Accounting Earnings, Change in Market Value and Cash Flows

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Abstract

We identify two sources of growth in value of enterprise operating assets: (1) cash investment, which comes from additional debt, from additional equity, and/or from cash assets; and, (2) increase in the value of assets in place. Similarly, there are two sources of contraction: (1) cash is removed from the firm to pay down debt, to pay dividends to equity holders and to build up cash reserves; and, (2) decrease in the value of assets in place. We argue and demonstrate empirically that accounting differs with both the source and the sign of growth/contraction. Although the effect on earnings of enterprise growth/contraction due to investment/disinvestment of cash by the owners of the enterprise has received little attention in the extant literature, we show that it explains more of earnings than is explained by change in value of the assets in place. Accounting for the latter source of growth has received much attention in the recent literature which focuses on the difference in the portion of the increase in value of *equity* that is captured in current earnings vis-à-vis the portion of a decrease in value of *equity* that is captured in current earnings. We show similar results when we examine the portion of change in *enterprise value* that is captured in earnings of the firm. Our primary contribution to the literature is our analysis of the role of cash flow in understanding the earnings/returns relation, which is the most fundamental and most studied relation in market-based accounting research.

Keywords: Accounting Conservatism, Firm Growth, Free Cash Flows, Earnings Return Relation

1. Introduction

The most studied relation in market-based accounting research is the relation between accounting earnings (i.e., earnings available to common equity holders) and equity returns. This literature, which was initiated by Ball and Brown (1967 and 1968) has, more recently (particularly since Beaver, et al. [1989]), been based on a regression of earnings on returns with the coefficient on returns being the portion of returns that is captured in earnings. This portion is 100% if there is perfect mark-to-market accounting; it is less than 100% if accounting is conservative.

These studies implicitly rely on the notion that earnings and stock returns are capturing the same underlying construct – economic performance – which is, as a reasonable approximation, unaffected by transactions with owners of equity shares (i.e., dividends, stock re-purchases and new stock issues; for expositional convenience we will refer to these transactions as "dividends"). Thus, it is reasonable to rely on the slope coefficient from a regression of accounting earnings on equity returns as an indication of the extent to which accounting captures economic performance. But, when accounting is conservative, accounting for equity return differs from accounting for dividends. With conservative accounting, earnings captures only the *portion of return* that is related to change in expectations relating to current period profit, and the portion of return captured in book value *is equal to this portion in earnings*. Changes in expectations relating to future earnings, which are implicit in the returns, are recognized when they accrue. In contrast, *all of dividends are captured in either earnings or book value* with clean-surplus accounting ensuring that earnings is equal to change in book value plus dividends.

Since the accounting for change in the value of existing equity differs from the accounting for distributions to/contributions from equity holders, the portion of these changes in equity value that is captured in accounting earnings differs according to the source of the value change. It follows that adding dividends as a second explanatory variable in a regression of earnings on equity returns may yield new insights regarding accounting for change in value. In other words, while it is reasonable to assume that *economic performance* is unaffected by transactions with shareholders, the *accounting* for economic performance *is* affected by transactions with shareholders.

Our analyses rest, in principle, on the (above) point that the portion of change in value that is captured in earnings differs according to the source of the value change. Most of our analyses focus, however, on the earnings to the entire entity that is owned by the equity holders together with debt holders – the "enterprise" – and the relation between enterprise earnings (i.e., enterprise profit after tax, *EPAT*), enterprise returns (i.e., RET_{ent}) and distributions to/contributions from the owners of the enterprise (i.e., enterprise free cash flow, *ECF*). Following Gode and Ohlson [2013], we use the word "enterprise" to identify the entity that engages in the firm's primary revenue-generating activities, and we focus on the accounting for enterprise (or "operating") assets and liabilities, which we distinguish from financial assets and liabilities.[1]

[1] We follow the terminology of Gode and Ohlson [2013] to distinguish between enterprise activities and financing activities. Enterprise activities are sometimes referred to as operating activities in practice. *EPAT* is sometimes referred to as net operating profit after tax (NOPAT) (see, for example, Penman [2012]), and ECF is commonly referred to as free cash flow (FCF). We find it important to introduce the Gode and Ohlson [2013] terminology to the academic literature because there is ambiguity about the precise meaning of the word "operating" among both accounting practitioners and academics. In particular, operating cash flows differ from enterprise cash flows. Enterprise/operating activities include activities such as research, development, purchasing inputs, production, marketing, and distribution of products and services (e.g., coffee in the case of Starbucks, passenger miles in the case of United Airlines, and brand-name household consumer products in the case of Procter and Gamble). See Appendix A.1: Terminology for a quick reference of common terms employed in the paper.

There are two reasons for our focus on the enterprise, which is the entity owned by debt and equity holders, rather than on the equity ownership of the enterprise, as in most of the extant literature.

Conservative accounting tends to be manifested primarily at the enterprise level. As a first approximation there is little conservatism in the accounting for debt: (1) the book value of debt is generally close to the market value of debt but the book value of enterprise assets usually is much less than the market value of these assets; and, (2) the accounting for enterprise revenue and expenses is likely to be less than dollar-for-dollar, while the accounting for interest income and expenses is, as a first approximation, dollar-for-dollar.[2] In short, analyses at the enterprise level focus on the entity where the mapping from change in value to accounting numbers is not simply dollar-for-dollar.[3] In contrast, analyses of accounting at the equity level is based on earnings that are a combination of enterprise earnings, which are accounted for conservatively, and financial expenses, which are not accounted for conservatively.

[2] This latter portion is uninteresting empirically because we know that the accounting is such that the mapping from change in value to earnings is approximately dollar to dollar and there is nothing to be learned from estimating a known relation. Our point is that, if our goal is to understand "conservative" accounting, our understanding may be enhanced by looking at the entity where conservative accounting is most likely to be applied; of course, there are exceptions where accounting for debt is conservative (for example, other-than-temporary-impairment of debt securities with no corresponding accounting for an expected permanent increase in value). Much of the recent work on accounting for debt has focussed on firms in the financial services industry where there are important manifestations of conservatism. Much of market-based accounting literature removes these firms from the sample; our emphasis is on the vast majority of firms that remain.

[3] Modigliani and Miller [1958] show that (as a reasonable first approximation) capital structure does not affect the value of the firm/enterprise. It follows that change in capital structure will not change the value of the enterprise and there is no apparent reason why change in capital structure will change the accounting for change in *enterprise value*. However, change in capital structure *will* change the accounting for change in *equity value* (and therefore earnings), which is equal to the change in the value of the enterprise minus the change in the value of debt (the former is accounted for conservatively while the latter is not).

Second, when the enterprise is the entity of interest, cash contributions/distributions come from/go to the owners of the enterprise (viz., debt and equity holders) in to/out of the enterprise. On the other hand, dividends may be paid from cash reserves or extra debt; in other words dividends may represent transactions between the owners of the enterprise and there is no conservatism in the accounting for these transactions.

Just as the well-known clean-surplus relation – earnings are equal to change in the book value of equity plus dividends to equity holders holds at the equity level – so, enterprise profit after tax is equal to change in the book value of enterprise assets plus enterprise cash flow ($EPAT = \Delta NEA + ECF$). Positive *ECF* (i.e., net cash flow *to* the owners of the enterprise) is used to pay down debt, to pay dividends to equity holders and/or to build up cash reserves. Negative *ECF* comes from additional debt, from additional equity, and/or from cash assets.[4] We note that the net debt associated with the enterprise may be negative (as in the case of Apple, which at the end of fiscal-year 2012 had net financial assets of $121.25 billion, in the form of cash and short- and long-term marketable securities); in other words, the enterprise is, essentially, owned by equity investors, who also own the net financial assets.[5]

Just as the cum-dividend return to an equity investor in an enterprise is the sum of the change in the value of equity plus dividends, the cum-*ECF* return to all owners of an enterprise (i.e., the debt holders and the equity holders) is the sum of the change in the market value of the enterprise plus the free cash flows from the enterprise to its owners. It follows that, absent conservative

[4] While the term *ECF* contains the word "cash," *ECF* inflows and outflows include all forms of value flowing between the enterprise and the owners of the enterprise. For example, *ECF* includes contributions from the owners of an acquired company where the acquisition currency is shares in the newly-formed enterprise (e.g., the 2006 acquisition of Gillette by Procter and Gamble)).

[5] We have heard arguments that this excess cash may be considered by some as part of the enterprise of Apple. We do not take this perspective because, again, we wish to focus on the entity where the change in value is not reported in the accounting at dollar-for-dollar.

accounting, just as the coefficients in a regression of the equity earnings on the equity returns would be one, the coefficients in a regression of firm-level earnings (*EPAT*) on enterprise returns (RET_{ent}) would be one. Also, the difference between the accounting for RET_{ent} and *ECF* is similar to the difference between the accounting for equity returns and dividends. With conservative accounting, *EPAT* captures only the *portion of* RET_{ent} that is related to change in expectations relating to current period profit from the enterprise activities and, absent *ECF*, *EPAT = change in enterprise book value* (*EPAT* = ΔNEA). In contrast, *all of ECF* is captured in *either EPAT or* ΔNEA with clean-surplus accounting ensuring that *EPAT* = ΔNEA + *ECF*. For example, an *ECF* inflow, say cash raised from a debt issuance and invested in enterprise assets, can either be expensed (into *EPAT*), or capitalized (into *NEA*). Since the accounting for RET_{ent} differs from the accounting for *ECF*, the portion of these changes in enterprise value that is captured in enterprise earnings differs according to the source of the enterprise growth (i.e., value change).

We demonstrate that these differences in accounting have a number of implications for the earnings/returns relation, which is the most fundamental and most studied relation in market-based accounting research. Accounting for the change in value captured in cum-dividend return has received much attention in the recent literature, which focuses on the difference in the portion of positive *equity* returns that is captured in current earnings vis-à-vis the portion of negative *equity* returns that is captured in current earnings (e.g. Basu [1997]). We show similar results when we examine the portion of positive vs. negative *enterprise* returns that is captured in earnings of the enterprise.[6] We predict and show, however, that these portions (of both positive

[6] We demonstrate that the coefficient relating *EPAT* to RET_{ent} is larger when RET_{ent} is negative than when RET_{ent} is positive. The magnitudes and statistical significance of the coefficients we report are very similar to those in the extant literature examining equity returns.

and negative returns) differ considerably between samples where the owners are injecting further cash into the enterprise (implicitly they are confident in their expectations regarding future growth) and samples where cash is being removed (implicitly the owners are removing cash and investing it elsewhere).

Our primary contribution to the literature is our analysis of the role of *ECF* in understanding the earnings/returns relation. Absent conservative accounting, earnings and returns capture the same underlying economic performance, and transactions with owners should have no incremental explanatory power for earnings. However, under conservative accounting, *EPAT* also captures changes in market value due to contributions from/distributions to enterprise owners. In fact, while the effect on *EPAT* of firm growth/contraction due to investment/disinvestment of cash by the owners of the enterprise (*ECF*) has received little attention in the extant literature, we show that it explains at least as much of enterprise earnings as is explained by enterprise returns, and in some cases more.[7] In essence, we show that, due to accounting conservatism, accounting measures of enterprise value change are often more strongly associated with transactions between the enterprise and its owners during the period than with value generated by the enterprise during the period.

