Unusual operating cash flows and stock returns

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ARTICLE INFO

JEL classification:
M41
G14

Keywords:
Unusual cash flows from operations
Cash flow prediction
Stock returns
Market efficiency

ABSTRACT

The current financial reporting of cash flows from operations does not present individual sources of these cash flows, making it difficult for investors to assess a firm’s future performance. I hand-collect individual cash flows from unusual operations and examine their characteristics for predicting future cash flows. The results show that the unusual individual cash flow items contain a significant incremental predictive ability for future cash flows. Additional return tests show that stock prices fail to fully reflect their predictive value, suggesting that the current reporting practice may mislead investor perceptions of a firm’s cash generating ability and investors could benefit from a more explicit presentation of cash flows from operations.

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1. Introduction

This paper examines the abilities of several unusual sources of cash flows from operations for indicating future economic conditions – future cash flows, and it examines whether the stock market participants fully reflect the predictive value contained in these individual cash flows. It aims to provide evidence whether, in predicting future cash flows and gauging the persistence of current cash flows, investors are better off knowing individual significant or unusual transactions that generate current cash flows from operations. The Financial Accounting Standards Board (FASB) requires a statement of cash flows filed periodically to the Securities and Exchange Commission (SEC) as part of financial filings, on the basis of helping investors, creditors, and others assess the amount, timing, and uncertainty

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1 This paper is partly based on my dissertation completed at University of California, Berkeley.

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doi:10.1016/j.jaccpubpol.2008.07.004
of prospective cash flows.² Cash flows from operations, the operating section of a statement of cash flows, provide a key metric in assessing a firm’s ability to generate cash from internal operations and remain viable. Currently, most firms adopt indirect methods of adjusting earnings by accruals to present cash flows from operations. Its practical implementation imposes two difficulties for analyzing a company’s cash power. First, investors without insider information are not able to derive the same number as what the company reports as cash flows from operations if they apply the indirect method mechanically.³ Second, although the statement of cash flows from operations prepared by companies reports changes in the balance of current accounts (i.e., accruals) excluding transactions that do not relate an operating source or use of cash to an income statement account, it does not present what underlying transactions cause changes in accruals or other operating cash flows, and thus determine the total amount of operating cash flows. Firms are neither required to disclose the individual sources of operating cash flows in the footnote disclosures. Not revealing explicitly how companies generate operating cash flows, a statement of cash flows lacks transparency needed for an investor to fully appreciate its economic implications. In worse scenarios, management could opportunistically report a desired amount of total operating cash flows to influence investor perception of the firm’s cash generating ability and future prospects.

This paper hand collects individual operating cash flows generated from significant or unusual transactions and examines their incremental value in forecasting future cash flows over items typically reported in a statement of cash flows. These unusual operating cash flows are selected based on anecdotally documented problems in operating cash flow reporting (Mulford and Comiskey, 2002), and their information has to be widely available from footnote disclosures by sample firms. They are unusual in the sense that their distinct economic characteristics could cause misperception of the cash generating ability if investors treat them the same as other operating cash flows. The selected items are: (1) nonrecurring cash, (2) tax benefits realized from exercises of nonqualified employee stock options, (3) cash used in investment activities (R&D and restructuring), and (4) cash from selling or securitizing accounts receivable.⁴ The benchmark cash forecast model for examining their incremental predictive abilities incorporates the forecasting variables of the Barth et al. (2001) model that is shown to have the most superior predictive ability. The results show that the unusual sources of operating cash flows provide significant incremental predictive value and possess differential persistence from other operating cash flows, implying that knowing the individual unusual or significant transactions and resulting operating cash flow helps in projecting future economic conditions.

I then investigate whether the stock market participants value the unusual sources of operating cash flows consistently with their implications for future cash flows. The findings indicate that stock prices do not fully reflect the predictive value of tax benefits and R&D expenses, and that investors do not immediately anticipate the lower future cash flows experienced by firms that sell or securitize part of accounts receivables to expedite the cash collection. Hedge portfolios based on their incremental predictive value can generate significant abnormal returns over the subsequent six months to three years.

