

Valuation of Canadian Income Trusts and the Controversy over Distributable Cash

Abstract

The Canadian income trust organizational structure allows operating entities to pass on free-cash flows to unit-holders in a tax-efficient manner. This paper examines whether pro forma disclosures of free cash flows, known as *distributable cash* provide useful and reliable information for valuation purposes or whether distributable cash estimates in IPO prospectuses are inflated and lead to over valuation of income trust IPOs.

We obtain a sample of business trusts that undertook initial public offerings on the Toronto Stock Exchange between 1997 and 2004 and collect, their distributable cash disclosures. We find that among the numbers reported in the IPO prospectus distributable cash is a better single period predictor of IPO date market values than either EBITDA or net income. The superiority of distributable cash as an indicator of firm value is even stronger in the post-IPO period. In contrast to similar research on U.S. real estate investment trusts (REIT's), we find that when we regress market values on distributable cash in the post IPO period, adding net income to the regression provides no incremental explanatory power. Also in the post IPO period, the valuation weights on components of distributable cash converge to a single value and completely ignore depreciation expense in favor of capital maintenance charges. Thus, distributable cash appears to be an anchor for firm value that is relevant to investors. With respect to the number's reliability, we are unable to detect any systematic bias in distributable cash or capital maintenance charges at the IPO date. In contrast to a typical corporate IPO we find no evidence of post IPO underperformance in returns among our sample of income trust IPOs. Ultimately we conclude that distributable cash is a relevant and reliable performance measure.

1. Introduction

The Toronto Stock Exchange (TSX) is home to an organizational form that is unique to Canada,—the income trust. Operating entities that are held within the shell of an income trust are able to distribute their free cash flows to investors without paying corporate taxes on earnings being distributed. While this structure exists for some individual industries in other countries, such as U.S. real estate investment trusts (Reit's), in Canada they are not limited to a single industry. Rather, in a wide range of industry sectors such as consumer discretionary, materials, and industrials income trusts enjoy preferential tax treatment¹. In Canada these non-traditional income trusts are commonly referred to as business trusts.

Income trusts have traditionally paid out large cash distributions, in excess of earnings, basing their payment amounts on a self reported and undefined measure known as *distributable cash*. Distributable cash is a free-cash-flow type measure that takes earnings before depreciation and amortization and deducts an amount for capital maintenance. The primary purpose of this paper is to provide evidence on the relevance and reliability of the voluntarily reporting of distributable cash in the IPO prospectus of business trusts. While *distributable cash* is pervasive in the prospectuses and financial reports of business trusts, until very recently it was not defined by Generally Accepted Accounting Principals (GAAP) and was therefore open to greater management manipulation than GAAP measures. Indeed, regulators and some investors have expressed concern that managers' self-interest might lead them to report distributable cash estimates that are not sustainable in the longer term.² If managers inflate distributable cash and investors are misled into thinking that the inflated numbers can be maintained

¹ On October 31, 2006 the Canadian government announced that it would phase out the preferential tax treatment enjoyed by income trusts. Existing income trusts would be allowed to continue deducting distributions for four years. But, beginning in their 2011 taxation year, they would have to start paying taxes on their earnings at the corporate tax rate. The one industry that was allowed to continue receiving preferential tax treatment was the REITs. They also announced that any new income trusts going public after October 31, 2006 would be taxed immediately.

² Distributable cash disclosures have been the subject of considerable criticism in the popular press. For example, "Investing in the Dark" by Al Rosen *Canadian Business* Vol 78, Issue 18 page 23 notes that distributable cash is poorly regulated, that income trusts have the incentive to misstate distributable cash, and that one particular area of concern is the failure to forecast adequate capital maintenance charges.

indefinitely this can lead to inflated equity values. However, if trust managers use their discretion to reveal value relevant information, distributable cash has the capacity to convey superior valuation information, beyond that of GAAP measures such as net income. We investigate this tension at the initial public offering (IPO) date when incentives to overstate *distributable cash* are greatest..

We establish evidence on the relevance and reliability and general valuation consequences of *distributable cash* in a series of steps. A natural first step in our study is to investigate whether the information reflected in distributable cash is used by the investing public to value income trusts. In our first set of valuation tests we examine the relative ability of three different performance measures, distributable cash, net income, and earnings before interest, depreciation and taxes (EBITDA), to explain income trust market values. This question is explored both with respect to the initial trading value of the income trust (measured at the end of the first trading day) and at the end of each fiscal year following the date of the IPO. Specifically, we regress market value on the IPO date (or in the years following the IPO) on the distributable cash forecast in the IPO prospectus (or the realized post-IPO distributable cash) and compare explanatory power of these regressions to models that include our two alternative summary performance measures. The tests go on to examine whether and which components of the various summary measures add incremental information to the valuation regressions.

At the date of the IPO, we find *distributable cash* explains IPO market values better than net income and EBITDA reported in the prospectus. After the IPO, the superiority of distributable cash over the other two metrics is even stronger. These findings are consistent with managerial discretion over the disclosed numbers improving rather than degrading shareholders' ability to forecast future cash flows. Increased valuation weights imply increased reliance on distributable cash numbers following the IPO.

Although we find that distributable cash is the best single period performance measure, adding net income or EBITDA to a regression of IPO value on distributable cash increases the adjusted R^2 . This can occur when components of distributable cash have differential persistence, or biases, and therefore take on differential valuation weights. This is indeed the case. In IPO date multiple regression models, components that reconcile distributable cash to net income take-on statistically reliable coefficients that

differ among components. These results change as we move to the post-IPO years. In the post-IPO regressions the coefficients on the components of distributable cash are larger and are all very similar in magnitude. Similarly, post-IPO, *distributable cash* is treated by the market as a stronger signal of firm value, and additional performance measures add very little to the regression model. These results suggest that, when investors value income trust stocks, they do not place differential weights on the individual components of distributable cash. Of course this conclusion depends on our assumption regarding post-IPO market efficiency. In this paper we assume, even if investors were originally misled by the numbers disclosed in the prospectus, once the income trust has been listed for more than a year, investors have learnt enough through other sources to make an unbiased prediction of future cash flows.

Our second set of tests examines whether income trusts over-state their forecasts of distributable cash in the IPO year relative to what they are able to achieve in later years. Prior research on U.S. firms going public through an IPO finds that managers tend to increase earnings by overstating accruals (Teoh et al. 1998a, b). In contrast to such research, when we compare distributable cash forecasted in the IPO prospectus to its ex-post realizations, we find no evidence of an upward bias in the prospectus disclosure. Similarly, we compare forecasted capital maintenance charges in the prospectus to post-IPO capital maintenance realizations, and find no evidence of under-stating capital maintenance forecasts in order to overstate distributable cash. It is possible that after the IPO managers continue to understate the portion of their capital expenditures that are for capital maintenance. When we compare capital maintenance forecasted in the prospectus to post-IPO total capital spending³ and post-IPO depreciation, we find the number in the prospectus is significantly less than either of these measures. However this is not surprising as total capital spending and depreciation expense are both likely to overstate the amount of capital spending required in order to maintain the asset base.