In short, we argue and show that: (1) the accounting for growth differs according to the source of the growth (RET_{ent} or *ECF*); (2) *ECFs* to/from the owners of the enterprise explain at

[7] Our analysis of *ECF* departs from the extant literature that considers the mapping from changes in value to cash flows rather than the mapping from cash flows to earnings (e.g., Collins et al. [2014], who examine the mapping from equity returns to operating cash flows, and Penman and Yehuda [2004], who examine the mapping from enterprise cash flows to change in enterprise value). As far as we are aware, the mapping from *ECF* to *EPAT*, which explains much of the cross-sectional variation in *EPAT*, has not yet been considered in the literature on accounting for value change.

least as much of the cross-sectional variation in *EPAT* as is explained by RET_{ent};[8] and, (3) the portion of RET_{ent} and the portion of *ECF* that is captured in concurrent *EPAT* (these portions are captured by the coefficients relating *EPAT* to RET_{ent} and *ECF*) differs according to the sign of RET_{ent} (i.e., whether the assets in place are increasing or decreasing in value) and according to the sign of *ECF* (i.e., whether the owners of the enterprise are providing more cash or removing cash from the enterprise).[9]

Finally, in order to illustrate the importance of: (1) focusing on enterprise earnings (*EPAT*) and enterprise returns (RET_{ent}); and, (2) adding *ECF* to the earnings/return regression, we also partition our sample on the debt/equity ratio and show how the type of enterprise assets differs across these partitions and, in turn, the accounting (i.e., the portion of RET_{ent} and *FCF* that is captured in *EPAT*) differs. An implication of our results is that conclusions in the extant literature regarding the influence of debt/equity ownership on the earnings returns relation may reflect no more than differences in the accounting for different assets (e.g., full expensing of investment in R&D, which tends to be the primary form of investment when the firm is mostly owned by equity holders vs. capitalizing investment in property, plant and equipment, which tends to be the primary form of investment when the firm is owned by debt holders).

The remainder of the paper proceeds as follows. We begin, in section 2, by presenting our motivation and the empirical model. In doing so, we demonstrate our reasons for our focus on

[8] In other words, we show that the association between the accounting measure of enterprise performance (*EPAT*) and transactions between the enterprise and its owners (*ECF*) is as strong as the association between *EPAT* and value generated during the fiscal period.

[9] Unreported analyses show that the coefficient relating equity earnings to equity returns also differs considerably from the coefficient relating earnings to net transactions with owners (i.e., "dividends") and dividends has significant incremental explanatory power for earnings over returns. We do not report these results because (as we have argued) these results reflect a mixture of accounting for the enterprise, which tends to be conservative, and accounting for debt, which tends not to be conservative. Our results at the enterprise level are easier to interpret.

accounting at the enterprise level and for the addition of *ECF*. We present our predictions in Section 3. We describe our sample selection procedure in section 4, and discuss selected descriptive statistics. Section 5 analyzes and compares partitions of the data based on whether enterprise value is increasing or decreasing and on the source of this value increase/decrease. In Section 6, we examine whether the empirical manifestation of change in enterprise value in the financial statements differs as expected with change in leverage and enterprise asset types. Section 7 presents a summary and conclusions.

2. Motivation and Model Development

The market value of a firm's equity may change in two ways: (1) capital may be contributed by or distributed to stockholders (i.e., new equity issues or distributions such as dividends and stock repurchases); and, (2) value may be generated or destroyed with the assets of the firm (i.e. cum- or "before" dividend returns). The accounting for these two forms of value change is quite different. We will discuss each form separately, beginning with (2), which is the focus of prior literature.

The question at the heart of the empirical literature, which considers accounting measurement of value and change in value is: what portion of cum-dividend dollar returns is captured in concurrent earnings? This literature, particularly since Beaver, et al. [1989] and more recently, Basu [1997], is generally based on a regression of earnings on returns; the estimates of the earnings/returns coefficients reflect the portion of the returns that are captured in earnings of the return period.[10] The relation between earnings and returns, may be written:[11]

[10] Basu [1997] includes a dummy intercept and slope variable to identify bad news (negative returns) vs. good news (positive returns); conservative accounting is manifested in a greater earnings/return coefficient when returns are negative. We will not include these dummy variables in order to simplify the exposition.

[11] Basu [1997] and papers that follow alternately use both comprehensive net income deflated by market capitalization and earnings before extraordinary items per share deflated by beginning of year price per share. All of

$$\frac{NI_{it}}{MVE_{it-1}} = \alpha_{0t} + \alpha_{1t}\frac{\Delta MVE_{it}+FCFE_{it}}{MVE_{it-1}} + \varepsilon_{1it} \quad (1)$$

where NI_{it} is comprehensive net income available to common shareholders of company *i* for year *t*, MVE_{it} is the market value of equity in company *i* at the end of year *t*, and $FCFE_{it}$ is free cash flow to/from equity holders of company *i* in year *t*. $FCFE_{it}$ is the net of all transactions with equity holders (cash dividends plus payments for stock repurchases minus proceeds from new stock issues).

These studies implicitly rely on the notion that earnings and stock returns are capturing the same underlying construct – economic performance – which is, as a reasonable approximation, unaffected by transactions with owners of equity shares (i.e., dividends, stock re-purchases and new stock issues). Thus, dividends and stock repurchases are added back to Δ*MVE*, and the nominal amount of new equity issuances are subtracted (i.e., the added *FCFE* is negative for new issuances) to arrive at the market's assessment of the economic performance of equity holders' claim on the firm's assets.

Focusing on this cum-dividend equity return (represented in equation (1) as Δ*MVE* + *FCFE*), the extant literature recognizes that there may be accounting-related explanations for more or less of this return being captured in earnings of the current period. If there is no conservatism in the accounting for return on equity, earnings will capture all of the return, but conservative accounting implies that only a portion of the return is captured in current earnings; the *smaller* the portion of this return that is captured in current earnings, the more conservative the accounting.

these studies, as far as we are aware, use compounded monthly cum-dividend stock returns as the independent variable.

The key premise of our study is that, under conservative accounting, capital contributed by or distributed to stockholders during the period may also be associated with earnings of the period, *regardless of the underlying economic performance* of the invested assets. To see this, note that when equity holders contribute cash (in the form of payments for newly issued stock), the market value of equity changes by the nominal amount of the cash contributed, plus or minus the present value of the investments made with the contributed cash. If there is no accounting conservatism, the book value of equity will increase by this same amount, while earnings changes only by the net present value (NPV) of the investments made. But, if accounting is conservative (R&D expenditure, for example, is immediately expensed), some (or all) of the cash contribution is recorded as an effect on earnings, and only the remainder is recorded as a change in book value of equity. The clean surplus relation ensures that the entire amount of the cash contribution by the equity holders will be recorded in either earnings (as an expense) or in book value (as an asset); the more conservative the accounting, the *greater* the portion of the cash contribution that is captured in current earnings.

Similarly, when there is a payment to the equity holders (in the form of dividends or new stock issues) and there is no conservatism, the book value of the firm decreases by the cash payment and there is no effect on earnings. But, if accounting is conservative, the decrease in book value associated with the cash payment will be understated, and, as a result, earnings will be overstated, relative to the no conservatism case. For example, if the depreciated value of assets sold to generate the cash payment is less than the sale value, book value will decrease by the book value of the sold asset, but the remainder of the cash flow will be recorded in earnings as a gain on sale. Again, the clean surplus relation ensures that the entire amount of the cash distribution to the equity holders will be recorded in either earnings (as income) or in book value

(as a decline in asset value); and, again, the more conservative the accounting, the *greater* the portion of cash distribution that is captured in current earnings.

Furthermore, under conservative accounting, the association between earnings and transactions with owners will occur in the same period as the transaction, even if the transaction is: a) zero-NPV; or, b) the economic performance that generates the expense or gain on sale was recognized in market value in a different period. Continuing with the asset sale example, increases in the market value of the asset in prior periods would have been captured in the equity returns of those prior periods, but the gain on sale will be captured in earnings during the period in which the asset is liquidated (i.e., the cash payment is made to the owners of the firm).

The key point of this discussion is that the accounting for *FCFE* can also lead to an association between *FCFE* and earnings of the period, *independent of current period returns*; this suggests that we may gain additional insights if we add *FCFE* to the regression:

$$\frac{NI_{it}}{MVE_{it-1}} = \alpha_{0t} + \alpha_1 \frac{\Delta MVE_{it} + FCFE_{it}}{MVE_{it-1}} + \alpha_2 \frac{FCFE_{it}}{MVE_{it-1}} + \varepsilon_{2it} \qquad (2)$$

However, the discussion of the accounting for *FCFE* above is not specific to contributions by/distributions to equity holders. Clearly, investment of cash into R&D, or the sale of PP&E for cash, generate the same income statement effects regardless of whether cash came from/went to equity holders, debt holders, or net cash reserves. The manifestation of conservative accounting for these transactions occurs at the *enterprise* level, when capital flows into and out of the enterprise.

Hence, in order to focus on the entity where conservative accounting is manifested, we rely on the following regression:

$$\frac{EPAT_{it}}{EV_{it-1}} = \beta_{0t} + \beta_{1t} \frac{\Delta EV_{it} + ECF_{it}}{EV_{it-1}} + \beta_{2t} \frac{ECF_{it}}{EV_{it-1}} + \varepsilon_{3it} \qquad (3)$$

where $EPAT_{it}$ is the enterprise profit after tax of firm *i* for year *t*, EV_{it} is the market value of the enterprise (operations) of firm *i* at time *t*, and ECF_{it} is enterprise cash flows to the owners of the enterprise (equity and net debt holders). We refer to the variable $\frac{\Delta EV_{it}+ECF_{it}}{EV_{it-1}}$, the cum-*ECF* return on enterprise value, as enterprise return, RET_{ent}. Henceforth, for ease of exposition, we also drop subscripts and denominators when referring to the measures of *EPAT* and *ECF* used in our analyses. We refer interested readers to Appendix B, as well as Easton [2015], for additional discussion (and analyses) regarding our motivation for focusing our analyses at the enterprise level.

3. Empirical Predictions

Most of our empirical analyses are based on regression (3). In the absence of conservatism, $EPAT = \Delta EV + ECF$ and it follows that the estimates of the coefficient relating *EPAT* to RET_{ent} would be one and the coefficient relating *EPAT* to *ECF* would be zero. We show, however, that, in the presence of conservatism, the estimates of the coefficients differ from this baseline of one and zero in predictable ways, according to the signs of RET_{ent} and *ECF*. The two coefficients capture distinct aspects of accounting conservatism, with more conservative accounting generating smaller coefficients (i.e., less than one) on RET_{ent} and larger coefficients (i.e., greater than zero) on *ECF*.

3.1. The relation between *EPAT* and RET_{ent}

First, consider a scenario in which there is a change in the value of assets in place (i.e., ΔEV) and there is no *ECF* (i.e., $ECF = 0$). If there is no conservatism in the accounting, $EPAT = RET_{ent}$; if accounting is conservative, *EPAT* will be less than RET_{ent} and it follows that

conservatism will be captured by the extent to which the coefficient relating *EPAT* to RET_{ent} differs from one.

Positive enterprise returns (i.e., positive RET_{ent}) due to such things as discovery of new technology, acquisition of new contracts, which may be serviced with the existing enterprise assets, effective cost-cutting, re-investment of internally generated cash in positive NPV projects, etc., may affect both current *EPAT* and future *EPAT*. RET_{ent} will reflect the present value of the effect on current and future *EPAT*. The relation between current *EPAT* and positive RET_{ent} will capture *the portion of* the increase in value that is captured in current *EPAT*.

Negative enterprise returns (i.e., negative RET_{ent}) due to such things as loss of comparative technological advantage, loss of market share, cost increases, etc., may affect both current *EPAT* and future *EPAT*. Since these effects are more likely to be transitory rather than permanent on average (otherwise the firm will go out of business), the mapping from negative RET_{ent} to *EPAT* is likely to be greater than the mapping from positive RET_{ent} to *EPAT*. Further, generally accepted accounting principles place greater verification thresholds on increases in value recorded in *EPAT* than on decreases in value recorded in *EPAT*, which can also contribute to a greater portion of RET_{ent} being recognized in current-period *EPAT* when RET_{ent} is negative.[12]

3.2. The relation between *EPAT* and *ECF*

If there is no conservatism in the accounting, $EPAT = RET_{ent}$, and the coefficient relating *EPAT* to *ECF* would be zero. When *ECF* is negative, indicating that the debt and equity holders

[12] In other words, negative RET_{ent} may be recognized for accounting purposes before the decreases in expected future enterprise value are realized (e.g., asset write-downs), while increases in expected enterprise value are not recognized for accounting purposes until the expected outcomes are realized.

are contributing cash to the enterprise and there is no conservatism in the accounting for the associated investment, $\Delta NEA = -ECF$ plus the NPV of the investment. The NPV of the *ECF* investment will be part of RET_{ent} and like other sources of RET_{ent} only the portion of the NPV that is related to current change in profit will be recorded in *EPAT*. But, if mandatory accounting rules require conservative expensing of *ECF* investments, (R&D expenditure, for example, is immediately expensed), some (or all, if the expenditure is on R&D) of the nominal amount of *ECF* will be captured in *EPAT* (regardless of the NPV of the investment); the more conservative the accounting, the *greater* the portion of the *ECF* that is captured in *EPAT*.

