROA	0.04	0.04	−0.02*	−0.01
LEVERAGE	0.65	0.64	0.03*	0.03*
CURRENT	1.73	1.43	−0.13	−0.14
CFNETINC	3.62	1.97	0.74**	0.18
BOOKMKT	1.47	0.47	0.56**	0.02
PERATIO	5.43	14.27	−8.89***	−1.51

*, **, *** Denote statistical significance at the 0.10, 0.05, and 0.01 levels, respectively.
[a] Test of differences for sample of 361 FCF disclosing firms based on mean of 789 disclosing firm-years and the mean of 2037 non-disclosing firms-years.
See Table 2 for the definition of variables.

[14] We also perform this analysis using several other specifications. We use industry-year-adjusted comparisons. Additionally, following Bhattacharya et al. (2004), we compare each sample firm to the median of its one-digit SIC code industry for each of the variables and test the differences. Each of the alternative comparative procedures yield qualitatively similar results to those that we obtain using a matched sample based on industry.

be larger compared to the earlier years. The t-statistics for the mean differences of *NETINC* and *ROS* are significantly negative. Also, the t-statistics for the mean differences of *ROA* and *RETANN* are negative, but only marginally significant at the 10 percent level. In contrast, the t-statistic for the *LOSS* variable is insignificant. Overall, these results suggest that FCF firms are less profitable in disclosing years than in non-disclosing years. The t-statistic for *LEVERAGE* is positive and only marginally significant at the 10 percent level, providing weak evidence of higher leverage in disclosing years compared to non-disclosing years. However, the t-statistics for *CURRENT* and *SPDRC* are insignificant, suggesting liquidity and credit ratings are not reliably different for firms in disclosing relative to non-disclosing years.

The evidence regarding accruals is mixed; based on mean differences, the t-statistic for *ACCRUALS* is not significant, but the t-statistic for *CFNETINC* is positive and significant, suggesting that the gap between CFO and net income is much larger for FCF firms in disclosing years compared to non-disclosing years. While the mean difference in *CAPEXP* is not statistically different, the mean difference for *DIVIDENDS* is positive and significant, suggesting that FCF firms pay higher dividends in disclosing years relative to non-disclosing years. The mean *BOOKMKT* ratio is significantly higher and the mean *PERATIO* significantly lower, suggesting FCF firms may be relatively undervalued in disclosing years compared to non-disclosing years. We note that all median differences in Table 3 are insignificant (*LEVERAGE* is only marginally significant at the 10 percent level). One likely reason for the weaker results in this section is that the one-observation-per-firm approach that we adopt to control for the lack of independence is a conservative approach that has the potential to understate the significance of some variables.

Overall, the results suggest that, on average, FCF firms are less profitable, relatively undervalued, pay higher dividends, and have a higher CFO to net income gap in years that they disclose FCF compared to years in which the same firms do not disclose FCF. In general, results in this section reinforce the suggestion that firms disclose FCF information to augment reported income and cash flow information.

Logistic Regression of FCF Disclosure Probability

To further investigate the factors that explain the likelihood that firms disclose FCF information, we analyze firm characteristics using logistic regression. We perform Logit analysis using the same set of independent variables and FCF firm years as in Tables 2 and 3. Because we argue that a firm is less likely to disclose FCF information if the firm has a negative FCF number, we include a dummy variable with a value of 1 if FCF is negative, and 0 otherwise. The logistic regression allows us to assess the importance of each variable after controlling for all other variables. We use a model where the dependent variable takes a value of 1 for FCF disclosing firm-years, and 0 otherwise. We summarize our model as follows:

$$\begin{aligned} Prob\ (FCF_t) = {} & \beta_0 + \beta_1 LOSS_t + \beta_2 NETINC_t + \beta_3 RETANN_t + \beta_4 SPDRC_t \\ & + \beta_5 ACCRUALS_t + \beta_6 CAPEXP_t + \beta_7 DIVIDENDS_t \\ & + \beta_8 RETANNSD_t + \beta_9 ROS_t + \beta_{10} ROA_t + \beta_{11} LEVERAGE_t \\ & + \beta_{12} CURRENT_t + \beta_{13} CFNETINC_t + \beta_{14} BOOKMKT_t \\ & + \beta_{15} PERATIO_t + \beta_{16} FCFNEG_t + \varepsilon_t \end{aligned} \quad (1)$$

where:

t = for each FCF disclosing firm and its matching non-disclosing firm, the year in which the disclosing firm disclosed FCF;
FCF = dummy variable with a value of 1 if the firm disclosed FCF, and 0 otherwise; and
FCFNEG = dummy variable with a value of 1 if Richardson's FCF measure is negative, and 0 otherwise.

Table 4 presents the results of the Logit regression model that examines firm characteristics associated with the likelihood of disclosing FCF. We use 1,578 observations, comprised of 789 disclosing firm-years and 789 matched control firm-years. *SPDRC*, *DIVIDENDS*, and *LEVERAGE* are significantly positively associated with the probability of voluntarily disclosing FCF. Also, consistent with mean differences results, *ROS* and *CURRENT* are significantly negatively associated with the likelihood of disclosing FCF. *NETINC* and *ACCRUALS* are only marginally significantly and positive. As expected, we also find that firms with negative Richardson's FCF measure (*FCNEG*) are significantly less likely

TABLE 4
Matched-Pair Cross-Sectional Logistic Regression of FCF Disclosure Probability

Model:

$$Prob(FCF_t) = \beta_0 + \beta_1 LOSS_t + \beta_2 NETINC_t + \beta_3 RETANN_t + \beta_4 SPDRC_t + \beta_5 ACCRUALS_t + \beta_6 CAPEXP_t + \beta_7 DIVIDENDS_t + \beta_8 RETANNSD_t + \beta_9 ROS_t + \beta_{10} ROA_t + \beta_{11} LEVERAGE_t + \beta_{12} CURRENT_t + \beta_{13} CFNETINC_t + \beta_{14} BOOKMKT_t + \beta_{15} PERATIO_t + \beta_{16} FCFNEG_t + \varepsilon_t$$

Variable	Predicted Sign	Coefficient	p-value[a]
Intercept	NA	−2.48	0.00***
LOSS	(+)	0.03	0.92
NETINC	(−)	−0.09	0.07*
RETANN	(−)	0.05	0.75
SPDRC	(+)	0.09	0.00***
ACCRUALS	(−)	−5.51	0.07*
CAPEXP	(+)	0.40	0.56
DIVIDENDS	(+)	0.007	0.04**
RETANNSD	(+)	0.27	0.43
ROS	(−)	−2.72	0.01***
ROA	(−)	1.99	0.24
LEVERAGE	(+)	2.01	0.00***
CURRENT	(−)	−0.32	0.00***
CFNETINC	(+)	−0.07	0.65
BOOKMKT	(−)	−0.08	0.41
PERATIO	(−)	−0.007	0.32
FCFNEG	(−)	−0.87	0.00***

*, **, *** Denote significance at p = 0.10, p = 0.05, and p = 0.01 levels, respectively, in a one-sided hypothesis test, n = 1,578.
[a] Likelihood Ratio χ^2 = 137.74 (0.000); Pseudo-R^2 = 0.14.
FCFNEG = dummy variable with a value of 1 if Richardson's FCF measure is negative, and 0 otherwise. See Table 2 for the definition of other variables.

to disclose FCF. We find no significant association between the probability of disclosing FCF and *LOSS*, *RETANN*, *CAPEXP*, *RETANNSD*, *ROA*, *CFNETINC*, *BOOKMKT*, and *PERATIO*. This suggests that some of the information contained in these variables may be captured by other variables included in the regression model. Therefore, the mean difference results for these variables should be interpreted with caution.