The valuation tests above establish that the market perceives distributable cash figures to be more informative about firm value than other performance measures, such as earnings and EBITDA. This holds at both the IPO date and in the aftermarket following the IPO. However, this result does not

³ Note that total capital spending is the sum of capital maintenance expenditure and new investments for growth.

shed light on whether the market interprets the distributable cash figures in the prospectus *correctly* when setting stock prices, in light of the potential for bias. As a further test to see if unit holders over value reported distributable cash estimates at the IPO date we look for evidence of underperformance by income trust stocks over the three years following the IPO date. Over this three year period the average market adjusted return is negative, but it is not significantly different from zero. Where US corporate IPOs tend to be under priced as issue and tend to underperform in the aftermarket⁴, Canadian income trust IPOs tend to be correctly priced at issue and do not underperform in the aftermarket.

Our results contribute to the accounting literature on voluntary disclosure. The trade-off between relevance and reliability (i.e., the cost and benefit of allowing managerial discretion in financial reporting) is at the core to many debates on accounting rules, such as the recent trend to fair value accounting. Thus, the inferences learnt from this paper extend beyond the current business trust setting. The distributable cash estimate reported in the IPO prospectus is a form of pro-forma disclosure. Therefore, our study contributes to the literature on the valuation consequences of pro-forma earnings.⁵ That literature establishes that pro-forma earnings surprises are more informative with respect to stock returns than is bottom-line net income. However, as argued in Berger [2005] and Easton [2003], establishing whether pro-forma numbers are “informing” or “misleading” investors is tricky. Our study differs from the pro-forma earnings studies along a number of dimensions. The most important one is that the firms we study all undertake an initial public offering (IPO). At the IPO date incentives to manipulate *distributable cash* are much higher than for the seasoned firm because owners who plan to liquidate their ownership interest in the IPO will benefit directly from overstating *distributable cash* to increase the offer price and because the information asymmetry is likely to be higher before the company becomes publicly listed. Therefore our study extends the pro-forma earnings analysis to the IPO setting.

⁴ Ritter (1991) reports significant underperformance over the three years following the IPO date..

⁵ This literature is large and includes studies by Battacharya, Black Christensen and Larson [2003], Lougee and Marquart [2004], Bradshaw and Sloan [2002], Brown and Sivakumar [2003] and Doyle, Lundholm and Soliman [2003] and Johnson and Schwartz [2005], among others.

Our study differs from the pro-forma earnings studies because pro-forma distributable cash is more directly linked to forecasting future cash pay-outs, than forecasting future earnings. In this sense, our paper is more directly related to a set of studies that examine the valuation consequences and reliability of U.S. real estate investment trusts (REITs) that report a non-GAAP cash flow measure, *funds from operations* in their financial statements (e.g., Vincent [1999], Fields, Rangan and Thiagarajan [1998], and Gore and Stott [1998]). These studies show that *funds from operations* does not outperform GAAP net income at explaining REIT stock value. Their results are somewhat surprising given the anecdotal evidence that sophisticated users, such as financial analysts, forecast funds from operations in lieu of net income. More recent work by Baik, Billings and Morton [2008] finds that unexpected *funds from operations* performs better than unexpected net income at explaining stock returns. They attribute their different results to industry-level regulation that standardized the definition of funds from operations across REITs. Our income trust valuation results are more consistent with this later REIT result than with the earlier studies that found *funds from operations* was not incrementally informative.

While Canadian income trusts are flow-through entities that are similar to U.S. REITs, they represent a larger fraction of the Canadian stock market than REITs do in the U.S. stock market. More importantly, Canadian income trusts cover a more diverse set of businesses, and the Canadian disclosure rules are not as rule-bound as in the U.S. The broader range of firms and the lack of regulation on the definition of *distributable cash*, have likely created more opportunity for managers to use distributable cash disclosures to their own advantage. On the other hand, the heterogeneity of business trusts relative to REITs creates a demand by investors for more relevant information. Thus, we have no strong reason to expect that results in our setting will be the same as in prior research.

The remainder of this paper is organized as follows. In the next section we provide an overview of the income trusts, and the role that distributable cash can play in valuing these structures. In this section we also present our hypotheses and research method. Section 3 describes our sample and presents the distribution of data that will be used in our tests. Section 4 provides a discussion of our results. Section 5 concludes our paper.

2. Background and Hypotheses

In this section we provide an overview of income trusts, we explain the theoretical basis for expecting a valuation link between distributable cash and equity value and we develop our hypotheses. In particular, we lay-out the assumptions necessary for distributable cash to provide a superior valuation measure relative to pre-tax net income or EBITDA.

2.1 Overview of Income Trusts

Income trust structures are designed to allow an operating entity to distribute cash flows to investors in a tax-efficient manner. To do this, a trust, held by a set of disperse unit-holders, acquires equity ownership and holds non arms-length subordinated debt in an operating entity. (See Figure 1 for the typical income trust structure.) The interest rate on the subordinated debt is selected to reduce the operating entity's income to zero. The interest revenue, dividends, and any return of capital flow from the operating company to the trust tax free provided they are distributed to unit-holders. The unit-holders in turn are responsible for paying taxes on their income at their prevailing marginal tax rates.⁶

An operating entity that intends to pay dividends can make its owners better off by choosing the trust structure over a corporate form. The operating income of a corporate operating entity does not enjoy the subordinated debt tax shield available to income trusts and must pay tax on its income at the corporate rate. When the entity declares dividends, individual shareholders pay taxes on dividends at their individual tax rates.⁷ All else equal, for operating entities that intend to pay dividends, the trust structure should dominate the corporate structure due to the avoidance of double taxes.

The trust structure offers substantial tax benefits to businesses that intend to pay large dividends. In general investors tend to prefer a steady stream of dividends, therefore the income trust structure is likely to be more attractive to larger operating entities that have stable cash flows and that do not require

⁶ A payment classified as a return of capital is not taxable to the individual unit-holders.

⁷ Canadian tax authorities offset this double tax by granting personal tax credits which are linked to the initial taxes paid by the corporation. However, this offset is imperfect, allowing some of the income of corporations to be exposed to a double tax.

large investing outlays. Such firms have the ability to make stable dividend payments, without resorting to outside borrowing and incurring transactions costs, when cash flows fall short. Thus firms in cyclical industries would be less likely to choose to operate as income trusts, since for these firms to pay steady dividends, they would have to hold onto some of their earnings during good times (and pay corporate tax) to avoid having to borrow to pay dividends in poorer times. Similarly, growth firms with positive net present value investing options, prefer to use internally generated cash for new investments. Paying dividends and then obtaining cash from external capital markets is not as attractive for these companies as it involves substantial transactions costs.⁸

The implicit commitment to maintain high pay-outs to unit-holders puts income trusts in a similar situation to leverage buy-out firms that take on additional debt to shield profits from taxes. However, in the income trust case, the same party owns both the debt and equity of the operating company.⁹ There is some debate as to whether the commitment to pay-out cash flows *per se* creates or destroys value. On the one hand, the commitment to pay-out excess free cash flows each period to unit-holders disciplines managers' natural tendency to waste slack resources (Jensen [1986]). On the other hand the popular press has expressed concern that the pay-out commitment of some trusts could be too large, and sticky, straining financial resources when cash flows are low. To the extent that trust organizations find it difficult to alter established pay-out policies, excessive pay-outs could lead to under-investing or dilutionary secondary offerings. Thus, the value-creating potential of the trust pay-out commitment depends both on the stickiness of the commitment and on whether cash flows are sustainable or not.

By 2006, trusts represented approximately 10% of the Toronto Stock exchange. However, their popularity as a business form, ironically led to their demise. When the Canadian Government announced

⁸ Growth firms must offer new equity, and to a lesser degree, debt, at a discount because of informational asymmetries. According to Myers and Majluf[1987] these firms find internal financing to be less expensive than external financing.