This paper contributes to the accounting and financial market literature in a number of important ways. It is the first study to hand-collect operating cash flow components to explore the economic implications and stock market perception of unusual sources of operating cash flows that can potentially bias investor perception of the firm’s cash strength. Very few prior studies have explicitly examined the predictive ability of components of operating cash flows. A recent study by Cheng and Hollie (2008) differentiates between core and non-core operating cash flows in predicting future cash flows, where core and non-core cash flows are defined parallel to the presentation and format of operating income. Their estimation of cash flow components is subject to bias or errors from using balance sheet

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³ See Bahnson et al. (1996) and Drtina and Largay (1985) for non-articulated differences in a statement of operating cash flows. The indirect method adjusts net income by changes in noncash current accounts, assuming that changes in a current account relate an operating source or use of cash to an income statement account. When current accounts change without a link to the income statement, errors occur when mechanically applying the indirect method. For example, if stock shares are issued to settle a portion of accounts payable, a non-articulated difference occurs when net income is adjusted by changes in the balance of accounts payable that obviously are not related to use of cash or an income statement item.
⁴ There could be other unusual operating cash flow items, but obtaining them is often infeasible and could require inside information. For example, cash flows from the purchase or sale of trading securities are one of the emphasized problematic operating cash flows listed in Mulford and Comiskey (2002), but I find little information about them in the financial filings.
based cash flow information (Collins and Hribar, 2002). Hand-collection of operating cash flow components avoids the measurement problems. This study also adds to prior explanations for the predictive ability of current aggregate cash flows for future returns (e.g., Chan et al., 1991; Fama and French, 1996; Sloan, 1996). Dechow et al. (2007) decompose total operating cash flows based on how they are used to explain the market inefficiency in incorporating information in cash flows. No prior studies have examined the sources of operating cash flows to explain the stock market inefficiency. The informativeness of current operating cash flows about the future performance should be mainly determined by characteristics of underlying transactions that generate these cash flows. The evidence implies that investors may not fully understand the economic implications of the underlying unusual cash flows whose information is often times imbedded in footnote disclosures. This research calls for more salient presentation and an increased level of disclosures, and provides insights for policy makers of financial reporting standards.

The remainder of the paper is organized as follows. Section 2 examines the characteristics of the selected unusual operating cash flows for predicting future cash flows. Section 3 describes the sample and data collection. Section 4 reports the empirical results of the predictive value and the stock return analysis. Section 5 concludes the paper.

2. Unusual sources of cash flows from operations and research methodology

2.1. Economic characteristics

The selected unusual sources of operating cash flows possess economic characteristics distinct from other operating cash flows generated from ordinary and continuing operations.

2.1.1. Nonrecurring cash flows

Under the indirect method of presenting cash flows from operations, net income is reconciled by accruals to derive operating cash flows. Net income could contain many nonrecurring items, whose associated cash portions are included in total operating cash flows. Companies can classify income items to be nonrecurring based on their functional properties, such as income generated from discontinued operations. Companies also can opportunistically classify certain negative or positive items as nonrecurring to influence investor perception of the firm’s performance. Gu and Chen (2004) find that the income items treated by financial analysts as nonrecurring have a significant ability to indicate future performance. By definition, nonrecurring items should be irrelevant for forecasting a firm’s future performance, i.e., a zero predictive ability.5 It remains an empirical question whether the operating cash flows claimed by companies to be nonrecurring are relevant for forecasting future cash flows.

2.1.2. Tax benefits from exercises of nonqualified employee stock options

When nonqualified employee stock options are exercised, the issuing company will receive a tax benefit that equals the product of the tax rate and the difference between the exercise price and market price on the date options are exercised. A profitable company may use this tax benefit to reduce current tax payable and save cash payments for taxes. Tax payment generally is classified as an operating activity. However, tax benefits from option exercises arise from granting stock shares to employees, a form of non-debt financing activity (Kahle and Shastri, 2005), so they also can be financing cash flows. In 2000, the Emerging Issues Task Force reached a consensus that such tax benefits should be included in operating cash flows.6 Not only do the tax benefits possess a non-operating feature, they

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5 Ohlson (1999) uses the term “forecasting irrelevancy” to describe one of the conditions that transitory items possess: forecasting irrelevant for next period’s abnormal earnings. This paper uses future cash flows to represent a firm’s future performance. Therefore, transitory or nonrecurring operating cash flows should satisfy forecasting irrelevancy for future cash flows.