Similarly, if *ECF* is positive and there is no conservatism, $\Delta NEA = -ECF$ and there is no *EPAT*. But, if accounting is conservative (e.g., the depreciated value of assets sold to generate the cash is less than the sale value), *NEA* will decrease by the book value of the sold asset and remainder of the *ECF* will be recorded as a gain on sale in *EPAT*. Again, the more conservative the accounting, the *greater* the portion of change in equity value that is captured in current *EPAT*. The accumulated effects of accounting from the past will lead to lower recorded enterprise asset value: in turn, the portion of positive *ECF* that is associated with *EPAT* will increase (i.e., the "gain on sale" increases, *ceteris paribus,* with accounting conservatism)

It follows that conservatism will be captured by the extent to which the coefficient relating *EPAT* to *ECF* differs from (is greater than) zero, for both negative and positive *ECF*. In the case of negative *ECF*, the coefficient relating *EPAT* to *ECF* captures conservative expensing of current-period *ECF* investments into *EPAT*. In the case of positive *ECF*, the coefficient relating *EPAT* to *ECF* captures the cumulative effects of accelerated expensing (and/or lack of capitalization) in prior periods. We predict that, due to the cumulative effect of conservative accounting for *ECF*, the coefficient on *ECF* in regression (3) will be larger when *ECF* is positive

than when *ECF* is negative. As is evident from our discussion of the effects of conservative accounting for *ECF*, the coefficient on *ECF* in regression (3) is also expected to vary depending on whether *ECF* is invested in projects such as R&D, which are accounted for more conservatively, or projects focused on tangible assets such as PP&E, which are accounted for less conservatively. We discuss the effects of these firm characteristics on the relation between *EPAT* and *ECF* in Sections 5 & 6.

3.3. The importance of both the sign and the source of change in enterprise value

We have discussed how the accounting for change in enterprise value due to return on the assets in place (RET_{ent}) differs with the sign of RET_{ent} and how the accounting for change in enterprise value due to the contribution/distribution of cash to/from the enterprise (*ECF*) varies with the sign of *ECF*. We now discuss the interaction between these effects.

The coefficient on RET_{ent} will be higher when a greater portion of changes in expectations about enterprise value relate to the current period. We predict that, when RET_{ent} is positive, the coefficient on RET_{ent} will be positively associated with the sign of *ECF* (i.e., higher when *ECF* is positive) because the owners are more likely to be injecting cash to support more growth in the future, and removing cash if the growth is not expected to be as long-lived. In contrast, when RET_{ent} is negative, we predict that the coefficient on RET_{ent} will be negatively associated with the sign of *ECF* (i.e., higher when *ECF* is negative) because the owners are more likely to be injecting cash when the negative economic performance captured in RET_{ent} relates more to current earnings than to future earnings. In other words, when economic performance is poor, *ECF* injections go towards stemming the tide of current losses, rather than investing for the future.

Similarly, the coefficient on *ECF* is expected to vary with the sign of RET_{ent}. The economic performance of the firm will affect the investment opportunities of the enterprise, and the degree to which *ECF* is sourced from (or goes to) *EPAT* or *NEA*. As discussed above, if owners are injecting *ECF* to stem the tide of current losses, *ECF* is more likely to go towards covering expenses in current earnings, rather than being capitalized into *NEA*. Similarly, if cash is extracted from enterprises where assets are declining in value, there is likely little earnings that can be extracted as cash – rather the cash will come from the liquidation of *NEA* at or below book value, so that the coefficient relating *EPAT* to *ECF* will be small.

We observe two scenarios where the overall enterprise growth has the opposite sign to the sign of RET_{ent} due to *ECF*: (1) *ECF* is so negative that enterprise value decreases even though RET_{ent} is positive; and, (2) *ECF* is so positive that enterprise value increases even though RET_{ent} is negative. Although these cases are relatively rare, we examine them separately to understand whether the odd growth patterns for these enterprises are reflected in the accounting for *EPAT*.

Accordingly, we examine partitions formed on the sign of each independent variable in equation (3) (i.e., RET_{ent} and *ECF*) as well as the sign of the overall change in enterprise value (ΔEV), resulting in a total of six sub-samples:[13]

(1) *Enterprise Growth, Positive Returns, Net Cash Inflow* ($+\Delta EV$, $+ RET_{ent}$, *ECF in)*: there is growth on every dimension (i.e., all is going well and there is a further injection of cash);

[13] There are two empty sets with: (1) positive ΔEV and negative RET_{ent} and *ECF* outflow; and, (2) negative ΔEV and positive RET_{ent} and *ECF* inflow.

(2) *Enterprise Growth, Positive Returns, Net Cash Outflow* (*+ΔEV*, *+ RET_{ent}*, *ECF out*): the enterprise is growing but there is net cash outflow (i.e., all is going well and there is a removal of cash);

(3) *Enterprise Growth, Negative Returns, Net Cash Inflow* (*+ΔEV*, *- RET_{ent}*, *ECF in*): the enterprise is growing because of net cash inflow despite negative return on existing assets (i.e., the enterprise growth is due to the injection of cash by its owners);

(4) *Enterprise Contraction, Positive Returns, Net Cash Outflow* (*-ΔEV*, *+ RET_{ent}*, *ECF out*): the enterprise is contracting because net cash outflow is greater than the return on existing assets (i.e., generated growth is not large enough to replace the value that the owners are taking out of the enterprise);

(5) *Enterprise Contraction, Negative Returns, Net Cash Inflow* (*-ΔEV*, *- RET_{ent}*, *ECF in*): the enterprise is contracting despite net cash inflow (i.e., the enterprise is fairing badly and there is an injection of cash) and,

(6) *Enterprise Contraction, Negative Returns, Net Cash Outflow* (*-ΔEV*, *- RET_{ent}*, *ECF out*): there is contraction on every dimension (i.e., the enterprise is fairing badly and there is removal of cash).

We discuss descriptive statistics and estimate regression (3) for each sub-sample. We draw comparisons across sub-samples to determine whether the estimated coefficients in regression (3) vary with both the sign and source of change in enterprise value, consistent with our predictions about the effects of accounting conservatism.

4. Sample Selection and Selected Descriptive Statistics

We obtain annual financial statement data from the Compustat (Xpressfeed) database for fiscal years 1963 – 2012. We match this with stock return data from the CRSP database. The sample period begins in 1963 in order to ensure data availability in Compustat. We exclude foreign incorporated firms (we require that Compustat FIC=USA), financial institutions (SIC codes 6000 – 6900), utilities (SIC codes 4900 – 4999), observations with negative market value or total assets (potential data errors), and observations with beginning-of-fiscal-year stock prices less than one dollar. Following the method in several textbooks on financial statement analysis and valuation, net distributions, *ECF,* are calculated from income statement and balance sheet data as enterprise profit after tax, *EPAT,* minus the change in net enterprise assets, *ΔNEA*.[14] We require that all observations included in the sample have sufficient data available for the calculation of all variables in Table 1. To mitigate the influence of extreme observations on our results, we truncate observations that fall in the top or bottom 1 percent of any of the variables included in the primary regression equation (equation 3) as well as price-deflated earnings and annual returns.[15]

Table 1 provides descriptive statistics for our sample of 128,269 observations. Initial evidence that accounting records a dollar of growth at less than a dollar is seen in the fact that the

[14] See, for example, Easton et al. [2015], Gode and Ohlson [2013], Penman [2012], and Wahlen et al. [2015]. Our calculation of this variable amounts to the same calculation as seen in other texts such as Damodaran [2012] and White et al. [2003], where earnings after taxes are adjusted for accruals and for capital expenditure. To see the equivalence, note that changes in accruals are in both *EPAT* and change in book value of net enterprise assets (*ΔNEA*) and capital expenditure is part of *ΔNEA*; the calculation, *ECF = EPAT - ΔNEA* removes the accruals from *EPAT* and the remainder is "free cash flow." In our empirical analyses, *EPAT* and *ΔNEA* are calculated following the appendix to Nissim and Penman [2001], who refer to these variables as operating income and net operating assets. We use the terms enterprise profit after tax and net enterprise assets to underscore the focus on the entity (the enterprise), which is owned by the equity and debt holders.

[15] We examine whether our comparison with extant literature depends on the use of earnings before extraordinary items vs. comprehensive net income. Accordingly, we also truncate observations in the top and bottom 1 percent of the distribution of these variables.

mean (median) change in enterprise value as a percentage of opening enterprise value (ΔEV) is greater (0.160 (0.051) than the mean (median) change in the book value of the enterprise as a percentage of opening enterprise value (ΔNEA) (0.064 (0.036)). The mean *EPAT* is less than the mean ΔNEA (0.034 compared with 0.064) and the mean (median) *ECF* is -0.029 (0.002). The mean (median) R&D plus advertising (*RDADV*) is 0.052 (0.018) of enterprise value; 66.06 percent of observations have non-zero (positive) R&D and advertising.[16] Mean (median) capital expenditures are 0.084 (0.051) of enterprise value. The mean (median) ratio of the market value of net financial liabilities to opening enterprise value is 0.099 (0.102) and 35.82 percent of sample observations exhibit negative values of net financial liabilities, indicating that these observations have net financial assets.[17]

Table 2 reports correlations among key variables. We discuss some highlights from the Spearman correlations. The correlation between our dependent variable, *EPAT*, and the dependent variable in Basu (*X/P*, i.e., price scaled earnings) is 0.929 and the correlation between RET_{ent} and the independent variable in Basu (*RET*) is 0.960. Thus, it is not at all surprising that the estimates of our coefficients relating *EPAT* to RET_{ent} are generally very similar to the estimates of the coefficients relating earnings to equity returns. As expected the correlations between *EPAT* and RET_{ent} and *EPAT* and *ECF* are both positive (0.418 and 0.284) and highly significant. The correlation between RET_{ent} and *ECF* is significantly positive (0.157); that is, in general, higher enterprise returns are associated with more cash outflow. We will refer back to

[16] This result is not tabulated.
[17] As discussed with respect to *MVD* above, this is equivalent to the equity holders owning the enterprise and a "pile of cash" (as in Microsoft, for example). It follows that calculating *EV* as *MVE* + *NFL* (where negative *NFL* implies net financial assets) remains valid.

this table when correlations among other variables become pertinent to subsequent analyses and discussions.

5. The Importance of Both the Source and Sign of Change in Enterprise Value

A basic premise of our paper is that the accounting for change in the market value of the enterprise (i.e., growth) depends upon both the sign of the growth (i.e., growth vs. contraction) and the source of the growth. To shed light on this premise we partition the sample into the six sub-samples described in section 3.3. Descriptive statistics and regression results for each of the six sub-samples are summarized in Table 3. Panel A presents descriptive statistics for the sub-samples. Panel B presents simple Spearman correlations. Panel C presents regression results from estimating regression (3). For comparison, Panel D reports the results from a regression of earnings on returns along with the number of negative return observations in each sub-sample.

5.1.1. Enterprise value increasing and value generation

We begin with a comparison of the two sub-samples of observations where the enterprise value is increasing and enterprise returns are positive (i.e., sub-samples (1) and (2)). The results for these sub-samples are summarized in the first two columns of Table 3. In sub-sample (1), with 31,349 observations, the owners have contributed to the enterprise value change via *ECF* inflow while in subsample (2), which has 33,060 observations, value has been distributed to the owners of the enterprise via *ECF* outflow.