⁹ Halpern and Norli [2006] suggest that pay-out policies of Canadian business trusts should be relatively flexible, because the trust holders hold both the debt and equity of the operating entity, their interests are aligned. This makes it easier for the operating entity to renegotiate a reduction in interest payments if cash is not available. In a leveraged buy-out transaction, the debt holders are different parties than the equity holders. Thus a cash strapped leveraged buy-out firm is more likely to be declared bankrupt if there are cash shortages.

on October 31, 2006 that new income trusts would henceforth be subject to taxation as corporations, and that existing trusts would retain their tax advantages for only four more years the primary reason given for the change was that the government could not afford further decreases in tax revenues.¹⁰

2.2 Valuation of Income Trusts and Distributable Cash

The previous section argues that the trust structure should be attractive to operating entities that both expect to generate stable cash flows and, at the same time, require little in the way of new financing for growth. This section discusses the reasons that such firms might choose to disclose *distributable cash* to support the valuation efforts by potential investors.

Income trust units are traded like the common equity of a corporation. Unit-holders receive distributions (dividends) and are the residual claimants on the trust cash flows. Their valuation then should follow the basic principles of equity valuation. If income trusts are expected to generate reasonably steady and sustainable dividends, the Gordon Growth model should provide a reasonable estimate of value in this context. The Gordon growth model assumes that all expected dividend flows are determined at a steady growth rate over dividends in the previous period (i.e., $D_{i,t+1} = D_{i,t} \times [1+g]$ ¹¹ where $D_{i,t}$ is expected dividends for security i and g is a one period growth rate. Under these simplifying assumptions, the Gordon Growth Model expresses firm value as follows:

$$V_{i,t} = \frac{D_{i,t} \times (1+g)}{r_i - g},$$

where r_i is the one period discount rate used to discount dividends to security i .

The above formula is not specific about how cash flows are defined. Income trusts promise investors a steady stream of dividends and so the valuation formula, assuming steady growth, can be applied to their expected dividend policy. Alternatively, the formula can be applied to free cash flows (operating cash flows less investing and financing cash flows) which represent the fundamental source of

¹⁰ The announcement came as two very large Canadian corporations, Telus and BCE Inc had announced their intention to convert from the corporate form to the trust form.

¹¹ In the Gordon growth model, growth can be positive, negative or zero. If current cash flows likely to persist growth is zero, if they are expected to decline then growth would be negative.

dividends. In growth, or cyclical, firms free cash flows typically exhibit more variability than the dividend stream. However, as discussed above, operating entities that chose to become income trusts typically are expecting a steady stream of free cash flows they plan to distribute as dividends. Yet, investors using the historical financial statements might find it difficult to estimate the initial cash flow or dividend that anchors this valuation approach. Hence disclosures in the IPO prospectus are likely to be designed to help reduce uncertainty among potential investors regarding initial cash flows.

To obtain a free cash flow estimate for a business trust, that would be appropriate to use in a Gordon Growth Model, requires an estimate of the persistent component of operating cash flows net of on-going investing cash flows and cash flows to debt holders external to the trust, as follows:

Cash Revenues	(These can be based on historical results, adjusted
- Cash Expenses	to remove non-persistent items and to include pro-
= Operating Cash Flows	forma items that are expected to apply in the future
<hr/>	
- Capital Expenditures	(as required to support the growth assumption)
+/- Financing Cash Flows	(- interest - debt repayment + new issues)
= Free Cash Flows to Unit Holders	

Note that operating cash flows as defined under GAAP are different from “Operating Cash Flow” above. The GAAP definition is after cash interest paid, and includes transitory cash items.

Casual observation of distributable cash measures in IPO prospectuses suggests they are measured in a manner consistent with expected free cash flows defined above. See Figure 2 for an explanation of how distributable cash is typically constructed. The prospectus disclosure to pro-forma distributable cash typically begins with a historical performance measure such as EBITDA¹². Estimated costs (e.g. pro-forma interest, taxes and administrative costs) associated with the new operating structure are deducted.¹³ From this, the company deducts an estimate of capital expenditures required to maintain the assets.

¹² EBITDA is often adjusted to remove one time items and one time accruals. For example, items incorporated in net income like goodwill impairment, gains/losses on the disposal of assets and foreign exchange gains and losses are often removed.

¹³ This interim amount is similar to expected cash flows from operations to be reported in the statement of cash flows. However, as firms seldom adjust for changes in working capital, the figure is closer to cash flows from operations before changes in working capital.

Appendix A provides details on the calculation of distributable cash in the IPO prospectuses of six trusts in our sample.¹⁴

Provided managerial adjustments and estimates are reliable, we expect distributable cash to outperform other valuation anchors such as net income and EBITDA because it includes pro-forma adjustments and a specific estimate of capital maintenance (rather than depreciation expense in the case of net income and no capital maintenance in the case of EBITDA). Thus, distributable cash is closer to expected free cash flows than net income or EBITDA. Our first hypothesis then is as follows:

Hypothesis 1: In valuation models that allow just one performance metric, the explanatory power of distributable cash will exceed that of pre-tax net income or EBITDA.

Despite our hypothesis that distributable cash should be superior as a performance metric, the tests of this hypothesis could yield opposite results. The superiority of distributable cash depends on the reliability of the adjustments managers choose to make. Managerial discretion is likely to be influenced by the self-interest of managers. Since owner-managers are at least partially liquidating their interests in an IPO, they have an incentive to inflate the valuation metrics they expect investors to use for valuation, reducing the reliability of the numbers reported. Net income must comply with GAAP, while distributable cash and EBITDA are both defined by the reporting entity. If investors are concerned that managers' discretion over these non-GAAP numbers makes the figures unreliable, then they may prefer to anchor their valuations on net income.¹⁵ However, if they perceive the discretionary adjustments in calculating distributable cash are relevant then they will place more weight on this measure. EBITDA is an interim measure before deducting interest, taxes, capital maintenance and most of the managerial

¹⁴ Regulation of distributable cash disclosures has increased over time, but it is still less stringent than the industry and SOX-imposed regulations facing flow-through entities in the U.S. In January 2002, the Canadian Securities Administrators issued a general guidance on disclosure of non-GAAP pro-forma numbers which recommended reconciliation of pro-forma figures to GAAP measures. On October 24, 2003, they issued a "Proposed National Policy" on prospectus disclosure requirements for income trusts that reminded income trusts to refer to the earlier, 2002 guidance. The national policy guidance was approved in December 2004, and was updated in July 2007. A notable difference between the legislation in Canada with respect to business trusts and that developed by the trade associations in the U.S. for Reit's is that the U.S. guidance lists more specifically how Reit's should calculate funds from operations (i.e., what items should be included or excluded) whereas the regulation in Canada only goes so far as to require a reconciliation to GAAP, but does not require comparability across firms.

¹⁵ While net income must follow GAAP, is also be subject to managerial discretionary, but the amount of discretion available is less.

adjustments (which convert EBITDA into a free cash flow measure). Therefore, provided these items are reasonable, distributable cash is likely to be superior to EBITDA in explaining firm value.