6 The Emerging Issues Task Force (EITF) Issue 00-15 requires the tax benefits be classified as operating cash flows, effective for financial statements after July 20, 2000. Prior to the effective date, companies had the choice of reporting them in operating cash flows or financing cash flows. I collect tax benefits that are included in operating cash flows. The revised FASB No. 123, effective from June 2005, requires the tax benefit be classified as financing cash flows and will eliminate it as an unusual operating cash flow item. The newer requirement is irrelevant for my sample period of 1988–2000.
also are not directly influenced by management strategic operations like the other operating cash flows are. Employee exercise decisions and market conditions will mostly determine the amount. The huge amount of option grants and option exercises have created large corporate tax deductions and boosted operating cash flows during the market boom period from the year 1998–2001, whereas not as many benefits have accrued during the recent recession, which creates volatility in operating cash flow statements. Notably, the high levels observed in the late 1990s seem less likely to represent recurring cash flows. On the other hand, option exercises accompanied by strong market conditions also could indicate strong underlying operations and promise a prosperous future performance.

2.1.3. Operating cash expenditures related to investing activities

If potential investment endeavors are expensed as incurred in the income statement, the associated cash expenditures are treated as operating cash outflows. Research and development activities and restructuring activities are examples of such immediately expensed investment activities. They are investments intended to bring long-term benefits and improve future profitability. Most R&D expenses are cash expenditures, and restructuring activities also require substantial cash payment. Expensing these investment activities immediately will not only beat down earnings, but also reduce operating cash flows significantly. Prior studies have documented positive abnormal returns following R&D investments, suggesting that investors might be too pessimistic about the current period’s under-performance and under-react to the future benefits (e.g., Chan et al., 2001; Eberhart et al., 2004; Penman and Zhang, 2002). If firms make consecutive investments and associated benefits materialize much later, predictable lower future cash flows will result. Conversely, when firms decrease investments and profits emerge out of past successful investments, positive future cash flows will arise. No prior research has provided a functional form for the differential economic relation of current R&D investments with future benefits from that of other periodic operating expenses, especially in the context of an operating cash flow item.

2.1.4. Cash proceeds from sale or securitization of accounts receivable

Credit sale transactions are followed with increases in revenues and accounts receivables. Any collection from customers will decrease the balance of accounts receivable and increase cash flows from operations. Instead of waiting several years for customers to pay back, management can discretionarily securitize or sell receivables all at once to collect cash much faster and temporarily boost current operating cash flows. A significant amount of such cash inflows can distort the perception of a firm’s financial health if these discretionary cash flows do not recur. Nonetheless, if firms engage in these transactions regularly as a cheaper way of financing, the cash inflows during one period could be a good indicator for cash flows in the next period, because the underlying receivables sold or securitized are continuously generated from the core operations. Mechanically, discounting receivables collectible in multiple future years to the present will reduce cash flows received in future periods compared with everything-else-equal firms that do not sell receivables.

2.2. Research methodology

Barth et al. (2001), referred to as BCN thereafter, empirically examine the predictive power of several forecast models and conclude that the forecast specification using total cash flows from operations (CFO) and major accrual components – change in accounts receivable (ΔAR), change in accounts payable (ΔAP), change in inventory (ΔINV), depreciation and amortization (DEPAMO), and other accruals (OACC) – has a better predictive performance than other models. If components of operating cash flows do not differ in predictive abilities, or if they differ but information in these differences is captured by the accrual components, adding individual component of operating cash flows in the BCN model will not help for better prediction. Therefore, even if unusual components of operating cash flows possess distinct economic characteristics, knowing them individually would not add benefits to investors. To have a robust examination of the incremental predictive value of unusual sources of operating cash flows, I use forecasting variables in the BCN model and capital expenditures (CAPITAL) as explanatory variables in the benchmark cash forecast model.
I predict two types of future cash flows: operating cash flows (CFO) and free cash flows (FCF). FCF is the difference between CFO and \( \text{CAPITAL} \).