Sub-sample (1) is comprised of enterprises that are increasing in value due to both positive enterprise returns and cash inflow from the owners of the enterprise. Consistent with this, the median ΔEV (0.455) reported in Panel A is the highest among the six sub-samples. Sub-sample (2) enterprises have a similar median RET_{ent} (0.291 cf. 0.315), but are distributing some of the

enterprise value back to owners, resulting in a lower median ΔEV of 0.226, which is still the second-highest enterprise value change among the six subsamples. Panel A also shows that, while both sub-samples with increasing enterprise value report positive median current-period enterprise profit, they are still investing in both intangibles (the median *RDADV* for sub-sample (1) is similar to the median for sub-sample (2), 0.019 cf. 0.020) and fixed assets (the median *PPE* for sub-sample (1) is similar to the median for sub-sample (2), 0.318 cf. 0.307). Most of the cash inflow in sub-sample (1) comes from debt holders (median *ECF* of -0.098 and ΔNFL of 0.086) and much of the cash outflow in sub-sample (2) goes to debt holders (median *ECF* of 0.059 and ΔNFL of -0.036).[18] The enterprises that are distributing cash to the owners are more than twice the size of those receiving cash from the owners (median *EV* of $0.207 billion cf. $0.095 billion).

Turning to the simple correlations presented in Panel B, it is notable that the correlation between *EPAT* and RET_{ent} is not significantly different from zero (-0.004) for sub-sample (1), but positive and significant (0.256) for sub-sample (2). The correlation between *EPAT* and *ECF* for sub-sample (1) is the lowest (0.058) among the six sub-samples, while the correlation between *EPAT* and *ECF* for sub-sample (2) is the highest among the six sub-samples (0.315).

A summary of the results from the estimation of regression (3) is presented in Panel C. We continue the comparison of the two sub-samples of observations where enterprise value is increasing and enterprise returns are positive. The coefficient on RET_{ent} for sub-sample (1) is the smallest (i.e., least positive) of the six sub-samples consistent with the notion that, in this sample where growth is most evident, accounting captures net expenses (the estimate of the coefficient relating *EPAT* to RET_{ent} is significantly negative, -0.038 with a t-statistic of -4.03), which are

[18] This underscores our reason for studying flows from/to all owners of the enterprise rather than just flows from/to equity holders.

associated with the generation of profits in future periods rather than in the current period. Further, we note that, while the estimate of the coefficient on RET_{ent} is significantly negative for sub-sample (1) where there is cash inflow, it is significantly positive for sub-sample (2) (0.016) when there is cash outflow.

The estimate of the coefficient on *ECF* (i.e., 0.123) in sub-sample (1) implies that accounting records, in *EPAT*, 0.123 per dollar of *ECF* inflow. The estimate of the coefficient on *ECF* in sub-sample (2), where *ECF* is positive, (i.e., there is net cash outflow) is much higher than in subsample (1) (0.318 vs. 0.123); the higher coefficient in subsample (2) shows that accounting records in *EPAT* more of cash *out*flows of enterprises that are increasing in value than of cash *in*flows for enterprises that are increasing in value. The interpretation of these coefficients is that the difference between accounting *EPAT* and economic *EPAT* is 0.123 per dollar of *ECF* when there is *ECF* inflow and 0.318 when there is *ECF* outflow; in other words, the over-statement of the *EPAT* (i.e., net expense) effect of the *ECF* inflow is less than the overstatement of the *EPAT* (i.e., net profit) effect when there is *ECF* outflow.

The characteristics of these sub-samples (see Panel A) provide indications of reasons for this difference. A possible explanation is the fact that, although the enterprise value is increasing in both sub-samples, the observations in sub-sample (1) have a median increase in *NEA* of 15.6 percent of enterprise value while those in sub-sample (2) have virtually no change in *NEA* (0.015); that is, much of the cash inflow is going to build enterprise assets but, not surprisingly (in light of the fact that the enterprises in sub-sample (2) are also growing), cash outflow is not coming from sale of enterprise assets – rather it is coming from *EPAT* of the period. This is consistent with the accumulation of the effects of conservatism over time. That is, *EPAT* is

overstated (and *NEA* understated) due to prior accelerated depreciation of, or disallowed capitalization of, enterprise assets.

For comparison, Panel D of Table 3 also reports the Basu-style estimates of earnings/return coefficients for each of the six sub-samples. The coefficient of 0.000 on *RET* in sub-sample (1) is not significantly different from zero. Similar to the coefficient on RET_{ent}, the coefficient on *RET* for sub-sample (1) is the smallest earnings/return coefficient among the six sub-samples, and also the only one that is not significantly positive. On the other hand, for sub-sample (2), where there is cash outflow, the estimate of the coefficient on *RET* is significantly positive (0.038 with a t-statistic of 3.04). The differences across sub-samples (1) and (2), which differ according to the sign of *ECF* is another demonstration of the importance of considering growth due to contribution from/distributions to the owners of the firm even if the analysis is, for whatever reason, focused on the relation between earnings and equity returns.

5.1.2. Enterprise contraction and value loss

Next we compare the two sub-samples (5 and 6) of observations where the enterprise value is decreasing and enterprise returns are negative. In sub-sample (5), with 24,278 observations, the owners have contributed to enterprise value change via *ECF* inflow; while in subsample (6), with 23,300 observations, *ECF* outflow has been distributed to the owners of the enterprise. The results for sub-samples (5) and (6) are summarized in the last two columns of Table 3.

The enterprises in sub-sample (5) are contracting due to loss in value of the enterprise assets, but they continue to receive support from the owners of the enterprise via *ECF* inflows. These are relatively small enterprises (median *EV* of \$0.094 billion compared with \$0.145 for sub-sample (6)). These enterprises are, on average, the most unprofitable enterprises across all six sub-samples (median *EPAT* of 0.003); they have higher intangible intensity and much lower

property plant and equipment than enterprises in sub-sample (6) (median *RDADV* of 0.023 cf. 0.014 and mean *PPE* of 0.158 cf. 0.230). These are growth-oriented (vs. value-oriented) enterprises with the lowest mean *BTM* (0.385) of any of the six sub-samples. Consistent with the contraction experienced by these enterprises, they exhibit the highest correlation between *EPAT* and RET_{ent} of the six sub-samples (0.416).

Moving to Panel C, the estimate of the coefficient on RET_{ent} in regression (3) of 0.174 for sub-sample (5) indicates that there is a 17.4 cent loss in the current period per dollar of enterprise return, while the estimate of this coefficient for sub-sample (6) is smaller (0.127); in other words, more of the value lost relates to current earnings for the sub-sample of enterprises for which owners are contributing cash (presumably this cash contribution leads to expenses of the period (for example R&D, advertising and capital expenditure used to stem future losses)) relative to those where the owners are removing cash. The striking feature in the comparison across the results from sub-samples (5) and (6) is the difference in the coefficients on *ECF* across these two samples of contracting enterprises. Net cash inflow appears to go to support *EPAT* of the current period (coefficient of 0.464), whereas little of net cash outflow comes from current *EPAT* (the estimate of the coefficient on *ECF* is not significantly different from zero).

For comparison, Panel D of Table 3 also reports the earnings/return coefficient for each sub-sample. The coefficients of 0.233 and 0.279 for sub-samples (5) and (6), respectively, are very similar to each other. Consistent with the extant literature, these coefficients are significantly positive and much higher than the coefficients for sub-samples (1) and (2). Notably, the similar earnings/returns coefficients for these two sub-samples mask the differences in *ECF* conservatism that becomes apparent when the sources of enterprise value loss are considered.

5.1.3. Enterprise growth, value loss, net cash inflow

The results for sub-sample (3) are summarized in column (3) of Table 3. While enterprise growth (contraction) is driven by enterprise returns for most enterprises, the enterprises in sub-sample (3) are experiencing value increase due to large injections of cash by the owners of the enterprise despite experiencing negative enterprise returns during the fiscal year. This is an unusual situation, evidenced by the fact that sub-sample (3) is the smallest of the six sub-samples and only contains 5.81 percent of the observations in the full sample (see Table 1, Panel B). The mean levels of *EV* in Panel A indicate that sub-sample (3) contains, on average, the smallest enterprises in the sample, consistent with these enterprises' small market capitalization serving as a contributing factor in their ability to grow the value of the enterprise by attracting additional capital despite experiencing value loss.

These enterprises are relatively unprofitable (median *EPAT* of 0.037), they invest little in intangibles (lowest median *RDADV* of 0.013), and heavily in fixed assets (median *PPE* of 0.366). Because of their high asset tangibility, these enterprises are able to raise a high percentage of their market value from *ECF* inflows (most negative median *ECF* across all sub-samples, -0.212), resulting in large increases in leverage (median ΔNFL of 0.191).

The results from estimation of regression (3) are summarized in Panel C. The estimate of the coefficient on RET_{ent} (0.330) indicates that there is a 33.0 cent *EPAT* loss in the current period per dollar of enterprise return. It is also interesting to note that the annual equity return (*RET*) is negative (i.e., in Basu parlance, there is bad news) for most of the observations in sub-sample (3) (7,043 of 7,449). Consistent with prior literature (e.g., Basu 1997), the estimates of the coefficients on RET_{ent} and the earnings/return coefficient are much higher (0.330 and 0.257,

respectively, with t-statistics of 8.91and 7.44) for this sub-sample than for sub-samples (1) and (2) where RET_{ent} was positive.

The estimate of the coefficient on *ECF* (0.062) implies that there is little conservatism in the accounting for *ECF* for these observations. This is consistent with the high levels of *PPE* in these enterprises and indicates that the majority of the financing raised by these enterprises goes towards investments that are capitalized into *NEA* rather than covering expenses of the current period (the implied coefficient relating ΔNEA to *ECF*, i.e. one minus the estimated *EPAT* to *ECF* coefficient of 0.062, is 0.938).

5.1.4. Enterprise contraction, value generation, net cash outflow

The results for the analysis of sub-sample (4) are summarized in column (4) of Table 3. Similar to sub-sample (3) this subsample is comprised of enterprises where the overall growth pattern runs counter to enterprise return. In this case the enterprise is contracting despite positive enterprise returns, a somewhat rare occurrence indicated by the fact that only 6.89 percent of our observations are in sub-sample (4). Sub-sample (4) enterprises have high beginning-of-period leverage (median *NFL* of 0.362, which is the highest among the six sub-samples). Despite experiencing positive median RET_{ent} of 0.058, these enterprises are contracting due to large cash outflows to the owners of the enterprise, generally resulting in a deleveraging of the enterprise by returning capital to debt holders (median ΔNFL of -0.094).

The results from estimation of regression (3) are reported in Panel C. The estimate of the coefficient on RET_{ent} (0.256) indicates that there is a 25.6 cent profit in the current period per dollar of generated value change. It is interesting to note that the coefficients on RET_{ent} and the earnings/return coefficient are significantly positive and relatively high (0.256 and 0.248,

respectively, with t-statistics of 8.06 and 8.35); this, perhaps, seems odd because RET_{ent} and the majority of equity returns are positive (i.e., there is "good" news) and this, following the arguments in Basu [1997] would suggest lower RET_{ent} and earnings/return coefficients. In un-tabulated analysis, we penetrated this result further by running the earnings/return regression as specified by Basu (i.e., with an intercept and slope dummy, which is one if returns are negative, zero otherwise). The estimate of the coefficient on positive returns is, contrary to the prediction in Basu, significantly positive (0.148 with a t-statistic of 2.89); that is, by considering the direction of net transactions with the owners of the enterprise (positive vs. negative *ECF*), we have isolated a sample of observations where equity returns are *positive* and there is a substantial estimated coefficient relating earnings to return. Note that the estimates of the RET_{ent} and earnings/return coefficients are lower in the other sub-samples in which RET_{ent} is positive (i.e., sub-samples (1) and (2)). The key characteristic of this sample is that the enterprises are contracting due to cash outflow despite enterprise returns, highlighting the importance of considering *overall* enterprise growth as well as the direction of *ECF* in the analysis of the mapping from change in value to accounting numbers.

The estimate of the coefficient on *ECF* (i.e., 0.046) implies that for each dollar of cash outflow there is little conservatism in the accounting for *EPAT* for these observations. Perhaps the most relevant comparison for this coefficient is that of sub-sample (2). Both sub-samples are comprised of enterprises with positive enterprise returns who are distributing cash to owners; enterprises in sub-sample (4), however, are somewhat less profitable and make larger payouts that shrink the size of the enterprise. Accordingly, enterprises in sub-sample (2) are able to source a larger percentage of cash outflows from current *EPAT* relative to sub-sample (4) enterprises.