The literature that is most directly tied to this paper, the U.S. Reit literature, compares a distributable cash-like performance measure (funds from operations) to other performance measures that are similar to ours.¹⁶ Thus, the comparison among these measures enhances the comparability of our study to others. However, our study extends these studies by also examining the valuation relation at the IPO date, when incentives to overstate the cash flow forecast are stronger due to the large amount to equity being sold. We test Hypothesis 1 using three simple regressions of the market value of the income trust (measured either at the IPO date or at annual reporting dates subsequent to the IPO) separately on distributable cash, net income, and EBITDA. When the IPO date is used, the performance measures are collected from the IPO prospectus, and are known by participants in the IPO. For the IPO date net income regression we use net income before tax, because conversion to an income trust will eliminate the majority of income taxes. When post-IPO market values are used, the performance measures are gathered from annual reports and Compustat. As both distributable cash and EBITDA are self-reported by management they are not defined consistently across firms or across time.¹⁷

In additional tests, we examine the incremental information provided by each of our performance measures in a multiple regression. For example, we investigate whether net income takes on a statistically significant coefficient when it is added to a regression of market value on distributable cash. Since net income includes some accruals (such as depreciation expense) that distributable cash does not include, a statistically significant coefficient suggests that the distributable cash is an incomplete measure for forecasting future cash flows.

¹⁶ Fields et al. [1998] compares the power of net income and funds from operations to explain firm valuations. Their model includes book value of equity and dividends as additional explanatory variables in the regressions. Vincent [1998] compares the single measure explanatory power of net income, funds from operations, operating cash flows and EBITDA. In both cases, the authors find that net income tends to dominate the other measures.

¹⁷ We are aware of one paper by Cormier and Lapointe-Antunes [2006] that examines the valuation properties of distributable cash and its components. The research design differs sufficiently that our two papers are likely to be complementary. That paper links valuation to a decomposition that includes, book value of equity, EBITDA and discretionary accruals.

To investigate why distributable cash has higher or lower explanatory power than net income or EBITDA, we regress market value on components that reconcile one valuation metric to another:

$$MV_{IPO(Exp)} = \alpha_0 + \alpha_1 Net\ Income + \alpha_2 CapMain + \alpha_3 OtherDistr + \alpha_4 Adjustment_1, \quad (1)$$

$$MV_{IPO(Exp)} = \beta_0 + \beta_1 EBITDA + \beta_2 InterestExp + \beta_3 CapMain + \beta_4 OtherDistr + \beta_5 Adjustment_2, \quad (2)$$

where *Adjustment_1* and *Adjustment_2* are calculated as,

$$Adjustment_1 = DistriCash - Net\ Income + CapMain + OtherDistr, \text{ and}$$

$$Adjustment_2 = DistriCash - EBITDA + InterestExp + CapMain + OtherDistr.$$

Other terms are defined as follows (all variables are scaled by revenues):

- MV_{IPO(Exp)}* = the ending price at the initial public offering date (subscript *IPO*) or in periods following the IPO (subscript *Exp* for ex-post) times the number of units outstanding;
- DistriCash* = distributable cash for unitholders disclosed in the offering prospectus;
- Net Income* = pre-tax net income reported in the initial public offering prospectus, or after-tax net income before minority interest in post-IPO annual reports;
- CapMain* = capital maintenance expenditures included in the calculation of distributable cash;
- InterestExp* = Anticipated interest expense on outside debt reported in the IPO prospectus or actual interest expense in the post-IPO annual report;
- OtherDistr* = distributions to claimants other than the unitholders included in distributable cash calculations.

Equation 1 takes the view that distributable cash can be built up from pre-tax net income¹⁸. If adjustments made in calculating distributable cash from net income introduce noise without substantially increasing the value relevance, then distributable cash will have lower information content and the coefficients on these adjustments are expected to be zero; adding a value relevant summary measure (Income) and a noise term then would lead to a less informative summary measure (Distributable Cash). However, if the adjustments are value relevant, either reducing the noise in net income, or introducing more value relevant information, distributable cash will be more informative. In this case, the components will have significant coefficients. Similar logic applies to equation 2, where distributable cash is built up from EBITDA.

¹⁸ See Figure 2 for the steps in the reconciliation.

In Equation 1, α_2 should measure the full valuation consequences of the forecasting of capital maintenance expenditures, and we would predict this coefficient to be negative.¹⁹ Likewise, α_3 measures the valuation consequences of payments to claimants not participating in distributable cash distributions (these are interest-like payments.) The sign of this term is predicted to be negative, and the magnitude should reflect the persistence of these payments. The prediction for α_4 is less unclear. *Adjustment_1* contains the cash flow associated with adding back depreciation. This cash flow is likely to be very persistent, provided that capital maintenance is sufficient to sustain the cash flow stream. Net income has been reduced by depreciation. If the deduction of depreciation is not required to maintain the cash-flow generating ability of the business, α_4 is likely to be positive and approximately the same size as the coefficient on net income. In the IPO year, *Adjustment_1* also contains the negative cash flow affect of permanent incremental expenses that are expected under the new trust structure. For these items, the coefficient should also be positive, with its magnitude determined by the expected persistence of these expenses. Depreciation expense is not available in the IPO prospectus, but can be directly observed in the annual report. Therefore, post-IPO we are able to examine its valuation weight by removing depreciation from *Adjustment_1* and including it as a separate variable in Equation 1.

Since EBITDA is not reduced by capital maintenance or interest charges, we predict a negative coefficient on these two components of distributable cash in Equation 2. *Adjustment_2* contains a mix of transitory components of distributable cash that were not adjusted for in EBITDA, and other adjustments that reflect additional costs associated with the new business form. We make no prediction as to the sign and significance of its coefficient.

2.3 Investigation of Bias in Distributable Cash Figures

As discussed above, investors and regulators have expressed concerns that distributable cash reported by trusts overstate sustainable cash flows. An income trust IPO provides a means for the

¹⁹ Capital maintenance expenditures are unlikely to represent positive net present value investing. Instead these are essentially an on-going cost of sales and the benefits of these expenses are captured in current revenues which in turn are captured in pre-tax net income.

original private owners of the operating entity to cash-out some of their equity. Prior corporate IPO studies have hypothesized that the IPO offers a unique chance to examine a setting where there are strong incentives to over-state the forecasts of valuation metrics. Since distributable cash is not a GAAP measure and is not subject to auditors' scrutiny, the opportunity to bias distributable cash is even larger. Therefore our second hypothesis is as follows:

Hypothesis 2: Forecasts of distributable cash and components of distributable cash in the IPO prospectus will over-state the performance of the operating entity that is realized in the post-IPO period.

The research method collects distributable cash information and forecasts of capital maintenance charges from the IPO prospectus and compares them to the same information in the post-IPO years. To look for biases in distributable cash, we use two different scalars, trust units outstanding and sales, and we look to see whether means and medians are less in the three years following the IPO. Income trusts typically communicate distributable cash on a per unit basis, so this is the number unit holders tend to focus on when evaluating the unit price. Total distributable cash of some trusts may grow in the post-IPO period due to further asset acquisitions funded by selling additional units. This type of growth in distributable cash is unlikely to accrue to the original unitholders because it must be shared with the new units. By examining distributable cash per unit and distributable cash scaled by sales we hope to control for this type of growth.

Capital maintenance is an important deduction in the determination of distributable cash. This number directly reduces reported distributable cash and it is subject to managerial discretion. As such, we also investigate whether capital maintenance reported in IPO prospectus understates long-term capital maintenance requirements. Again to control for growth, we use capital maintenance scaled by revenues.

In the case of scaled distributable cash, we simply compare the figure from the prospectus to the scaled post-IPO figure, where the post-IPO measures are averaged (using a constant sample) over the three year post-IPO period. Post-IPO capital maintenance is measured in a similar manner and examined to see if it is larger than in the prospectus.