The following model examines the incremental predictive abilities of the selected unusual components of operating cash flows. Every unusual component is part of total operating cash flows (CFO). Therefore, with CFO in the forecast model, the coefficient on each unusual component represents its incremental predictive ability as well as its differential predictive ability from the rest of usual operating cash flows

\[
\text{CFO}_{t+n} = \alpha + \beta_1 \text{CFO}_t + \beta_2 \text{CAPITAL}_t + \beta_3 \Delta \text{AR}_t + \beta_4 \Delta \text{INV}_t + \beta_5 \Delta \text{AP}_t + \beta_6 \Delta \text{DEPAMO}_t + \beta_7 \Delta \text{OACC}_t + \epsilon_{t+n} \tag{1}
\]

I allow the incremental predictive ability of tax benefits from exercises of nonqualified employee stock options (\( \text{TAXBEN} \)) to differ across time periods, due to the exceptionally large amount of tax benefits created in the market boom period. Therefore, with CFO in the forecast model, the coefficient on each unusual component represents its incremental predictive ability as well as its differential predictive ability from the rest of usual operating cash flows

\[
\text{CFO}_{t+n} = \alpha + \beta_1 \text{CFO}_t + \beta_2 \text{CAPITAL}_t + \beta_3 \Delta \text{AR}_t + \beta_4 \Delta \text{INV}_t + \beta_5 \Delta \text{AP}_t + \beta_6 \Delta \text{DEPAMO}_t + \beta_7 \Delta \text{OACC}_t + \delta_1 \text{NONREC}_t + \delta_2 Y \times \text{TAXBEN}_t + \delta_3 Y' \times \text{TAXBEN}_t + \delta_4 Y'' \\
\times \text{TAXBEN}_t + \delta_5 \Delta \text{RD}_t + \delta_6 \Delta \text{RESTR}_t + \delta_7 \Delta \text{ARFIN}_t + \epsilon_{t+n} \tag{2}
\]

The coefficient \( \delta_1 \) on nonrecurring cash flows (\( \text{NONREC} \)), reflects its incremental predictive ability. The total coefficient on \( \text{NONREC} \), \( \beta_1 + \delta_1 \), tests whether nonrecurring cash flows are forecasting irrelevant, i.e., a zero predictive ability. I allow the incremental predictive ability of tax benefits from exercises of nonqualified employee stock options (\( \text{TAXBEN} \)) to differ across time periods, due to the exceptionally large amount of tax benefits created in the market boom period. \( Y, Y' \) and \( Y'' \) are year indicators: \( Y \) equals 1 if prior to the market boom period (1988–1998), and otherwise 0; \( Y' \) equals 1 for year 1999 and otherwise 0; \( Y'' \) equals 1 for year 2000 and otherwise 0. \( \text{RD} \) measures cash used in research and development activities. The cash settlement for restructuring activities usually lasts several years. \( \text{RESTR}_t \) represents operating cash outflows incurred in fiscal year \( t \) for prior and current year restructuring activities. \( \text{ARFIN}_t \) measures the discretionary cash proceeds received or forgiven in fiscal year \( t \) from selling or securitizing accounts receivables. The indicator variable \( \text{DUM} \) controls for the systematic difference in future cash flows between firms that engage in these transactions (\( \text{DUM} = 1 \)) and firms that do not (\( \text{DUM} = 0 \)). Its coefficient is expected to be negative. Coefficient on the interaction term of \( \text{ARFIN} \) and \( \text{DUM} \), \( \delta_4 \), reflects the incremental predictive ability of \( \text{ARFIN} \) within firms that engage in these transactions. All variables except indicator variables are scaled by average total assets.

The inclusion of accrual components and capital expenditures as explanatory variables in model (2) does not allow direct examination of the persistence of unusual components. The following equation tests their persistence in predicting future operating cash flows. The coefficient on each unusual cash flow component, \( \delta \), reflects its differential persistence from the rest of usual operating cash flows.

\[
\text{CFO}_{t+n} = \alpha + \beta_1 \text{CFO}_t + \delta_1 \text{NONREC}_t + \delta_2 \text{TAXBEN}_t + \delta_3 \text{RD}_t + \delta_4 \text{RESTR}_t + \delta_5 \text{ARFIN}_t \times \text{DUM}_t + \delta_6 \text{DUM}_t + \epsilon_{t+n} \tag{3}
\]