5.2. Putting it all together and analyzing the importance of consideration of *ECF*

We have shown that the recording of enterprise value increases/decreases in *EPAT* differs according to whether the value increase/decrease is generated via existing enterprise assets or contributed by/distributed to the owners of the enterprise. We have also shown differences across sub-samples based on the sign of the change in the market value of the enterprise, the sign of enterprise returns, and the sign of enterprise cash flow. Since enterprise returns are highly correlated with equity returns, which is the variable that is the focus of much of the extant work on conservatism in accounting, many of our empirical results from the analysis of the relation between *EPAT* and RET_{ent} are similar to those from the analysis of the relation between earnings and returns. Our primary contribution to the empirical understanding of the effects of growth on conservative accounting is through the introduction of cash flow to/from the owners of the enterprise. There are several key results.

First, as highlighted in the comparison of sub-samples (5) and (6) where the enterprise is contracting, there is loss in value of the existing enterprise assets, and there is either cash outflow or cash inflow, the extent to which cash flow affects the recording of *EPAT* varies a great deal (0.464 when there is cash inflow and not significantly different from zero when there is cash outflow).

Second, the direction of cash flow affects the sign and magnitude of the coefficient relating *EPAT* to RET_{ent}; in other words, identifying the direction of contributed/distributed value helps our understanding of the accounting for enterprise returns. This effect is best seen in the comparison of the estimates of the coefficients relating *EPAT* to RET_{ent} across sub-samples (1) and (2), where there is enterprise growth and generation of value from existing enterprise assets,

and across sub-samples (5) and (6), where there is enterprise contraction and loss of value of the existing enterprise assets. Partitioning growing enterprises (sub-samples (1) and (2)) on the sign of enterprise cash flow facilitates identification of a significantly negative relation between *EPAT* and RET_{ent} when there is cash inflow (coefficient estimate of -0.038 with a t-statistic of -4.03) and a significantly positive relation when there is cash outflow (coefficient estimate of 0.016 with a t-statistic of 2.58). Partitioning contracting enterprises (sub-samples (5) and (6)) on the sign of cash flow facilitates identification of a significantly higher coefficient relating *EPAT* to RET_{ent} when there is cash inflow (0.174) than when there is cash outflow (0.127); the (un-tabulated) t-statistic for the differences between these two coefficient estimates is 2.71.

Third, our results highlight the role of overall enterprise growth/contraction in accounting for value change when compared with the extant literature, which generally focuses on the relation between accounting and equity returns. This point is best illustrated by sub-sample (4), which isolates a sample of observations where equity returns are generally positive, but the estimated coefficients relating *EPAT* to RET_{ent} and earnings to return are significantly positive and relatively high (0.256 and 0.248, respectively, with t-statistics of 8.06 and 8.35). The key characteristic of this sample is that there is *overall* enterprise contraction due to cash outflow despite positive RET_{ent} and generally positive equity returns.

5.3. The relative magnitude of the effects of RET_{ent} and *ECF* on *EPAT*

The magnitude of the effect of *ECF* on recorded *EPAT* is, in many cases, equal to or greater than the magnitude of the effect of enterprise returns on *EPAT*. We summarize these effects in Figure 1. We plot the marginal effects of one-standard-deviation changes in RET_{ent} and *ECF* for

each regression sample, relative to one standard deviation of *EPAT* in each sample.[19] In all but sub-sample (6), where the enterprise is contracting on all dimensions and the coefficient relating *EPAT* to *ECF* is not significantly different from zero, a one standard deviation change in *ECF* contributes substantially to *EPAT*. In fact, for the full sample, the estimated effect of a one-standard deviation change in *ECF* is slightly larger than the estimated effect of a one standard-deviation change in RET_{ent}, such that a one standard deviation change in *ECF* is associated with a change of 30.30 percent of a standard deviation of *EPAT*, while an equivalent change in RET_{ent} is associated with a change of 17.90 percent. These estimated marginal effects are not statistically different from each other, indicating that *ECF* explains a roughly equal amount of *EPAT* variation as is explained by RET_{ent} for the full sample.[20] As further illustrated in Figure 1, the marginal effect of an *ECF* change is significantly lower than that of an RET_{ent} change in sub-samples (3), (4), and (6), roughly equivalent to that of an RET_{ent} change in sub-samples (1) and (5), and significantly greater than (almost four times as much as) an RET_{ent} change in sub-sample (2). In short, variation in *ECF*, which has been, by and large, omitted from previous studies of the mapping from returns to accounting, explains much of the observed variation in *EPAT* across enterprises.

[19] Note that this is equivalent to normalizing the regression (6) variables to have a mean of zero and standard deviation of one within each regression sample and then plotting the absolute value of the normalized regression coefficients for *EVg* and *ECF*.

[20] This is likely a conservative statement with respect to the relative importance of *ECF* in the full sample. The full-sample normalized coefficient on *ECF* is significantly different (two-tailed) from the normalized coefficient on *EVg* with high levels of statistical significance ($p < 0.0000$) when statistical significance is computed using a) unadjusted OLS standard errors, b) standard errors clustered by firm, or c) standard errors clustered by firm with fiscal year fixed effects included in the regression. Thus, *ECF* likely explains a greater portion of *EPAT* than *EVg* in the relevant population. Nevertheless, consistent with all other results presented in the paper, we report results based on standard errors clustered by both firm and year estimated using the cluster2 ado package in Stata.

6. Accounting for Change in Enterprise Value and Enterprise Characteristics

6.1. Motivation and research design

Thus far, we have demonstrated the accounting for value change generated from the existing enterprise assets and the accounting for contributed/distributed value change. We have shown that each dollar of *ECF* is recorded in either *EPAT* or in *ΔNEA*; that is, if the amount of value change due to *ECF* captured in *EPAT* is high (i.e., accounting is conservative), the amount recorded in change in the book value of enterprise assets is low and vice-versa. Importantly, the entire amount of the *ECF* is recorded in either *EPAT* or *ΔNEA*. For generated growth, however, the coefficient relating *EPAT* to RET_{ent} is the same as the coefficient relating *ΔNEA* to RET_{ent}; that is, the reporting of growth in the income statement is the same as the reporting of growth in consecutive balance sheets. We have demonstrated that the accounting for change in value differs according to the sign and the source of the value change.

In this section, we show how (conservative) accounting varies with key firm characteristics. Much work has been done on the effect of debt on the coefficient relating earnings to returns. This work focuses on this coefficient when returns are negative (i.e., news is bad); see, for example, Ball, Robin, and Sadka [2008] and Khan and Watts [2009]. A larger coefficient relating earnings to negative returns is generally observed when the debt level is higher. This work suggests that the estimate of the coefficient relating *EPAT* to RET_{ent} will increase with the amount of debt, particularly when *ΔEV* is negative.

Following prior research, we also examine the role of debt/leverage on the coefficients relating *EPAT* to RET_{ent} and *ECF*. However, we will show that, when the enterprise is primarily owned by equity holders (that is, the debt/equity ratio is low), investment is primarily in intangibles (R&D and advertising) and, when the enterprise is primarily owned by debt holders,

investment is primarily in property plant and equipment. This observation affects our predictions regarding the coefficients relating *EPAT* to RET_{ent} and *ECF* across partitions of the data based on the ratio of debt to equity ownership, and demonstrates that analyses based on the effects of debt capture differences in a number of relevant characteristics.

We perform two sets of analyses. First, by fiscal year, we partition the full sample into leverage ratio (*NFL*) deciles. Within each decile, we report decile means and medians of relevant enterprise characteristics. We also estimate regression (3) within each leverage decile. The results of these analyses are presented in Table 4, and serve to demonstrate the general effects of leverage on enterprise characteristics and on the relation between *EPAT* and changes in enterprise value.

We also examine the effects of leverage within each of the sub-samples (1) to (6) described in section 3, since the relation between *EPAT* and changes in enterprise value is also affected by the sign and source of enterprise value change. These additional analyses are based on regressions where we add interaction terms to regression (3). We interact each term in regression (3) with *DEC_NFL*, the observation's leverage decile ranking (as in Table 4), scaled to have a mean of zero and a range of one.[21] The formal regression specification is as follows:

$$EPAT_{it} = \beta_1 + \beta_2 RET_{ENT_{it}} + \beta_3 ECF_{it} + \beta_4 DEC\_NFL_{it} + \beta_5 RET_{ENT_{it}} * DEC\_NFL_{it} + \beta_6 ECF_{it} * DEC\_NFL_{it} + \varepsilon_{it}$$

[21] Specifically all observations in the lowest decile are coded -0.5, those in the next decile, -0.389, then -0.278, -0.167, -0.056, 0.056,….., 0.5. This decile rank transformation mitigates the effect of extreme observations and facilitates interpretation of the regression coefficients.

The interpretation of the estimates of the coefficients β_5 and β_6 on the decile interaction terms is that, a coefficient estimate of, say, 0.1 on $RET_{ENT_{it}} * DEC\_NFL_{it}$ implies the mapping from RET_{ent} to $EPAT$ increases/decreases by 0.01 for each decile of leverage above/below the mean sample leverage. The results of these regressions are summarized in Table 5 for each of the sub-samples (1) to (6) described in section 3.3.

6.2. Results

Table 4, Panel A presents means and medians of key variables for each leverage decile. The mean (median) portion of enterprise capital funded by debtholders (*NFL*) increases from -0.64 (-0.45) in decile 1, indicative of net financial assets, to 0.65 (0.65) in decile 10. The descriptive statistics clearly indicate that investment in intangibles is highest when the enterprise is primarily owned by equity holders. Mean (median) *RDADV* decreases monotonically from 0.13 (0.06) to 0.03 (0.00) as leverage increases from the lowest to highest decile. The descriptive statistics also indicate that when the enterprise is primarily owned by debt holders, investment is primarily in property plant and equipment. While the lowest decile of leverage includes some observations with high tangibility, mean (median) *PPE* increases almost monotonically from 0.25 (0.13) in decile 2 to 0.56 (0.48) in decile 10. Finally, enterprise book-to-market (BTM) shows a similar increase from 0.43 (0.29) in decile 2 to 1.02 (1.00) in decile 10.

Table 4, Panel B presents the results of estimating regression (3) for each decile of *NFL*. The leverage effect documented in prior literature is clearly evident at the enterprise level, demonstrated by the coefficients relating *EPAT* to RET_{ent} increasing monotonically from an insignificant 0.14 in decile 1 to a highly significant 0.136 (*t*-statistic 8.19) in decile 10. However, this result is unlikely to be driven solely by an increased demand for timeliness of negative information by debtholders. The percentage of negative returns is fairly stable across

deciles, and slightly *decreasing* between lower and higher deciles of debt. In untabulated tests, we also confirmed that the documented increase in the RET_{ent} coefficient remains statistically and economically significant when the sample is confined to only observations with *positive* returns. Furthermore, the results in Panel B also demonstrate that the coefficient relating *EPAT* to *ECF* declines monotonically from 0.438 (*t*-statistic 13.56) in decile 1 to an insignificant 0.001 in decile 10. This is consistent with enterprises with low leverage and high intangibles intensity in decile 1 expensing a high proportion of *ECF* investments into *EPAT*, while the highly leveraged firms with more tangible *ECF* investments in decile 10 are able to capitalize a higher proportion of *ECF* investments in *NEA*.[22] It is possible that these same differences in intangibles intensity and asset tangibility also contribute to the increasing coefficient on RET_{ent} across leverage deciles discussed above. Investments in intangibles are generally long-term investments with uncertain benefits and time horizons, such that almost none of the value generated from these investments is recognized in current income. On the other hand, investments in tangible assets may be associated with shorter investment horizons, and some portion of the generated value from such projects may accrue to current period earnings.