We consider two further benchmarks for capital maintenance. We collect capital expenditures from Compustat (data item 14) in the years following the IPO and examine whether these are higher than forecasted capital maintenance in the IPO prospectus. We also compare capital maintenance expenditures to depreciation expense. Depreciation represents an allocation of the original cost of the assets over its estimated useful life. If the estimates used in calculating depreciation reflect the rate at which the asset is being consumed in production over the long term, then (without regard to inflation,) it can be an indication of long term capital maintenance requirements. If in addition the replacement cost of the asset is unlikely to decline, then depreciation should provide a lower bound on long term capital maintenance requirements. Of course, depreciation can be overstated, particularly for very long lived assets. For example, buildings are typically depreciated over 40 years or less, but this kind of asset may have a longer useful life than the one used in setting the depreciation rate. Subject to this limitation, we evaluate capital maintenance relative to depreciation expense. While ideally we would like to compare capital maintenance and depreciation both from the same pre-IPO period. However, as mentioned this is not possible because depreciation is not consistently reported in the prospectus. So we must instead rely on post-IPO depreciation. All variables other than distributable cash per unit are scaled by sales.

The foregoing tests provide evidence about bias on-average, and rely on accepted wisdom that IPO firms have the incentive to overstate performance. When pre-IPO owners continue to hold major shares in the operating entity following the IPO, there is less incentive to overstate performance at the IPO. Ball and Shivakumar [2006] argue for the case that firms going public have incentives to form reputations for conservative, rather than aggressive reporting. If there are cross-sectional differences in incentives, the on-average bias can give a misleading impression of the existence of bias. We therefore investigate whether the average bias we measure is influenced by managers' retained ownership.²⁰

Hypothesis 3: Distributable cash forecasts (capital maintenance forecasts) will be less overstated (understated) the greater is the ownership retained by original shareholders.

²⁰ For over three-fourths of the income trusts in our sample, the original owners retain some equity interest in the post IPO operating company and their retained ownership is on average of 31% of equity. Darrough and Rangan (2005) and Fan (2007) relate the earnings management at the IPO date to ownership, similar to this study.

The test of this hypothesis will partition the sample based on high versus low retained ownership and will compare the central tendency of bias across the sub-samples.

2.4 A Joint Test for Bias in Distributable Cash Forecasts

In the previous section we provide a rationale for examining the difference between the amount of forecasted capital maintenance in the prospectus and average post-IPO depreciation expense as a test for downward bias in capital maintenance and a resultant upward bias in distributable cash reported in the prospectus. In this section, we use this proposed relation to develop a cross-sectional valuation test for bias. We use the ratio of prospectus date capital maintenance to actual depreciation expense reported for the first full year following the IPO date²¹ as an indicator of cross-sectional bias in capital maintenance and investigate whether this indicator is priced by the market, both at the IPO date and in the aftermarket.

If depreciation expense can be viewed as a reasonable indicator of the amount of capital required to maintain operating cash flows in perpetuity, then firms with lower levels of capital maintenance to depreciation currently will either have to spend more on capital maintenance in the future or they will start to see their operating cash flows (and distributable cash) decline in the future. Either way, the distributable cash figure in the prospectus will not be sustainable in the future and as a result the market should put a less weight on the distributable cash of such firms. We therefore propose the following hypothesis as a joint test of bias in capital maintenance and market efficiency:

Hypothesis 4: *The coefficient on distributable cash in the valuation regression will vary positively with the ratio of capital maintenance expenditures to depreciation expense.*

If business trust market values do not place a higher weight on distributable cash when capital maintenance is higher (relative to depreciation expense), then either the depreciation expense is not a useful measure of long term capital maintenance, or the market is being fooled by the distributable cash

²¹ Ideally we would like to estimate bias using a reliable measure of depreciation expense, from the IPO prospectus, and relate it to capital maintenance projections in the prospectus. However, as mentioned earlier, depreciation expense is often not reported in the prospectus. Therefore, we instead use actual depreciation expense reported once the income trust has been operating, as our measure on depreciation. For valuation regressions at the IPO date we are assuming that, when depreciation is not available in the prospectus, investors use capital asset information in the prospectus to estimate the depreciation expense number.

number reported and is not incorporating an adequate estimate of long term capital maintenance into valuations. Since the depreciation expense figure we use is not available at the IPO date, it is possible that investors are unaware of distributable cash bias, relative to long term capital maintenance requirements, at the IPO date. As a result, we also investigate the impact of this ratio on the valuation weight of distributable cash in the three years following the IPO.

3. Sample Description

In June 2006 we downloaded all income trusts that were listed on the Toronto Stock exchange.²² We eliminated Reit's, Resource, and Energy income trusts from this set, to come with a list of 134 business trusts. We were able to find distributable cash in prospectuses, and to match to Compustat (for financial information) and to CFMRC (for stock price and returns), for fifty-six of these trusts, as shown in Table 1 Panel A.²³ This sample is further reduced due to missing data on Compustat or from the prospectuses. For IPO year analyses, the sample ranges from forty-five observations to thirty-nine observations, depending on the specification. A primary reason for the reduction in sample size is the dropping of five royalty trusts from the analysis which lack comparable sales figures, which are used to deflate all financial information numbers. For the analysis using post-IPO data, the sample grows since we have multiple years for some of the firm. Panel B of Table 1 shows that post-IPO analysis uses as many as 150 observations and as few as 97 observations, depending on specification.

Distributable cash data were hand-collected from IPO prospectuses and from annual reports. Appendix A contains some excerpts of distributable cash disclosures that are made in the IPO Prospectus. These disclosures exhibit substantial variation across firms. Wherever possible, we coded

²² Go to www.tsx.com.

²³ Some of the original 134 income trusts achieved their structure by converting from the corporate form to the trust form. The information environment and the usefulness of distributable cash, as well as managers incentives, are dramatically different from those for trust IPOs. We exclude conversions in the analyses, except in post-IPO valuation tests, to maintain the homogeneity of the sample.

the distributable cash figure, as well as its components that would allow us to reconcile our figure to more primitive performance measures, particularly net income and EBITDA.²⁴

We also had to attend to a number of details that would potentially confound our analysis. The fiscal period could be shorter than one year. If this occurs in the prospectus the data is annualized. In the post IPO valuation analysis we exclude observations with partial years. We measure revenues net income, EBITDA and adjustment components for the entire operating company and then scale these measures based on the income trust's share in the equity of the operating company. Accounting measures are therefore adjusted to apply to the same claimants as distributable cash is reported for. We collected the following items, when available, from the IPO prospectus, from Compustat or from the annual report: net income, EBITDA, distributable cash, capital maintenance charges, interest expense expected on external debt, distributions to parties other than unit holders, and revenues. Depreciation expense is data item 14 from Compustat, which unfortunately does no separate depreciation of PPE from amortization of intangible assets and therefore overstates depreciation of tangible assets.

Table 2, Panel A reports descriptive information for the IPO-year regression models. The average proceeds for our IPO sample are \$162.7 million CAD, and range from a low of \$31 million to almost \$ 1 billion. Proceeds are on average (median) 2.3 (1.3) times revenues. For the most part, these firms are profitable on a pre-tax basis, with an average (median) pre-tax return on revenues of 21% (8.4%). Median pro-forma EBITDA is approximately 18.9% of revenues. Comparing this to the median pretax net income indicates that depreciation and interest (included in EBITDA, but not in pre-tax net income) are approximately 10% of revenues. Median distributable cash is 14.9% of revenues, which is after deducting capital maintenance charges that comprise approximately 1.7% (median) of revenues. Median Adjustment_1, which in part captures depreciation expense, is approximately 5.8% of revenues. Finally, Adjustment_2 which captures non-depreciation adjustments, is very close to zero on average.