### 3. Sample and data collection

The sample firms are Fortune 500 firms as of 2001 that are listed on NYSE, AMEX, and NASDAQ. The selection of mature and large firms ensures that cash flow information, together with other financial information, plays an important role to market participants in assessing a firm’s future prospects and stock value. The sample period is from year 1988 to 2000. Starting from year 1988, most firms adopted SFAS 95 for preparing the cash flow statement based on indirect method. I exclude financial services firms (SIC codes 6000–6999) because their cash flow activities are quite different from other industrial firms. I also remove regulated firms (SIC codes 4000–4999) because their cash flows are subject to regulatory intervention and restructuring cash expenditures often are not available. I conduct a detailed and thorough examination of the full set of financial statements and footnote disclosures to collect the unusual operating cash flows. Half of the sample reports R&D activities, and firms reporting \( \text{NONREC}, \text{TAXBEN}, \text{RESTR} \) and \( \text{DUM} \) (\( \geq 1 \)) amount to 25%, 20%, 27% and 15%, respectively, of the whole sample. The 10-K filings of each firm are obtained from EdgarScan, EdgarOnline, or the Lexis/Nexis database. Other financial data are from \text{Compustat} Annual Industrial and Research Files, and stock return data are from CRSP. Firm-year observations need to
CFO($\text{FCF}_{t+1}$) = $\alpha + \beta_1 \text{CFO}_t + \beta_2 \text{CAPITAL}_t + \beta_3 \Delta \text{AR}_t + \beta_4 \Delta \text{INV}_t + \beta_5 \Delta \text{AP}_t + \beta_6 \text{DEPAMO}_t + \beta_7 \text{OACC}_t + \epsilon_{t+1}$

\begin{equation}
\text{CFO}^{\text{NonREC}}_{t+1} = \alpha + \beta_1 \text{CFO}_t + \beta_2 \text{CAPITAL}_t + \beta_3 \Delta \text{AR}_t + \beta_4 \Delta \text{INV}_t + \beta_5 \Delta \text{AP}_t + \beta_6 \text{DEPAMO}_t + \beta_7 \text{OACC}_t + \delta_1 \text{NONREC}_t + \delta_2 Y \times \text{TAXBEN}_t + \delta_3 Y^* \times \text{TAXBEN}_t + \delta_4 Y^* \times \text{TAXBEN}_t + \delta_3 \text{RD}_t + \delta_4 \text{RESTR}_t + \delta_5 \text{ARFIN}_t \times \text{DUM}_t + \epsilon_{t+1}
\end{equation}

### Table 1

<table>
<thead>
<tr>
<th>Benchmark model (1)</th>
<th>Model (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFO$_{t+1}$</td>
<td>CFO$_{t+1}$</td>
</tr>
<tr>
<td>FCF$_{t+1}$</td>
<td>FCF$_{t+1}$</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>CFO</th>
<th>FCF$_{t+1}$</th>
<th>FCF$_{t+1}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>NONREC</td>
<td>-0.223</td>
<td>-0.279</td>
<td></td>
</tr>
<tr>
<td>(0.02)</td>
<td>(0.02)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y$\times$TAXBEN</td>
<td>1.010</td>
<td>1.079</td>
<td></td>
</tr>
<tr>
<td>(0.00)</td>
<td>(0.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y$^*\times$TAXBEN</td>
<td>0.378</td>
<td>0.592</td>
<td></td>
</tr>
<tr>
<td>(0.18)</td>
<td>(0.10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RD</td>
<td>-0.140</td>
<td>-0.212</td>
<td></td>
</tr>
<tr>
<td>(0.00)</td>
<td>(0.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RESTR</td>
<td>-0.026</td>
<td>-0.189</td>
<td></td>
</tr>
<tr>
<td>(0.89)</td>
<td>(0.39)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARFIN$\times$DUM</td>
<td>-0.012</td>
<td>-0.003</td>
<td></td>
</tr>
<tr>
<td>(0.90)</td>
<td>(0.98)</td>
<td></td>
<td></td>
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<tr>
<td>DUM</td>
<td>-0.010</td>
<td>-0.012</td>
<td></td>
</tr>
<tr>
<td>(0.00)</td>
<td>(0.00)</td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>CFO</th>
<th>FCF$_{t+1}$</th>
<th>FCF$_{t+1}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPITAL</td>
<td>-0.033</td>
<td>-0.0511</td>
<td></td>
</tr>
<tr>
<td>(0.50)</td>
<td>(0.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ΔAR</td>
<td>0.452</td>
<td>0.412</td>
<td></td>
</tr>
<tr>
<td>(0.00)</td>
<td>(0.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ΔINV</td>
<td>0.355</td>
<td>0.201</td>
<td></td>
</tr>
<tr>
<td>(0.00)</td>
<td>(0.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ΔAP</td>
<td>-0.460</td>
<td>-0.423</td>
<td></td>
</tr>
<tr>
<td>(0.00)</td>
<td>(0.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEPAMO</td>
<td>0.327</td>
<td>0.280</td>
<td></td>
</tr>
<tr>
<td>(0.00)</td>
<td>(0.48)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OACC</td>
<td>0.209</td>
<td>0.187</td>
<td></td>
</tr>
<tr>
<td>(0.00)</td>
<td>(0.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\chi^2$ test</td>
<td>(β1 + δ1 = 0)</td>
<td>(β1 + δ1 = 0)</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>45%</th>
<th>28%</th>
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</thead>
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<tr>
<td>Adj. $R^2$</td>
<td>47%</td>
<td>30%</td>
</tr>
</tbody>
</table>