Table 5, Panel A presents the results of estimating regression (3) including interaction terms with *DEC_NFL* for each of our six growth partitions. Prior work focuses particularly on the effect of leverage on the relation between earnings and returns when returns are negative (i.e., news is bad); see, for example, Ball, Robin, and Sadka [2008] and Khan and Watts [2009]. This work generally observes a larger coefficient relating earnings to negative returns when the debt level is higher. We observe a similar pattern for the coefficient relating *EPAT* to RET_{ent}. This is

[22] The insignificant coefficient on *ECF* in decile 10 is also consistent with the *BTM* ratio for decile 10, which is close to 1 (Panel A), indicating that the book values of the enterprise assets for the firms in decile 10 are close to their market values.

evidenced by the positive coefficient on RET_{ent} *DEC_NFL in sub-sample (6), where RET_{ent} is negative (coefficient estimate of 0.143, with a t-statistic of 7.48). Interestingly, a new insight emerges from a comparison of sub-sample (5), where RET_{ent} is negative and there is cash inflow, with sub-sample (6), where RET_{entt} is negative but there is cash outflow; in contrast to the estimate of the coefficient on RET_{ent} *DEC_NFL when there is cash outflow, the estimate of this coefficient when there is cash inflow is not significantly different from zero (0.019 with a t-statistic of 0.56). Since the amount of debt is much smaller for this sub-sample, (median *NFL* of 0.003 compared with 0.139), this result serves as further evidence of the effect of debt postulated in the literature (i.e., the greater the debt, the greater the demand for accounting conservatism).

The estimated coefficients on RET_{ent} *DEC_NFL are also significantly positive (0.079 and 0.039) for sub-samples (1) and (2) where RET_{ent} is positive. This result is new to the literature as far as we are aware; the extent to which enterprise returns are captured in current *EPAT* increases with debt level when the enterprise is doing well *and* when the enterprise is doing poorly.

The estimates of the coefficient on *ECF***DEC_NFL* are negative and significant for all six sub-samples. This suggests that, when enterprises have higher levels of debt, *ECF* inflows are more likely to be capitalized into *NEA* than expensed to *EPAT*, and that *ECF* outflows are more likely to come from liquidating *NEA* than from current *EPAT,* consistent with the results discussed above in Table 4.

Finally, for comparison, Table 5 panel B presents the results of estimating regressions of equity earnings on equity returns including an interaction term between *RET* and *DEC_NFL* for each of our six growth partitions. While the tenor of the results is similar to the enterprise-level analysis, some aspects of the results in Panel B demonstrate the importance of controlling for

transactions with owners when examining the effects of leverage on the relation between earnings and returns. The tenor of the results is similar in that a large negative coefficient is observed on the *RET*DEC_NFL* interaction term in sub-sample (6), and a smaller positive coefficient observed on the interaction term in sub-sample (1) (0.460 and 0.077 respectively, both significant at the 1 percent level). However, the inferences from sub-samples (2), (3), and (5) change drastically between Panel A and Panel B. While an in-depth examination of the equity-level results is beyond the scope of our study, we highlight the differences between Panel A and Panel B as demonstrating the importance of controlling for transactions with owners when examining the effects of capital structure on the relation between earnings and returns.

7. Summary and conclusions

We focus on the recording of change in enterprise value in the financial statements. This motivates two fundamental changes to the methodology at the core of the vast empirical literature examining the extent to which accounting captures concurrent changes in market value. First, we bring the focus to the part of the earnings/returns relation that is not dollar-for-dollar because, at best, the part that is recorded dollar-for-dollar is uninteresting empirically and, at worst, including this part may lead to incorrect inferences. Second, we suggest the inclusion of enterprise cash flows in the earnings/change in value relation. This additional variable captures an aspect of accounting that has not been examined in prior studies, the accounting for enterprise growth/contraction due to transactions with enterprise owners.

We show that this additional source of value change explains a considerable portion of enterprise earnings; in fact, it explains almost four times that explained by enterprise returns for a sub-sample of observations where there is enterprise growth due to change in the value of

enterprise assets in place yet there is net cash outflow to the owners of the firm. Adding this dimension of change in value may considerably enhance studies which have to-date relied on the earnings-return relation. Vassallo and Taylor [2015], for example, show that the estimates of the coefficients relating enterprise profit to both enterprise returns and enterprise cash flows vary, as expected, with audit quality.

Much of our analysis focuses on partitions of the data based on the sign and source of change in enterprise value. We argue and show that accounting for value change (growth) depends, not only on the direction (expansion vs. contraction) of the value change, but also on the source of the value change.

We illustrate the importance of: (1) focusing on enterprise earnings and change in enterprise value; and, (2) adding enterprise cash flow to the earnings/return regression, by partitioning on the debt/equity ratio and showing how the enterprise assets differ across these partitions and, in turn, the accounting (i.e., the portion of enterprise returns and enterprise cash flow that is captured in enterprise profit) differs. An implication of this finding is that conclusions in the extant literature regarding the influence of, for example, contracting, may be premature; the difference may reflect no more than differences in the accounting for different assets (e.g., full expensing of investment in R&D, which tends to be the primary form of investment when the enterprise is mostly owned by equity holders) vs. capitalizing investment in property, plant and equipment, which tends to be the primary form of investment when the enterprise is owned by debt holders).

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Appendix A: Variable Measurement

A.1: Terminology

Throughout our paper, we adopt the terminology of Gode and Ohlson [2013] for distinguishing between the productive enterprise of the firm and the financing of that enterprise. As noted by Gode and Ohlson [2013], enterprise activities are often referred to as operating activities. We do not use the word "operating" because there is ambiguity about its precise meaning. In particular, GAAP operating cash flows differ from enterprise cash flows. We adapt the following from Gode and Ohlson [2013] as a terminology reference:

Ours	Alternatives used in practice
Enterprise Value [EV]	Firm Value [FV] Market Value of the Firm [MVF]
Enterprise profit after tax [*EPAT*]	Net operating profit after tax [NOPAT] Earnings before interest but after taxes [EBIAT] Unleveraged NI, pre-financing NI
Enterprise assets [EA]	Operating assets [OA]
Enterprise liabilities [EL]	Operating liabilities [OL]
Net enterprise assets [NEA = EA – EL]	Net operating assets [NOA = OA – OL]
Enterprise cash flows [*ECF* = *EPAT* – Change in NEA]	Free cash flows to the firm [FrCF or FCF] Unlevered cash flows
Financial assets [FA]	"Cash" or cash and marketable securities or cash and cash equivalents
Financial liabilities [FL]	Debt, Financial Obligations [FO]
Net financial liabilities [NFL = FL- FA]	Net debt = Debt – "Cash" Net Financial Obligations [NFL]

A.2: Variable Definitions

= Compustat Data Item.

Δ = Change between current and prior fiscal year.

Enterprise Value (***EV***) = Market Value of Equity (***MVE***) plus Net Financial Liabilities (***NFL***).

Market Value of Equity (***MVE***) = Fiscal year end price (#PRCC_F) times common shares outstanding (#CSHO), from Compustat. Scaled by beginning-of-period enterprise value ($\boldsymbol{EV_{t-1}}$).

Net Financial Liabilities (***NFL***) = Financial Liabilities (***FL***) minus Financial Assets (***FA***). Scaled by beginning-of-period enterprise value ($\boldsymbol{EV_{t-1}}$).

Financial Liabilities (***FL***) = Debt in current liabilities (#DLC) plus long term debt (#DLTT) plus preferred stock (#PSTK) minus preferred treasury stock (#TSTKP) plus preferred dividends in arrears (#DVPA).

Financial Assets (***FA***) = Cash and short term investments (#CHE) plus investments and advances-other (#IVAO).

Net Enterprise Assets (***NEA***) = Net Financial Liabilities (***NFL***) plus Common Stockholders' Equity (***CSE***) plus Minority Interest (#MIB). Scaled by beginning-of-period enterprise value ($\boldsymbol{EV_{t-1}}$).

Common Stockholders' Equity (***CSE***) = Common equity (#CEQ) plus preferred treasury stock (#TSTKP) minus preferred dividends in arrears (#DVPA).

Enterprise Profit After Tax (***EPAT***) = Comprehensive Net Income (***CNI***) plus Net Financial Expense (***NFE***) plus minority interest in income (#MII). Scaled by beginning-of-period enterprise value ($\boldsymbol{EV_{t-1}}$).

Comprehensive Net Income (***CNI***) = Net Income (#NI) minus preferred dividends (#DVP) plus Clean Surplus Adjustment to Net Income (***CSA***).

Clean Surplus Adjustment to Net Income (***CSA***) = marketable securities adjustment (#MSA) minus lag marketable securities adjustment ($\#MSA_{t-1}$) plus cumulative translation adjustment (#RECTA) minus lag cumulative translation adjustment ($\#RECTA_{t-1}$).

Net Financial Expense (***NFE***) = After-tax interest expense ((#XINT)*(1 – marginal tax rate)) plus preferred dividends (#DVP) minus after tax interest income ((#IDIT)*(1-marginal tax rate)) plus unusual financial expense (($\#MSA_{t-1}$)-(#MSA)).

Comprehensive Net Financial Income (***CNFI***) = Comprehensive Net Income (***CNI***) minus Enterprise Profit After Tax (***EPAT***).

Marginal Tax Rate = The top statutory federal corporate tax rate plus 2% average state corporate tax rate. The top statutory federal corporate tax rate was 52% in 1963, 50% in 1964, 48% in 1965 – 1967, 52.8% in 1968 – 1969, 49.2% in 1970, 48% in 1971 – 1978, 46% in 1979 – 1986, 40% in 1987, 34% in 1988 – 1992 and 35% in all sample years thereafter.

Enterprise Return ($\boldsymbol{RET_{ent}}$) = Change in Enterprise Value (***ΔEV***) plus Enterprise Free Cash Flow (***ECF***). Scaled by beginning-of-period enterprise value ($\boldsymbol{EV_{t-1}}$).

Enterprise Free Cash Flow (***ECF***) = Enterprise Profit After Tax (***EPAT***) minus change in Net Enterprise Assets (***ΔNEA***). Scaled by beginning-of-period enterprise value ($\boldsymbol{EV_{t-1}}$).

Earnings scaled by Price (***X/P***) = Earnings before extraordinary items (#IB) scaled by beginning of period Market Value of Equity ($\boldsymbol{MVE_{t-1}}$).

Stock Return (***RET***) = Cumulative buy-and-hold fiscal year stock return, from CRSP.

Research, Development, and Advertising (***RDADV***) = R&D Expense (#XRD) plus Advertising Expense (#XAD). Scaled by beginning-of-period enterprise value ($\boldsymbol{EV_{t-1}}$).

Property Plant and Equipment (***PPE***) = Property plant and equipment, net of accumulated depreciation (#PPENT). Scaled by beginning-of-period enterprise value ($\boldsymbol{EV_{t-1}}$).

Enterprise Book-to-Market (***BTM***) = Beginning-of-period Net Enterprise Assets ($\boldsymbol{NEA_{t-1}}$) divided by beginning-of-period Enterprise Value ($\boldsymbol{EV_{t-1}}$).

Appendix B: Development of Model (3)

Beginning with equation (2) in the text:

$$\frac{NI_{it}}{MVE_{it-1}} = \alpha_{0t} + \alpha_1 \frac{\Delta MVE_{it}+FCFE_{it}}{MVE_{it-1}} + \alpha_2 \frac{FCFE_{it}}{MVE_{it-1}} + \varepsilon_{2it} \quad (2)$$

and recognizing the facts that: (1) net income is equal to enterprise profit after tax less net financial expenses; (2) the market value of equity is equal to the market value of the enterprise minus the market value of net financial liabilities (net debt);[23] and, (3) free cash flow to equity holders is equal to enterprise cash flows (*ECF*) minus the portion of *ECF* that goes to/comes from holders of net debt, equation (2) may be re-written:

$$\frac{EPAT_{it}-NFE_{it}}{EV_{it-1}} = \alpha_{0t} + \alpha_{Mt} \frac{(\Delta EV_{it}+\Delta MVD_{it}+ECF_{it}+FCFD_{it})}{EV_{it-1}} + \alpha_{Ft} \frac{(ECF_{it}+FCFD_{it})}{EV_{it-1}} + \varepsilon_{1it} \quad (B.1)$$

where $EPAT_{it}$ is the enterprise profit after tax of firm *i* for year *t*, NFE_{it} is net financial expenses of company *i* for year *t*, EV_{it} is the market value of the enterprise (operations) of firm *i* at time *t*, MVD_{it} is the market value of net debt of company *i* at time *t*, ECF_{it} is enterprise cash flows to the owners of the enterprise (equity and net debt holders), and $FCFD_{it}$ is cash flows to/from the net debt holders.[24]

Equation (B.1) may be re-written:

$$\frac{EPAT_{it}-NFE_{it}}{EV_{it-1}} = \alpha_{0t} + \alpha_{EVt} \frac{\Delta EV_{it}+ECF_{it}}{EV_{it-1}} + \alpha_{MVDt} \frac{\Delta MVD_{it}+FCFD_{it}}{EV_{it-1}} + \alpha_{ECFt} \frac{ECF_{it}}{EV_{it-1}} + \alpha_{FCFDt} \frac{FCFD_{it}}{EV_{it-1}} + \varepsilon_{1it} \quad (B.2)$$

[23] Note that the market value of net debt (as well as net financial expenses) can be negative. That is, the equity holders can own the enterprise and a "pile of cash" (as in Microsoft, Apple, and Starbucks, for example). It follows that substituting *MVE* with *EV* - *MVD* (where negative *MVD* implies market value of net financial assets) remains valid.