Overall, these results are consistent with the tests of differences in Table 2 and suggest that, on average, firms disclosing FCF are less profitable, more leveraged, less liquid, have weaker credit ratings, and pay higher dividends than other firms. We conclude that FCF firms voluntarily provide FCF disclosure to augment reported income and cash flow information. As such, FCF firms view FCF disclosures as an important complement to their traditional reporting practices in providing information to stakeholders.

ADDITIONAL TESTS WITH FCF-REPORTING SAMPLE

To further investigate the underlying motivations for firms to disclose FCF information, we compare the reported FCF measure to net income (*NETINC*) and other cash flow measures for reporting and nonreporting firms and across years. Comparing the FCF measure to other performance measures for reporting or nonreporting firms (or periods) may provide greater insights into whether firms disclose FCF when such disclosure portrays their firm's performance more favorably.

For this analysis, we focus on a matched subsample of 373 firm years for 171 unique firms that report a quantitative FCF measure that can be easily compared to *NETINC* and other cash flow measures. We label this as the FCF-Reporting Sample. As discussed earlier, to construct this subsample, we drop from the full sample: (1) firms that do not provide a quantitative FCF disclosure; (2) firms that provide FCF metrics such as free-cash-flow-to-debt coverage that are not easily comparable to benchmark performance measures; and (3) 10-Q filings because it is difficult to get corresponding information on comparative measures.

We rerun Table 2 (unreported) for the 373 FCF-Reporting Sample and compare it to Table 2 (full sample) to evaluate if the reporting firms have the same underlying characteristics as the full sample. For most variables, the results appear to be consistent, suggesting that reporting firms share the same underlying characteristics. However, we find some differences for *ROS*, *SPDRC*, and *DIVIDENDS*. Mean differences for *ROS* and *SPDRC*, which are significant for the full sample, are not significant and only marginally significant respectively for the FCF-Reporting Sample. We also find stronger results for *DIVIDENDS* for the FCF-Reporting Sample. Median differences for *DIVIDENDS* that are not significant for the full sample are significant for the FCF-Reporting Sample. We also rerun the logistic regression using the 373 FCF-Reporting Sample. For most of the variables, the results are qualitatively similar. However, consistent with mean-differences results for the FCF-Reporting Sample, we find that *SPDRC* and *ROS* are not significantly associated with the likelihood of disclosing FCF using the FCF-Reporting Sample. This suggests that conclusions that we draw for these variables for the full sample in Table 4 do not necessarily apply to the analyses in this section.

Comparison of Reported FCF with Net Income and Other Cash Flow Measures

Similar to the procedure adopted in the prior section, we match each sample firm that reported FCF with a non-FCF reporting firm based on industry (four-digit industry group), size (total assets), and fiscal year (year of FCF report). We were successful in matching all sample observations of FCF reporting firms (373) using the four-digit industry group. Table 5, Panel A provides information on reported FCF, Richardson's FCF measure, cash flow

TABLE 5
Descriptive Statistics

Panel A: Differences between Reporting Firm-Years and Matched Non-Reporting Firm-Years

	FCF Reporting Sample (n = 373)		Differences	
Variable[a]	**Mean**	**Median**	**Mean**	**Median**
Reported FCF	8.30	1.86	NA	NA
Richardson's FCF measure	5.89	1.85	4.73***	0.85**
Cash Flow from Operations (*CFO*)	7.91	3.41	4.79***	1.00**
Net Income (*NETINC*)	0.86	1.43	−1.01***	0.55

Panel B: Differences between FCF Reporting Firms across Years[b]

	FCF Reporting Years (n = 171)		Differences	
Variable	**Mean**	**Median**	**Mean**	**Median**
Richardson's FCF measure	6.20	1.78	5.22***	0.85***
Cash Flow from Operations (*CFO*)	8.09	3.23	5.16***	0.54**
Net Income (*NETINC*)	0.60	1.27	−0.55***	0.03