This table presents the estimation results for the benchmark cash forecast model (1) and the model with unusual operating cash flows (2) in predicting future one-year-ahead operating cash flows and free cash flows. Estimation results for predicting future two-years- and three-years-ahead cash flows are similar. The estimates for intercepts are suppressed. Numbers in bold indicate a significant difference from zero at or below 10% level, two-sided. $p$-Values in parentheses below the coefficient estimates are associated with heteroscedasticity adjusted White-$t$ statistics, and $p$-values associated with the Chi-squared tests for nonrecurring cash flows are based on the heteroscedasticity adjusted covariance of estimates.

The sample contains firms from Fortune 500 index as of 2001. The sample period is 1988–2000. Unusual operating cash flows are collected from financial filings. NONREC is operating cash flows claimed explicitly as nonrecurring. TAXBEN is tax benefits realized in the current year as cash savings from employee exercises of nonqualified stock options. RD is cash expenditures for research and development activities, a negative amount. RESTR is cash expenditures incurred in the current year for prior and current restructuring activities, a negative amount. ARFIN is discretionary cash flows received or forgone from selling or securitizing accounts receivables. $DUM$ equals 1 if firms engage in the sale or securitization, and 0 otherwise. CFO is total cash flows from operations (Compustat item #308). I use reported cash flows from operations in 10-K filings if it is inconsistent with item #308. CFO equals $CFO$ minus capital expenditures (#128), or equals $CFO$ plus cash flow from investing activities (#311) if #128 is missing. CAPITAL equals CFO minus FCF. The accruals are defined the same as those in Barth et al. (2001) per the statement of operating cash flows. ARFIN: change in the accounts receivable. #302; ΔINV: change in inventory, #303; ΔAP: change in accounts payable, #304; DEPAMO: depreciation and amortization expenses, #125; and other accruals (OACC): total accruals (earnings (#18) – CFO) minus (ΔAR + ΔINV – ΔAP – DEPAMO). If data items 302, 303, 304 and 125 are missing, then ΔAR, ΔINV, and ΔAP are estimated from the balance sheet accounts. All variables except DUM are scaled by the average total assets (Compustat item #6).
have sufficient data to test the incremental predictive abilities, resulting in a sample of 3172 firm-year observations and a total of 290 firms.

4. Empirical results

4.1. Incremental predictive abilities and persistence

Table 1 reports coefficient estimates and associated \( p \)-values on the unusual components of operating cash flows in predicting future one-year operating cash flows and free cash flows. Predicting future two- and three-year cash flows yield very similar results (not reported). The results from estimating the benchmark forecast model (1) show that accrual components and total operating cash flows are significantly associated with future cash flows, consistent with Barth et al. (2001). \( \text{CAPITAL} \) does not possess incremental information relating to future operating cash flows, suggesting that the accrual variable – depreciation and amortization (\( \text{DEPAMO} \)) absorbs information about future operating cash benefits in the current capital expenditures. \( \text{CAPITAL} \) has a significantly negative association with future free cash flows, probably because the predictable future capital expenditures are subtracted in deriving future free cash flows.