[24] We have changed the scalar from *MVE* to *EV* noting that the relations hold among the numerator (unscaled) variables. Later, in the regression analyses that we run, *EV* is the natural scalar because the numerator variables all relate to enterprise value rather than equity value.

As a reasonable first approximation, net financial expenses and net debt are accounted for dollar for dollar (in other words, there is little or no conservatism); that is, $NFE = \Delta MVD + FCFD$. Thus, α_{Mt}, in equation (B.1) captures a combination of mappings from change in value to earnings that are, as a first approximation, *not* conservative ($NFE = \Delta MVD + FCFD$) along with mappings that *are* conservative ($EPAT \neq \Delta EV + ECF$). It follows that changing the focus to the accounting for change in value at the enterprise level changes the focus to the entity where conservative accounting occurs and the analyses are not confused/biased by the addition of variables where the accounting is not conservative.

Hence, in order to focus on the entity where conservative accounting is manifested we remove the equality ($NFE = \Delta MVD + FCFD$) from both sides of equation (B.2), and estimate equation (3) from the text:

$$\frac{EPAT_{it}}{EV_{it-1}} = \beta_{0t} + \beta_{1t}\frac{\Delta EV_{it} + ECF_{it}}{EV_{it-1}} + \beta_{2t}\frac{ECF_{it}}{EV_{it-1}} + \varepsilon_{2it} \qquad (3)$$

Table 1
Descriptive Statistics

Panel A: Full sample descriptive statistics

	N	Mean	σ	p1	p25	Median	p75	p99
EV ($ Bil.)	128,269	1.761	11.705	0.003	0.032	0.120	0.574	29.387
ΔEV	128,269	0.160	0.628	-0.761	-0.175	0.051	0.341	2.401
ΔNEA	128,269	0.064	0.207	-0.434	-0.020	0.036	0.124	0.830
EPAT	128,269	0.034	0.136	-0.479	0.007	0.057	0.096	0.297
RET_{ent}	128,269	0.131	0.596	-0.853	-0.171	0.056	0.309	2.225
ECF	128,269	-0.029	0.203	-0.802	-0.090	0.002	0.068	0.402
X/P	128,269	0.029	0.159	-0.599	-0.001	0.054	0.099	0.348
RET	128,269	0.114	0.555	-0.780	-0.237	0.041	0.350	1.980
RDADV	128,269	0.052	0.110	0.000	0.000	0.018	0.063	0.449
CAPX	128,269	0.084	0.111	0.000	0.022	0.051	0.104	0.525
PPE	128,269	0.386	0.389	0.005	0.107	0.272	0.544	1.694
NFL	128,269	0.099	0.426	-1.194	-0.071	0.102	0.332	0.821
ΔNFL	128,269	0.027	0.194	-0.431	-0.054	0.008	0.085	0.722
BTM	128,269	0.679	0.516	-0.039	0.309	0.613	0.957	2.227
|NFE|/MVE	128,269	0.034	0.079	0.000	0.003	0.012	0.035	0.312

Panel B: Frequencies among enterprise growth sub-samples

	(1)	(2)	(3)	(4)	(5)	(6)	
	$+ \Delta EV$ $+ RET_{ent}$ *ECF in*	$+ \Delta EV$ $+ RET_{ent}$ *ECF out*	$+ \Delta EV$ $- RET_{ent}$ *ECF in*	$- \Delta EV$ $+ RET_{ent}$ *ECF out*	$- \Delta EV$ $- RET_{ent}$ *ECF in*	$- \Delta EV$ $- RET_{ent}$ *ECF out*	Total
N	31,349	33,060	7,449	8,833	24,278	23,300	128,269
Pct (%)	24.44	25.77	5.81	6.89	18.93	18.16	100

This table presents descriptive statistics for the full sample of observations used in our analysis. Panel A presents sample statistics. σ and p denote the sample standard deviation and percentiles, respectively. Panel B presents frequencies of observations within each enterprise growth sub-sample used in our empirical analyses. As described in Section 3.3 of the text, we partition the full sample into six enterprise growth sub-samples based on the sign of *ΔEV*, RET_{ent}, and *ECF*. A positive (negative) sign denotes that observations in the sub-sample are restricted to those where the corresponding variable is greater than or equal to zero (less than zero). All variables are defined in Appendix A.2.

Table 2
Correlations Among Key Measures

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
[1] *EV*		0.009	-0.011	0.023	0.022	0.019	0.026	0.020	0.023	-0.029	-0.031	0.012	-0.010	-0.070
[2] *ΔEV*	0.195		0.358	0.074	-0.003	0.946	-0.315	0.102	0.819	0.174	0.104	-0.172	0.121	0.036
[3] *ΔNEA*	0.032	0.392		0.357	-0.105	0.111	-0.780	0.315	0.109	-0.025	0.207	-0.069	0.684	-0.038
[4] *EPAT*	0.049	0.323	0.357		-0.084	0.182	0.305	0.810	0.253	-0.203	0.209	0.162	-0.120	0.167
[5] *CNFI*	0.013	-0.055	-0.048	-0.149		0.014	0.051	0.048	-0.018	0.097	-0.293	-0.520	-0.164	-0.323
[6] RET_{ent}	0.207	0.902	0.122	0.418	-0.054		0.008	0.182	0.883	0.146	0.086	-0.120	-0.137	0.089
[7] *ECF*	0.066	-0.197	-0.687	0.284	-0.045	0.157		0.221	0.059	-0.111	-0.071	0.179	-0.778	0.151
[8] *X/P*	0.064	0.301	0.314	0.929	-0.137	0.404	0.289		0.279	-0.102	0.165	0.044	-0.093	0.133
[9] *RET*	0.208	0.864	0.118	0.427	-0.029	0.960	0.163	0.433		0.078	0.117	0.008	-0.151	0.122
[10] *RDADV*	-0.066	0.034	-0.066	-0.073	0.165	0.028	-0.039	-0.077	0.035		-0.020	-0.329	0.042	0.089
[11] *PPE*	-0.030	0.168	0.163	0.337	-0.466	0.174	0.072	0.333	0.172	-0.176		0.182	0.182	0.622
[12] *NFL*	0.060	-0.020	-0.087	0.111	-0.796	0.046	0.195	0.170	0.041	-0.223	0.424		-0.130	0.226
[13] *ΔNFL*	-0.028	0.120	0.636	-0.113	-0.111	-0.180	-0.788	-0.133	-0.191	-0.027	0.110	-0.075		0.021
[14] *BTM*	-0.219	0.078	-0.046	0.303	-0.565	0.154	0.242	0.318	0.150	-0.079	0.680	0.561	-0.025	

This table presents Pearson (above diagonal) and Spearman (below diagonal) correlations among key variables in the sample. All variables are defined in Appendix A.2. Correlation coefficients with an absolute magnitude greater than 0.007 are statistically significant at the 1 percent level.

Table 3
Summary of Results by Sub-Sample

	(1) $+\Delta EV$ $+ RET_{ent}$ *ECF in*	(2) $+\Delta EV$ $+ RET_{ent}$ *ECF out*	(3) $+\Delta EV$ $- RET_{ent}$ *ECF in*	(4) $-\Delta EV$ $+ RET_{ent}$ *ECF out*	(5) $-\Delta EV$ $- RET_{ent}$ *ECF in*	(6) $-\Delta EV$ $- RET_{ent}$ *ECF out*
Panel A: Sample Medians for Key Measures						
EV ($ Bil.)	0.095	0.207	0.069	0.109	0.094	0.145
ΔEV	0.455	0.226	0.098	-0.062	-0.250	-0.244
ΔNEA	0.156	0.015	0.215	-0.066	0.059	-0.011
EPAT	0.066	0.083	0.037	0.075	0.003	0.045
RET_{ent}	0.291	0.315	-0.082	0.058	-0.355	-0.158
ECF	-0.098	0.064	-0.212	0.141	-0.066	0.052
RDADV	0.019	0.020	0.013	0.013	0.023	0.014
PPE	0.318	0.307	0.366	0.401	0.158	0.230
NFL	0.092	0.121	0.130	0.362	0.003	0.139
ΔNFL	0.086	-0.039	0.191	-0.094	0.062	-0.028
BTM	0.602	0.686	0.656	0.979	0.385	0.633
|NFE|/MVE	0.013	0.011	0.020	0.031	0.007	0.011
Panel B: Spearman Correlations between Key Measures						
EPAT x RET_{ent}	-0.004	**0.256**	**0.209**	**0.270**	**0.416**	**0.238**
EPAT x ECF	**0.058**	**0.315**	**0.130**	**0.207**	**0.258**	**0.119**
RET_{ent} *x ECF*	**-0.151**	**0.343**	**0.632**	**0.609**	**0.395**	**0.181**
RET_{ent} *x RDADV*	**0.112**	**0.123**	**-0.057**	**0.045**	**-0.157**	**-0.062**
RET_{ent} *x PPE*	**-0.151**	**-0.080**	0.020	**0.128**	**0.349**	**0.309**
RET_{ent} *x NFL*	**-0.303**	**-0.288**	**0.275**	0.032	**0.432**	**0.342**
RET_{ent} *x ΔNFL*	**-0.196**	**-0.373**	**-0.247**	**-0.474**	**-0.071**	**-0.024**
RET_{ent} *x BTM*	**-0.212**	**-0.043**	**0.137**	**0.302**	**0.369**	**0.306**
ECF x RDADV	**-0.021**	**0.075**	-0.035	0.025	**-0.139**	**-0.022**
ECF x PPE	**-0.119**	**0.171**	**-0.071**	**0.152**	0.017	**0.174**
ECF x NFL	**0.068**	**0.021**	**0.200**	**0.157**	**0.229**	**0.206**
ECF x ΔNFL	**-0.417**	**-0.619**	**-0.422**	**-0.755**	**-0.482**	**-0.703**
ECF x BTM	**-0.055**	**0.311**	**0.051**	**0.428**	**0.067**	**0.385**
PPE x RDADV	**-0.223**	**-0.123**	**-0.251**	**-0.079**	**-0.256**	**-0.155**
PPE x NFL	**0.423**	**0.411**	**0.362**	**0.287**	**0.445**	**0.394**
PPE x ΔNFL	**0.394**	**0.066**	**0.322**	**-0.056**	**0.286**	0.016
PPE x BTM	**0.678**	**0.696**	**0.599**	**0.558**	**0.700**	**0.638**
NFL x ΔNFL	**0.186**	**0.059**	**0.080**	**-0.149**	0.013	**-0.120**
NFL x BTM	**0.534**	**0.524**	**0.500**	**0.503**	**0.526**	**0.575**
ΔNFL x BTM	**0.419**	**-0.039**	**0.315**	**-0.311**	**0.283**	**-0.169**
EV x BTM	**-0.234**	**-0.407**	**-0.141**	**-0.458**	**-0.070**	**-0.318**
Observations	31,349	33,060	7,449	8,833	24,278	23,300