*, **, *** Denote statistical significance at the 0.10, 0.05, and 0.01 levels respectively.
[a] All variables are deflated using common shares (Compustat data item 25).
[b] Test of differences for sample of 171 FCF reporting firms based on mean of 373 reporting firm-years and the mean of 1,144 nonreporting firm-years.
Richardson's FCF measure = $FCF_{AIP} - I_{NEW}$, (FCF_{AIP} = *CFO* (Compustat data item 308) − *MCAPEX* (Compustat data item 125) + R&D expenditures (Compustat data item 46), I_{NEW} = total investments (*CAPEX* R&D expenditures + Acquisitions (Compustat data item 129) − Sale of Property, Plant, and Equipment (Compustat data item 107)) − *MCAPEX*.)
See Tables 1 and 2 for the definition of other variables.

from operations (CFO), and net income (*NETINC*) for FCF reporting and nonreporting firms for periods in which the firm reports FCF. Similar to Richardson (2006), we define FCF as the difference between FCF from assets in place (FCF_{AIP}) less new investment expenditure (I_{NEW}). FCF_{AIP} equals CFO less maintenance capital expenditure (*MCAPEXP*) plus R&D expenditures, and I_{NEW} equals total investments less *MCAPEXP*.[15]

We find that reported FCF is higher than *NETINC* and Richardson's FCF measure for FCF reporting firms. While both the mean and median difference (unreported results) between reported FCF and *NETINC* are positive and significant, only the mean difference between reported FCF and Richardson's FCF measure is significant. We do not conduct a difference test between reported FCF and CFO because contrary to our expectation, mean

[15] Richardson (2006) defines FCF as the difference between FCF from assets in place (FCF_{AIP}) less expected new investment, (I^*_{NEW}). I^*_{NEW} is calculated by decomposing investment expenditure on new projects (I_{NEW}) into expected investment expenditure in new positive NPV projects and over-investment (unexpected investment) using an investment model. For simplicity and to avoid introducing noise into our analysis, we follow Dechow et al. (2006) and assume that all new investments are necessary. As noted by Richardson (2006), there is an absence of theory to guide the functional form of the investment model. Moreover, the mean value of the unexpected portion of the new investment is zero. Finally, the investment model requires at least two years of data. Total investments is defined as CAPEX + R&D expenditures + Acquisitions − Sale of Property, Plant, and Equipment.

CFO is lower than mean reported FCF. We expected CFO to be higher than FCF since typically FCF is calculated by subtracting capital expenditures from CFO. To our surprise, we find that in 23 of our firm observations, reported FCF exceeds CFO, suggesting that managers may be opportunistically defining FCF to mislead investors.

We also find that Richardson's FCF measure and CFO are significantly higher and mean *NETINC* is significantly lower for FCF reporting firms than for non-FCF reporting firms. These results suggest firms emphasize FCF when cash flow information is favorable relative to earnings. Moreover, if we accept Richardson's FCF measure as an unbiased measure of FCF, the results also suggest that firms may opportunistically define FCF to increase reported FCF. We note that the median difference in *NETINC* between FCF-Reporting Sample and nonreporters is not significant.

Table 5, Panel B presents the results of comparing the characteristics of FCF reporting firms based on the means of reporting and nonreporting years for the same firm. Similar to the procedure we adopt earlier (Table 3), we compute a mean for all reporting years and another mean for all nonreporting years for each firm. Thus, in Panel B, we have one reporting and one nonreporting observation for each firm (n = 171) in contrast to Panel A, where we consider all reporting firm years (n = 373). We find that Richardson's FCF measure and CFO are significantly higher and mean *NETINC* is significantly lower in the years the firm reports FCF than in the years in which the firm does not report FCF. This suggests that firms have higher incentives to report FCF in years when cash flow measures portray the financial position of the firm more favorably than earnings.