The right two columns of Table 1 present the estimation results for model (2). The results indicate that individual cash flows from unusual operations jointly provide significant incremental value in predicting future cash flows over items typically reported in a statement of cash flows – major accrual components and total operating cash flows. Specifically, \( \text{NONREC} \) predicts less future cash flows with significant incremental coefficients of \(-0.223\) and \(-0.279\) for future one-year operating and free cash flows. Chi-squared tests reject \( b_1 + d_1 = 0 \), implying that current \( \text{NONREC} \) has a significant forecasting ability for the next year’s cash flows, which stands in contrast to the claim of “nonrecurring” cash flows made by companies in the financial filings. It eventually becomes forecasting irrelevant for the three-year-ahead cash flows. Tax benefits generally predict higher future cash flows than other operating cash flows with positive incremental coefficients, especially for tax benefits realized prior to the market boom period. The significance diminishes and coefficients turn negative on tax benefits realized in the market boom period (year 1999 and 2000). The strongly positive coefficient implies that tax benefits arising from option exercises could reflect strong underlying business operations and in turn, indicate a promising future performance and predict more exercises of stock options. However, the large benefits created by the boom are not as promising. The negative incremental coefficient on \( \text{RD} \) (measured in negative) suggests that R&D cash outflows contribute to higher future benefits than do other operating cash outflows. The lower coefficient on R&D expenditures reflects the offsetting of positive future benefits and recurring R&D investments. The expenses for restructuring activities are usually paid for over a number of years, so the yearly cash payment (\( \text{RESTR} \)) exhibits the same predictive ability as other operating cash expenses, with an insignificant coefficient. The

Table 2
Persistence of unusual components of operating cash flows

<table>
<thead>
<tr>
<th>CFO_{t+1}</th>
<th>NONREC</th>
<th>TAXBEN</th>
<th>RD</th>
<th>RESTR</th>
<th>ARFIN \times DUM</th>
<th>DUM</th>
<th>Adj. R^2</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.546</td>
<td>-0.181</td>
<td>0.531</td>
<td>-0.258</td>
<td>0.257</td>
<td>-0.080</td>
<td>-0.014</td>
<td>41%</td>
</tr>
<tr>
<td>(0.00)</td>
<td>(0.06)</td>
<td>(0.02)</td>
<td>(0.00)</td>
<td>(0.18)</td>
<td>(0.42)</td>
<td>(0.00)</td>
<td></td>
</tr>
<tr>
<td>0.454</td>
<td>-0.295</td>
<td>0.201</td>
<td>-0.302</td>
<td>0.050</td>
<td>-0.132</td>
<td>-0.016</td>
<td>31%</td>
</tr>
<tr>
<td>(0.00)</td>
<td>(0.01)</td>
<td>(0.38)</td>
<td>(0.00)</td>
<td>(0.85)</td>
<td>(0.10)</td>
<td>(0.00)</td>
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<tr>
<td>0.435</td>
<td>-0.377</td>
<td>-0.070</td>
<td>-0.275</td>
<td>-0.042</td>
<td>-0.083</td>
<td>-0.015</td>
<td></td>
</tr>
<tr>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.76)</td>
<td>(0.00)</td>
<td>(0.83)</td>
<td>(0.32)</td>
<td>(0.00)</td>
<td>27%</td>
</tr>
</tbody>
</table>

This table presents the estimation results for model (3). Coefficient estimates on unusual components of operating cash flows represent their respective different persistence from the rest of operating cash flows. Numbers in bold indicate a significant difference from zero at or below 10% level, two-sided. \( p \)-values in parentheses below the coefficient estimates are based on heteroscedasticity adjusted White-\( t \) statistics. See Table 1 for sample description and variables measurement.
Fig. 1. Time-series means and $t$-statistics (in bracket) of hedge portfolio returns over various return windows. Each year starting 3 months after fiscal year-end, I rank stocks into equal-sized quartiles based on RD and TAXBEN using firms that disclose the respective item. I calculate the size-adjusted returns to hedge portfolios of buying the top TAXBEN (bottom RD) quartile of firms and selling the bottom TAXBEN (top RD) quartile of firms over the subsequent three-month, six-month, and each of the future three years. The top two graphs depict the average returns and $t$-statistics for each return window across 13 years from 1988 to 2000 for RD and 11 years from 1988 to 1998 for TAXBEN. The bottom graph calculates the average difference in size-adjusted returns from 1988 to 2000 between a portfolio of firms that do not sell receivables (DUM = 0) and firms doing so (DUM = 1). See variable definitions in Table 1. Bolded $t$-statistics represent a two-tailed significance level at or below 10%.
discretionary cash proceeds from selling or securitizing accounts receivables have the same predictive ability as other cash flows generated from ordinary business avenues. However, firms engaging in these financing facilities will systematically entail $0.01 lower cash flows in multiple future years than do other firms. This finding implies that although management may exercise discretion to receive cash much faster and temporarily increase operating cash flows, future cash flows will suffer.