²⁴ As discussed earlier, we use pre-tax net income for IPO year analysis. However, for simplicity we refer to it as "net income" in the remainder of the paper. Also distributable cash reported in the prospectus is a pro-forma expected number. However, we drop the "pro-forma" in the discussions that follow.

Table 2 Panel B reports the distribution of these same variables in the post-IPO years. The income trusts exhibit growth in revenues and market values from the IPO date. For example at the IPO date median revenues are \$114.7 million; in the post-IPO period these are \$174.3 million. However, distributable cash as a percentage of revenues remains almost constant, at approximately 14.7% (median). The trusts continue to be profitable post-IPO period with mean (median) net income scaled by revenue of 9.1% (8.0%). Note that in the post-IPO period net income is defined after-tax, but before minority interest share of net income. While distributable cash is always positive, the net income distribution reveals that there are some unprofitable trusts in the post-IPO period. Median capital maintenance charges as a fraction of revenues are almost the same as in the prospectus. The means and medians of Adjustment_1 and Adjustment_2 in the post-IPO period are similar to those observed in the IPO prospectuses. In the post IPO period we are able to calculate the market to book ratio for these firms (because we have a measure of the book value of equity from Compustat). The mean (median) indicates that income trusts traded at 2.1 (1.4) times book value during the post IPO period.

3.1 Price Setting in the IPO

U.S. corporate IPO's are typically issued for a price that is on average 16-18% below its trading price at the end of the first day of trading (Ritter 1998 and 2002). Jog and Wang [2002] report Canadian corporate IPOs are underpriced by an average of 12%. However, a recent article by the same authors finds very little under-pricing of Canadian income trusts (Jog and Wang [2004]. In Table 3 we replicate Jog and Wang's analysis for our sample of firms. One difference between the sample used in this study and the sample their sample is that the current study only includes business trusts, whereas the former paper also includes Reit's and resource trusts, which may have more stable cash flows.

Table 3 documents the first day return for our business trust sample. The table indicates that there is statistically significant, but economically small, underpricing. The mean (median) first day raw return is 2.1% (0.9%) and these differ from zero at the 1% level). These results are robust to adjustments for

market returns.²⁵ The magnitude of the results are roughly consistent with those of Jog and Wang [2004] who document underpricing of 2.04% for a larger sample of income trust IPOs between 1997 and 2003 (they do not report significance levels.) Consistent with Jog and Wang [2004] we interpret the results in Table 3 as supporting low information asymmetry at the time of offering. It is possible that prominent disclosure of measures such as distributable cash help to reduce information asymmetry.

4. Results

4.1 Value relevance of distributable cash: Tests of H1

Table 4 reports the results of regressing income trust market values on three candidate summary measures of performance: net income, distributable cash, and EBITDA. In panel A we report the regression results and panel B reports our formal tests of Hypothesis 1, that distributable cash explains more variation in the market values than the other two summary measures. In each panel, we first report results at the IPO date (first three columns) and then results for the post-IPO dates (final three columns.)

Panel A shows that, whichever period we analyze, the explanatory power is highest for distributable cash and is lowest for net income. EBITDA, being the middle step in arriving at distributable cash from net income, has explanatory power in between.²⁶ For example, distributable cash explains 82.4% of the variation in market value in the post-IPO period, while EBITDA and net income explain 69.8% and 29.5 % respectively. Panel B explicitly tests if the differences in R^2 's are statistically significant. This panel shows that the distributable cash regression has significantly higher R^2 's than net income or EBITDA at both the IPO date and post-IPO and that EBITDA outperforms net income at both dates. These findings support our hypothesis that distributable cash is the most informative, single-period valuation metric that we've considered. The results are intriguing in the sense that the two

²⁵ Ling and Ryngaert [1997] find small but statistically significant underpricing of a median 1.16% for a sample of U.S. Reit's.

²⁶ The results regarding the information contained in the post-IPO sample for EBITDA are essentially the same if we substitute an estimate of EBITDA based on Compustat reported net income, interest expense, income taxes, depreciation and amortization rather than relying on the trust-defined measure that is currently used in the Tables.

numbers most subject to managerial discretion, EBITDA and distributable cash, are better explanatory variables of equity value than a traditional GAAP measure, net income.

Another observation we make from Panel A is that the explanatory power of distributable cash increases in the post-IPO period. The weighting placed on distributable cash increases from 7.3 at the IPO prospectus date to 11.8 in the subsequent years. This is consistent with investor confidence in the distributable cash figures increasing over time.²⁷

Table 4, Panel C investigates whether each of the summary measures contains information incremental to the others. In the first and fourth columns, we add net income measures to regressions that contain distributable cash. At the IPO date, the coefficient on net income is positive and significant (at the 1% level), but it is insignificant in the post-IPO period. Recall that net income includes a number of components that are not included in distributable cash, particularly, depreciation expense. The significance of net income in the IPO-date regression can imply that these components, which are excluded from distributable cash, are predictors of future cash flows. After the IPO however, this additional information does not increase the explanatory power, or the adjustments made by managers in calculating distributable cash subsume this information.

The second and fifth columns of Table 4, Panel C add EBITDA to a regression that includes distributable cash. The coefficient on EBITDA is positive and marginally significant whether the regression is at the IPO date or after (at the 10% levels in the two regressions.) EBITDA can be thought of as a component of distributable cash. Roughly speaking, distributable cash is equal to EBITDA minus capital maintenance, interest expenses and distributions to others. Therefore, a positive and significant coefficient on EBITDA indicates that it is more persistent than at least some of the other components of distributable cash.

While not directly related to distributable cash, for completeness, we add the net income measure to a regression of market value on EBITDA in the third and last columns of Table 4, Panel C. The R^2 's

²⁷ Lang [1991] finds that the earnings response coefficients steadily increase in the years following IPO's. He attributes this to investors Bayesian updating their estimate of the persistence of earnings as earnings are released.

are lower than in the previous two columns (which included distributable cash), again suggesting that distributable cash is a superior summary measure of future cash flows. Both net income and EBITDA take on positive and significant coefficients (at the 1% level in for all cases). This is consistent with EBITDA being more persistent than depreciation and other charges in net income, a common explanation for managers and investors relying on EBITDA.

In summary, Table 4 leads to the following conclusions. The market values income trust units as if distributable cash is a superior single performance measure, to EBITDA and net income, for forecasting future cash flows. At the IPO date the market incorporates additional information that is contained in net income and EBITDA; but in the post-IPO period only EBITDA is incrementally useful in the presence of distributable cash. Assuming an efficient market, the results suggest that the discretion used by managers in reporting EBITDA or distributable provides better measures of value than does the income measure that is tied to GAAP.