Taken together, the results in both panels of Table 5 suggest that firms are more likely to report a FCF measure when the FCF measure and other cash flow measures portray the financial position of the firm in a more positive light than does earnings. Thus, firms may emphasize FCF to signal good news in cash flows and also to downplay bad news in earnings.

CONCLUSION

This study provides empirical evidence on a set of firms that voluntarily disclose FCF information in their 10-K and 10-Q filings. We examine (1) the extent of FCF reporting, (2) the nature of FCF disclosures, and (3) the characteristics of firms that choose to voluntarily disclose FCF information. Our analyses indicate that the number of firms disclosing FCF information is small but has grown in recent years. We document that FCF definitions vary widely, suggesting limited comparability of FCF disclosures across firms. We also find that for firms providing FCF disclosures, FCF is nearly always positive. Our results indicate that firms engaging in FCF disclosures are more highly leveraged and less profitable than a matched set of similar-sized firms in their own industries. Moreover, on average, FCF disclosing firms have lower credit ratings and lower valuations, but pay out larger dividends than do comparable firms. In addition, firms are more likely to report FCF when FCF and other cash flow measures portray the financial position of the firm in a more positive light than does earnings. These results suggest that FCF firms provide FCF disclosures to augment reported income and cash flow information. We infer that firms that elect to emphasize FCF likely have a desire or need to direct stakeholders' attention to cash flows. As such, our results suggest that FCF firms view FCF disclosures as an important complement to their traditional reporting practices.

Because positive FCF news is more likely to appear when earnings news is weak, our results are also potentially consistent with concerns that managers release FCF information to mislead market participants. To address this issue, the researcher would need to assess whether the FCF or earnings news is more predictive of a company's current and future

performance, which is beyond the scope of our study. We encourage future researchers to undertake such a study to help the regulators understand whether this type of voluntary non-GAAP reporting is, on average, enhancing or overshadowing the information of the GAAP numbers.

Our study is subject to limitations that should be considered when interpreting our findings. In our main tests, we treat all FCF disclosures as homogenous, though there could be differences between FCF disclosures in 10-K versus 10-Q filings or between qualitative and quantitative FCF disclosures. Future research can examine in greater detail the differences between various types of FCF disclosures and the possible reasons for these differences. Additionally, we only indirectly relate our study to the pro forma earnings literature. A future study could examine differences in FCF and pro forma earnings.

APPENDIX

WATTS INDUSTRIES, INC.
10-K Filed on 03/26/2003

We had positive free cash flow of $28,536,000 (defined as net cash provided by continuing operations minus capital expenditures and dividends plus proceeds from sale of assets) during the 12 months ended December 31, 2002 versus positive free cash flow of $29,035,000 in the comparable prior-year period. We experienced an increase in accounts receivable due to increased sales volume, a change in industry-wide payment terms from The Home Depot, Inc., our largest customer, while remaining within normal industry standards, and the addition of accounts receivable from our Cheng Guan joint venture established in March 2002. This is offset by increased income from continuing operations and increased depreciation expense compared to the comparable period.

We believe free cash flow to be an appropriate supplemental measure of the operating performance of our Company because it provides investors with a measure of our ability to repay debt and to fund acquisitions. Our computation may not be comparable to other companies that may define free cash flow differently. Free cash flow does not represent cash generated from operating activities in accordance with Generally Accepted Accounting Principles (GAAP). Therefore, it should not be considered an alternative to net cash flows from operating activities as an indication of our performance. Free cash flow should also not be considered an alternative to net cash flows from operating activities as defined by GAAP.

A reconciliation of free cash flow to net cash provided by continuing operations is provided below:

	12 Months Ended 12/31/02	12 Months Ended 12/31/01
	(in thousands)	
Net cash provided by continuing operations	$ 51,425	$ 51,237
Less: additions to property, plant, and equipment	(19,593)	(16,047)
Plus: proceeds from the sale of property, plant, and equipment	3,194	267
Less: dividends	(6,490)	(6,422)
Free cash flow	$ 28,536	$ 29,035

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