Table 2 presents the estimation results for the persistence of individual operating cash flows in predicting future three years’ operating cash flows. These unusual operating cash flows have a different persistence from other operating cash flows, in a similar manner to their incremental predictive abilities reported in Table 1. This similarity implies that the incremental predictive abilities of the unusual components remain robust to the correlation, if there is any, between the unusual operating cash flows and other forecast variables in model (2).

I also perform robustness tests for the incremental predictive value, such as using alternative benchmark forecast models, or running a separate forecast model for each unusual component instead of including all in one forecasting equation. The incremental predictive abilities of unusual components of operating cash flows remain qualitatively the same.

4.2. Stock market returns analysis

At the time of financial statement release, if investors fail to distinguish unusual operating cash flows from other operating cash flows but form naïve expectations of future cash flows without recognizing their incremental predictive value, as new information arrives or actual cash flows are revealed, stock prices will gradually reflect the information and predictable abnormal returns will result. To test whether stock prices immediately reflect the positive (negative) incremental predictive value in unusual operating cash flows, I calculate portfolio returns to hedge positions that buy the top (bottom) quartile and sell the bottom (top) quartile of stocks ranked on the magnitude of each unusual cash flow item. Each year starting three months after fiscal year-end, I rank stocks into equal-sized quartiles using firms that disclose the respective item. Fig. 1 depicts the average abnormal returns and associated t-statistics to hedge portfolios formed on the basis of TAXBEN, RD, and DUM over the return windows of subsequent three months, six months, and each of the future three years. The results show that hedge positions based on TAXBEN generate significantly positive returns over the subsequent three months up to one year. Hedge portfolios based on RD produce substantial positive returns over the subsequent three months through the entire three years. Firms that sell or securitize accounts receivables (DUM = 1) experience a significant 3.3% lower return over the subsequent six months than firms that do not engage in such discretionary activity (DUM = 0). Strategies based on NONREC do not generate significant returns over any return window (not reported) even though it has an incrementally negative association with future cash flows. The correct valuation probably benefits from the emphasis many firms place on nonrecurring cash flows via a separate line item in the cash flow statement. RESTR does not contain incremental predictive value, and consequently, the results indicate no associated abnormal returns. Results are qualitatively the same with size-adjusted returns and market-adjusted returns.

I also conduct cross-sectional (Fama and MacBeth, 1973) regressions of one-year-ahead abnormal returns on the unusual components of operating cash flows, controlling for previously documented return predictors and risk factors. The results confirm the predictable associations observed in Fig. 1. The overall evidence suggests that investors underestimate the future cash flows predictable by R&D investments or by tax benefits from employee exercise of stock options, and investors do not immediately anticipate the lower future cash flows caused by selling or securitizing accounts receivables.

5. Conclusions

By collecting operating cash flows from unusual or significant transactions, this paper explores information in individual cash flows about future economic conditions. The evidence shows that unusual sources of operating cash flows, whose information is imbedded in footnote disclosures, possess significant incremental predictive value and have a different persistence from other usual operating
cash flows. Presenting them saliently will add significantly to the informativeness of a cash flow statement. The stock market participants do not seem to fully value the unusual operating cash flows consistently with their implications for future cash flows. The current practice of imbedding information in the footnotes about individual significant transactions and the resulting operating cash flows may not help investors to fully incorporate the implications of current operating cash flows for future economic conditions.

For illustrative purpose, this paper examines several unusual sources of operating cash flows that can be obtained from financial statements and footnote disclosures. Under current corporate reporting practice, information about many other unusual sources of operating cash flows is often times hidden from an outside investor and omitted in financial filings. The evidence presented here highlights a serious problem facing standard-setting bodies: If stock prices do not fully reflect the implications of items that are costly to collect but still identifiable, how much mis-pricing would we expect for other unusual sources of operating cash flows that are less widely disseminated, non-disclosed or concealed by firms in the financial statements?

Acknowledgements

I am grateful to Sunil Dutta, Daniel L. McFadden, and Xiao-Jun Zhang for their valuable comments and suggestion. I appreciate the encouragement by editors Martin Loeb and Lawrence Gordon, and valuable comments from the reviewers. I am also thankful to William Beaver, S.P. Kothari, Stephen Penman, Theodore Sougiannis, Brett Trueman, and workshop participants at University of California, Berkeley, Stanford University, and 2005 AAA annual conference in San Francisco, for their helpful insights. I appreciate the continuous support and encouragement from Dr. Yi Zheng and Ms. Dan Yu.

References