Table 3 (continued)
Summary of Results by Sub-Sample

	(1) $+\Delta EV$ $+ RET_{ent}$ *ECF in*	(2) $+\Delta EV$ $+ RET_{ent}$ *ECF out*	(3) $+\Delta EV$ $- RET_{ent}$ *ECF in*	(4) $-\Delta EV$ $+ RET_{ent}$ *ECF out*	(5) $-\Delta EV$ $- RET_{ent}$ *ECF in*	(6) $-\Delta EV$ $- RET_{ent}$ *ECF out*
Panel C: Estimates of Regression (3)						
Intercept	0.079***	0.056***	0.039***	0.045***	0.075***	0.056***
	(9.92)	(14.82)	(4.80)	(11.37)	(9.74)	(16.87)
RET_{ent}	-0.038***	0.016***	0.330***	0.256***	0.174***	0.127***
	(-4.03)	(2.58)	(8.91)	(8.06)	(11.93)	(8.80)
ECF	0.123***	0.318***	0.062***	0.046*	0.464***	-0.054
	(4.65)	(7.01)	(3.44)	(1.89)	(10.93)	(-1.50)
Adjusted R^2	0.076	0.121	0.101	0.081	0.268	0.043
Panel D: Estimates of Earnings-on-Returns Regressions						
Intercept	0.039***	0.073***	0.008	0.042***	0.050***	0.080***
	(4.43)	(12.02)	(0.80)	(3.84)	(6.77)	(13.43)
RET	0.000	0.038***	0.257***	0.248***	0.233***	0.279***
	(0.03)	(3.04)	(7.44)	(8.35)	(14.46)	(13.00)
Adjusted R^2	-0.000	0.025	0.045	0.079	0.111	0.121
Observations	31,349	33,060	7,449	8,833	24,278	23,300
N *RET* <0	2,351	399	7,043	2,172	24,178	22,971

This table provides descriptive statistics and OLS regression estimates for each enterprise growth sub-sample. Each column presents results for one of the enterprise growth sub-samples (1) – (6) defined in Table 1. Panel A presents the sub-sample medians for key variables. Panel B presents univariate correlations between key variables within each sub-sample. Correlations presented in bold typeface are statistically significant at the 1 percent level. Panel C reports the estimated coefficients and adjusted R^2 from estimating regression (3) on each sub-sample. The dependent measure in these regressions is *EPAT*. Panel D reports the estimated coefficients and adjusted R^2 from regressing earnings (*X/P*) on returns for each subsample. We also report the number of observations in each sub-sample with negative *RET*. All variables are defined in Appendix A.2. *t*-statistics reported in parenthesis are calculated using two-way clustered standard errors, clustered by firm and year. *, ** and *** indicate (two-tailed) significance at the 10 percent, 5 percent and 1 percent levels respectively.

Table 4
Effects of Leverage

	NFL Deciles									
	Low Leverage	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	High Leverage
Panel A: Decile Means (Medians) for Key Measures										
NFL	-0.64	-0.17	-0.07	0.00	0.07	0.14	0.23	0.33	0.45	0.65
	(-0.45)	(-0.17)	(-0.07)	(-0.01)	(0.05)	(0.13)	(0.21)	(0.32)	(0.44)	(0.65)
RDADV	0.13	0.07	0.05	0.04	0.04	0.04	0.04	0.03	0.03	0.03
	(0.06)	(0.04)	(0.03)	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.00)
CAPX	0.10	0.07	0.07	0.07	0.08	0.09	0.09	0.10	0.10	0.09
	(0.05)	(0.04)	(0.04)	(0.04)	(0.05)	(0.06)	(0.06)	(0.07)	(0.06)	(0.05)
PPE	0.38	0.25	0.24	0.27	0.32	0.37	0.44	0.50	0.54	0.56
	(0.21)	(0.13)	(0.14)	(0.16)	(0.22)	(0.29)	(0.35)	(0.42)	(0.45)	(0.48)
BTM	0.68	0.43	0.41	0.46	0.55	0.66	0.76	0.86	0.96	1.02
	(0.45)	(0.29)	(0.29)	(0.35)	(0.46)	(0.57)	(0.68)	(0.79)	(0.91)	(1.00)
Panel B: Estimates of Regression (3)										
Intercept	0.041^{***}	0.032^{***}	0.034^{***}	0.040^{***}	0.044^{***}	0.045^{***}	0.043^{***}	0.036^{***}	0.028^{***}	0.017^{***}
	(3.31)	(4.70)	(5.44)	(6.81)	(8.02)	(8.50)	(9.08)	(7.49)	(5.78)	(3.82)
ΔEV	0.014	0.031^{***}	0.040^{***}	0.045^{***}	0.050^{***}	0.068^{***}	0.077^{***}	0.096^{***}	0.110^{***}	0.136^{***}
	(0.86)	(2.83)	(3.77)	(4.53)	(3.86)	(7.06)	(7.93)	(8.30)	(7.76)	(8.19)
ECF	0.438^{***}	0.341^{***}	0.274^{***}	0.208^{***}	0.186^{***}	0.117^{***}	0.089^{***}	0.062^{***}	0.041^{***}	0.001
	(13.56)	(12.60)	(13.32)	(12.31)	(10.82)	(8.83)	(9.47)	(6.93)	(5.06)	(0.16)
Adjusted R^2	0.267	0.219	0.184	0.161	0.149	0.137	0.113	0.114	0.105	0.108
Observations	12,806	12,832	12,832	12,830	12,821	12,844	12,831	12,831	12,833	12,809
N $RET < 0$	5,695	6,143	6,070	6,283	6,116	5,774	5,604	5,734	5,722	5,973

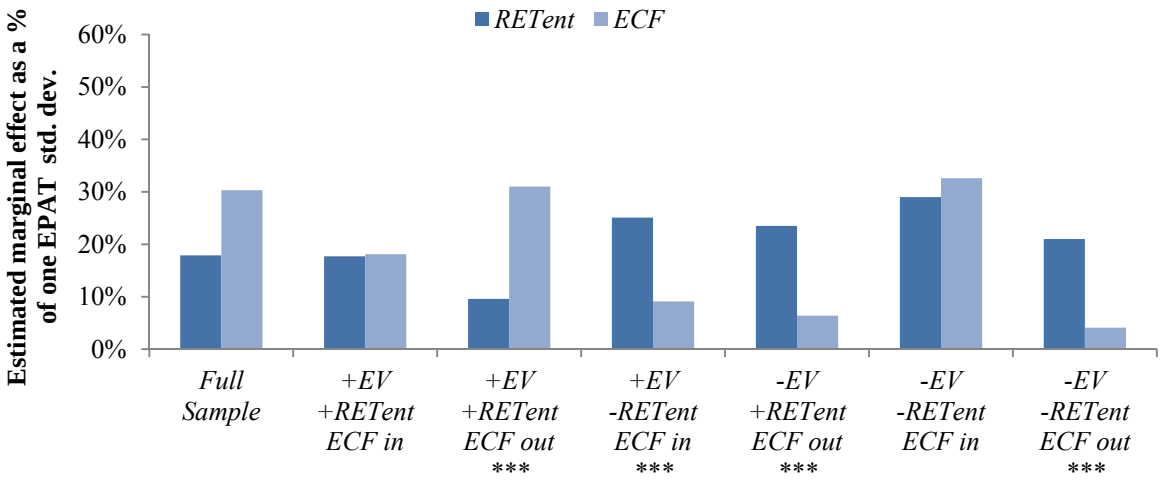
This table provides descriptive statistics and OLS regression estimates within each decile of *NFL* in the full sample. Observations are ranked into deciles each fiscal year. Panel A presents decile means (medians) for key variables. Panel B reports the estimated coefficients and adjusted R^2 from estimating regression (3) within each decile. The dependent measure in these regressions is *EPAT*. All variables are defined in Appendix A.2. *t*-statistics reported in parenthesis in Panel B are calculated using two-way clustered standard errors, clustered by firm and year. *, ** and *** indicate (two-tailed) significance at the 10 percent, 5 percent and 1 percent levels respectively.

Table 5
Interaction Tests of Leverage Effects, by Subsample

	(1)	(2)	(3)	(4)	(5)	(6)
	$+\Delta EV$	$+\Delta EV$	$+\Delta EV$	$-\Delta EV$	$-\Delta EV$	$-\Delta EV$
	$+ RET_{ent}$	$+ RET_{ent}$	$- RET_{ent}$	$+ RET_{ent}$	$- RET_{ent}$	$- RET_{ent}$
	ECF in	*ECF out*	*ECF in*	*ECF out*	*ECF in*	*ECF out*
Panel A: Estimates of Regression (3), including *DEC_NFL* interaction terms						
Intercept	0.067***	0.060***	0.030***	0.054***	0.068***	0.067***
	(9.90)	(15.61)	(3.45)	(14.25)	(9.56)	(19.25)
DEC_NFL	-0.038***	-0.020***	0.029*	-0.035***	-0.080***	-0.044***
	(-2.73)	(-4.14)	(1.88)	(-4.44)	(-5.66)	(-6.89)
RET_{ent}	-0.005	0.017***	0.252***	0.196***	0.190***	0.189***
	(-0.98)	(3.69)	(7.22)	(5.46)	(14.41)	(15.76)
RET_{ent}*DEC_NFL	0.079***	0.039***	-0.077	0.006	0.019	0.143***
	(3.76)	(5.24)	(-0.82)	(0.08)	(0.56)	(7.48)
ECF	0.105***	0.280***	0.060***	0.107***	0.314***	0.016
	(5.95)	(8.09)	(3.42)	(3.70)	(8.60)	(0.45)
*ECF*DEC_NFL*	-0.359***	-0.416***	-0.127**	-0.256***	-0.650***	-0.335***
	(-6.06)	(-8.41)	(-2.22)	(-4.99)	(-10.70)	(-6.55)
Adjusted R^2	0.137	0.163	0.123	0.168	0.284	0.133
Panel B: Estimates from regressing earnings on returns, including *DEC_NFL* interaction terms						
Intercept	0.039***	0.073***	0.010	0.057***	0.059***	0.070***
	(4.36)	(12.28)	(1.06)	(7.16)	(7.70)	(11.73)
DEC_NFL	0.020*	-0.025***	0.084***	-0.098***	0.082***	0.014
	(1.93)	(-3.15)	(6.05)	(-5.04)	(6.76)	(1.33)
RET	0.007	0.038***	0.247***	0.308***	0.258***	0.200***
	(0.62)	(3.08)	(8.45)	(7.46)	(14.70)	(14.56)
*RET*DEC_NFL*	0.077***	0.020	0.317***	-0.120*	0.255***	0.460***
	(4.59)	(1.34)	(4.59)	(-1.70)	(8.91)	(13.23)
Adjusted R^2	0.021	0.027	0.055	0.110	0.122	0.196
Observations	31,349	33,060	7,449	8,833	24,278	23,300
N *RET* <0	2,351	399	7,043	2,172	24,178	22,971

This table presents estimates from the same sub-sample OLS regressions described in Table 3, with the addition of interaction terms between each regression variable and *DEC_NFL*. *DEC_NFL* is the scaled decile ranking of *NFL*. We sort all observations in the full sample into deciles by fiscal year. Decile ranks are then scaled to have a mean of zero and range of one. All other variables are defined in Appendix A.2. Panel A reports the estimated coefficients and adjusted R^2 from estimating regression (3) on each sub-sample. The dependent measure in these regressions is *EPAT*. Panel B presents results from regressing earnings (*X/P*) on returns (*RET*) for each sub-sample. *t*-statistics reported in parenthesis are calculated using two-way clustered standard errors, clustered by firm and year. *, ** and *** indicate (two-tailed) significance at the 10 percent, 5 percent and 1 percent levels respectively.

Figure 1
Normalized marginal effects of changes in enterprise value on estimated *EPAT*



This figure presents the marginal effects of one standard deviation changes in enterprise value on *EPAT*. Each column plots the magnitude of the effect of a one standard deviation change in RET_{ent} or *ECF* on *EPAT* based on the estimated coefficients from regression (3) for each regression sample listed along the horizontal axis. The regression sub-samples are defined in Table 1. The height of each column is scaled by the standard deviation of *EPAT* for the corresponding sample, facilitating comparison across sub-samples. This is equivalent to normalizing all regression variables within each regression sample and plotting the (absolute) normalized coefficients. *, ** and *** indicate that the heights of the two columns for the corresponding sample are significantly different at the (two-tailed) 10 percent, 5 percent and 1 percent levels respectively, based on Wald tests of the corresponding normalized regression coefficients.