Table 5 further explores the superiority of distributable cash and the relative persistence of the components of distributable cash. Panel A is based on the reconciliation of distributable cash to net income. At the IPO date (column 1), distributable cash is pre-tax net income minus capital maintenance charges, minus other distributions, plus other adjustments (*Adjustment_1*). At the IPO date, all variables are significant at the 5% level or better. Net income and *Adjustment_1* take on coefficients that are similar in magnitude and positive (8.78 and 7.53 respectively). If the primary item contained in *Adjustment_1* is depreciation expense, then the positive coefficient suggests that investors largely reverse out the effects of depreciation contained in net income.²⁸ The negative and statistically significant coefficient on capital maintenance indicates that these charges are an important forecasting variable for investors. Capital maintenance charges are important to maintain the asset base and to ensure the sustainability of future dividend payments. Note that the coefficient on capital maintenance charges is - 4.94, and is therefore approximately half the size (in absolute magnitude) to the coefficient on net

²⁸ While we would prefer to estimate the coefficient on depreciation expense separately, we are not able to do so because it is not consistently reported in the IPO prospectus.

income. Such a result may be an indication that investors assess capital maintenance charges to be less persistent than other components of distributable cash, or equivalently, that they believe the charge is overstated. In any case, to the extent that this information would not be easily accessible by analysts in the absence of its voluntary disclosure in the prospectus or annual reports, the disclosure of distributable cash components provides valuable information to market participants.

Comparing the IPO results to those following the IPO (the next two columns in Panel A), we observe an increase in the weights applied to each component.²⁹ The coefficients on all variables, except for Other Distributions, lie (in absolute magnitudes) between 11.03 and 12.29 and are all reliably different from zero at the 1% level. The coefficient on Other Distributions also increases in absolute terms (from -6.274 at the IPO date to -8.332 after the IPO). This coefficient is less than that applied to the other components of distributable cash, suggesting that Other Distributions have relatively lower persistence or fewer entitlements to receive cash-flows.³⁰

The second column of Table 5, Panel A shows that the coefficient on Adjustment_1 has moved closer to the weight on net income (12.292 versus 11.698) relative to the IPO period (8.78 versus 7.54). This suggests that components of distributable cash are treated almost equally from a valuation perspective, following the IPO. However, there is still some question as to the appropriate interpretation, given that Adjustment_1 contains both depreciation expense and other items. Therefore, in the final column of this table we decompose distributable cash further and allow depreciation expense to take its own weight. What we see is that the coefficient on depreciation expense (12.112) is nearly identical to the coefficient on net income (12.145), indicating that depreciation expense which is subtracted out in net income, is completely reversed by the market (i.e., it takes a negative weight of -12.145 in net income, which is then offset by its positive weight of 12.112). This change in specification leaves Adjustment_1 containing the remaining reconciling items. The coefficient on this item is 11.435, which is very similar

²⁹ In the post IPO regressions we use after tax net income (because some income trusts do not pay taxes), and we add back minority interest. The add-back is important because the distributable cash figure that is reported frequently includes these distributions to equity holders that are not part of the income trust.

³⁰ Other distributions include payments to other investors in the underlying operating company. These claims on the underlying cash flows are often not identical to the claims of the trust unit holders and at times are subordinated.

to the coefficient on net income. Thus, the components contained in *Adjustment_1* are being priced in almost the same manner as net income.

Panel B is based on the reconciliation of distributable cash to EBITDA: distributable cash is EBITDA minus interest, capital maintenance and other distributions, plus other adjustments (*Adjustment_2*). At the IPO date we find that all of these variables are statistically significant (at the 1% level), but the sign on pro-forma interest expense is opposite to expectations. This is puzzling.³¹ However, EBITDA and capital maintenance charges take on positive and negative coefficients respectively, as predicted.

In the post-IPO period, (Panel B, column 2) the coefficients on EBITDA, capital maintenance, interest, and *Adjustment_2* are all statistically significant, in the predicted directions. In addition, the coefficient on EBITDA increases in magnitude and converges towards the coefficients on the other components. This pattern of increase in coefficient magnitudes and convergence is similar to what we see in Panel A. This result is consistent with the results in Table 4 which imply that the market is more confident in the persistence of distributable cash disclosed in the annual report than they are based on pro-forma distributable cash disclosed in the prospectus. Table 5 results that show different coefficients on the various components of distributable cash at the IPO date, reinforce the conclusion that investors use the components of distributable cash in their valuation decision. Whether these components are useful after the IPO is less clear given the strong convergence of coefficients toward a common weight.

4.2 Potential bias in distributable cash reported in prospectus: tests of H2

The evidence to this point suggests that distributable cash is strongly related to trust companies' market valuation. Nevertheless, distributable cash and its components could be biased, and the market may not be correcting for it. In this section, we formally test the bias in these numbers by looking at

³¹ The result is partially attributed to extreme values. The largest IPO (in terms of market value to revenues) also reports the highest interest expense to revenues, while the trust with the lowest market value to revenues has no interest expense. Deleting these two observations and winzoring interest expense yields a positive but insignificant coefficient on interest expense. It appears that interest expense may be proxying for leverage in this regression.

distributable cash and capital maintenance reported in the IPO prospectus relative to outcomes that occurred post the IPO. We predict that if owner-managers of the pre-IPO firm believe that issue price is a direct function of distributable cash, then they have an incentive to inflate distributable cash in the IPO prospectus to maximize their expected cash flow from the sale of their equity. Table 6 Panel A presents the average and median of distributable cash and capital maintenance charges reported in IPO prospectus versus their realizations in the first three years following the IPO. If distributable cash in the prospectus is inflated relative to what the trust can be expected to generate in the future then we expect to see lower distributable cash and higher capital maintenance charges following the IPO.³²

At the IPO date, distributable cash standardized by sales (and per unit) is on average 0.175 (1.098 per unit). The post-IPO average shows no indication of a significant decline. In fact, the median distributable cash per unit is significantly higher post-IPO. On this basis, we fail to find evidence that distributable cash was overstated in the IPO prospectus.

Capital maintenance charges are forecasted in the prospectus and could very well be manipulated by management. We find that at the IPO date, the average (median) capital maintenance is 2.9% (1.6%) of revenues compared to 2.6% (1.3%) in the post-IPO period. This shows no evidence of an understatement of capital maintenance in the prospectus. In fact, the results for the median indicate significantly lower capital maintenance in the Post-IPO period, the reverse of what we expected.

In assessing the validity of capital maintenance at the IPO date, it may not be sufficient to compare it with reported post-IPO capital maintenance, as these figures could also be understated relative to the long term demands for capital in order to maintain distributions. In the last two sets of rows in Table 6, we compare capital maintenance charges at the IPO date to two other potential benchmarks, depreciation expense and total capital expenditures.

Provided depreciation is not overly conservative and if replacement costs are expected to either remain constant or increase, then as discussed previously, depreciation expense can provide a lower bound on the amount long term capital investment required to maintain the capital asset base. We

³² This assumes that any bias in the first year will reverse within three years.

therefore, compare capital maintenance forecasts from the prospectus to the level of long term capital maintenance implied by depreciation expense.

Capital spending in the post-IPO period consists of two parts, capital maintenance of the existing asset structure and new capital spending for growth. In general, it is up to management to allocate total capital expenditures between these two categories. Assuming that the typical income trust candidate is not expected to invest heavily for growth, then the majority of capital spending should be for capital maintenance. If investments for growth are in fact negligible, then capital spending may all be due to capital maintenance. We therefore investigate how large post IPO capital spending is relative to capital maintenance anticipated at the IPO date. To the extent that depreciation and total capital expenditures are potentially excessive benchmarks for capital maintenance requirements, these comparisons are likely to be more descriptive rather than a real test of bias.

While capital maintenance in the IPO prospectus is on average 2.9% of sales, depreciation expense in the post-IPO years is considerably larger at 7.4% of sales, and the difference is highly significant.³³ Capital maintenance forecasts in prospectuses are only 40% of post-IPO depreciation, indicating that income trust promoters do not consider reinvestment at the level of depreciation to be necessary in order to generate free cash flows for unit holders, at least in the short term. If depreciation expense can be viewed as a lower bound on long term capital maintenance required for the income trust to continue distributing its payments in perpetuity, then the relatively low spending on capital maintenance suggested in the prospectus implies either that the income trust cash flows have a limited life, or in the longer term, a higher level of capital spending will be required. In either case, this implies a decline in distributable cash in the longer term.

The final two rows of Table 6, Panel A report that average post-IPO capital spending is 1.6 times forecasted capital maintenance reported in the prospectus (i.e. 4.6% of sales compared with 2.9% of sales) but the difference is not significantly different. The difference in the medians, while considerably less than the difference in means, is statistically significant.

³³ Medians reflect a similar relation.

There is no strong evidence in Table 6 to suggest that business trust IPO disclosures of distributable cash (and capital maintenance) are biased upward (downward) relative to their realizations in the first three years following the IPO. The only evidence that can be construed as showing a possible bias is when we compare IPO year capital maintenance forecasts to depreciation expense or total capital expenditures following the IPO. However, as discussed above, these benchmarks may be excessive.

Of course, the average bias or median bias measures presented in Table 6 can mask cross-sectional differences among firms driven by differences in underlying incentives to manipulate. We investigate when original owners retain more (less) than the median amount of retained equity ownership if there is less (more) overstatement of distributable cash at the IPO date. The results of these tests are reported in Table 7. The left hand columns of Table 7 report bias tests for trusts with retained ownership less than the overall median retained ownership of 29%, while the right-hand side columns are for business trusts above this amount. If we look at the two subsamples separately, we see results that are very similar to those in Table 6, except that median distributable cash per dollar of sales is significantly lower in the post-IPO period for trusts with high retained ownership. Recall though that our hypothesis predicts the opposite—that the high ownership firms would be less likely to overstate initial distributable cash measures. Therefore we do not interpret this result as indicating upward bias in distributable cash forecasts. Rather, the difference between the two groups is likely due to omitted variables that are influencing the amount of ownership retained.

4.3 Do valuation weights vary with cross-sectional differences in capital maintenance to depreciation?

The evidence to this point suggests that distributable cash disclosed in the IPO prospectus exhibits little evidence of upward biases, except when compared with depreciation. One interpretation of the difference between capital maintenance reported in the prospectus and depreciation expense is that distributable cash is not sustainable since capital maintenance is not high enough to maintain the level of assets. To investigate whether the capital market has this view, we extend the valuation analysis to

examine whether the weight that is applied distributable cash implies the ratio of capital maintenance in the prospectus to depreciation expense immediately following the IPO as a indicator of cash flow persistence. If depreciation expense can be treated as a lower bound on asset replacement costs, firms who spend very little currently on capital maintenance, relative to this benchmark, are likely to ultimately experience a decline in their ability to generate distributable cash. If so, then valuation the weight on distributable cash should vary positively with this ratio. (The underlying assumption here is that the appropriate, but unobserved, level of capital maintenance expenses can be modeled as a constant proportion of depreciation expense across firms.)

To test this prediction, we add to the IPO date distributable cash regression an indicator variable that identifies trusts with above median capital maintenance to depreciation and its interaction with the distributable cash.³⁴ We have no prediction on the coefficient on the indicator variable. We expect the coefficient on the interactive term to be positive if the market views the ratio as a indicating the adequacy of capital maintenance. In addition we control for the remaining useful life of tangible assets (net property plant and equipment to depreciation expense) and its interaction with distributable cash.

The regression is estimated at the IPO date and for years 1, 2 and 3 following the IPO. As trust firms do not typically report depreciation expense separately in the IPO prospectus, investors may not be aware of this ratio initially. But by one year following the IPO investors should have seen sufficient interim reports to have a reasonable estimate of the ratios magnitude.

Table 8 shows the results of this analysis. Consistent with earlier analysis in Table 6, capital maintenance is on average 30% of depreciation, and the median cut-off for our indicator variable is 20%. The average estimated remaining useful life of tangible assets is 8.6 years. In the IPO year (column 1 in Panel B), there is no indication of a positive coefficient on the interaction of our indicator for high capital maintenance and distributable cash. Thus, at the IPO date the market treats capital maintenance charges as if they are unbiased in applying a multiple to distributable cash. The essence of this result is maintained in year's 1 and 2 following the IPO where the interactive terms do not differ at conventional

³⁴ The results are not sensitive to the use of continuous variables rather than indicator variables.

levels from zero. As mentioned, a failure to weight the ratio in years 1 and 2 can indicate that the market rationally rejects the measure as capturing bias. Or, if market participants are irrational, then they could be failing to incorporate a valid bias measure.

By year 3 following the IPO, the interactive term has a 5.364 coefficient which differs from zero at the 10% level of significance. (There are only 18 observations for this regression.) Given the very small sample size, we consider this rather weak evidence that the market incorporates this measure of bias into valuation weights in the third year. Since the market should have been able to estimate depreciation expense by the end of the first year following the IPO, one could be tempted to think that prices are set inefficiently for at least two years (since the bias is not incorporated into the slope coefficient) and the market wakes up to the bias in the third year. This explanation requires very persistent inefficiency and seems implausible in the relatively well-developed capital market in Canada. It seems more likely that participants did not think depreciation expense a useful benchmark for capital maintenance charges, but that in fact real outcomes were correlated with the ratio.

4.4 Post-IPO underperformance

As the last test of the potential bias in distributable cash, we investigate whether our sample displays longer term underperformance in the capital markets. Perhaps biases in distributable cash fool investors at the IPO date. But as these biases are discovered, revaluation of trust stock would cause a returns to decline. This test complements the prior test that looks at actual distributable cash numbers.

Table 9 reports longer term returns to our initial public offering sample. For this sample, the mean and median first five day return measures are about 0.8% and differ from zero only at the 10% significance level. Extending the horizon to one year, we find evidence of an 8% positive return, (significant at the 5% level) on our portfolio of fifty-two stocks, suggesting over-performance, rather than underperformance. However, this positive return is offset by lack luster performance in the second and third years. Had an investor purchased our sample firms at their initial public offering date, they would have received a return roughly equal to a diversified portfolio of stocks on the TSX exchange (i.e., three year mean market adjusted returns are statistically indistinguishable from zero.) We have

investigated whether these longer term returns are related to the retention of ownership (untabulated); we find no evidence of a relation. The essence of the results are not changed if we exclude returns affected by the October 31, 2006 announcement regarding changes to the tax status of Canadian business trusts.³⁵

5. Conclusion

Business trust initial public offerings were a preferred mode of going public from 2001 until 2006 for firms listed on the Toronto stock exchange. The tax benefits that made this structure so popular eventually led to its demise. In as much as these stocks were favored by small investors, regulators became concerned as to whether the voluntarily disclosed summary measure known as distributable cash, somehow caused these investors to fail to appreciate the risks of these firms and the sustainability of their cash flows. This study investigates whether these fears on the part of regulators were warranted. This is an important exercise as it speaks to the benefit and cost of allowing managerial discretion in financial reporting, the core to many debates in accounting regulation. In this paper, we use the relation of distributable cash to the market value on the IPO date to understand whether investors view distributable cash as providing a better forecast of the future cash flows than other performance measures, such as net income. Since this exercise requires an assumption that the market value of the initial public offering is an unbiased measure of the income trusts' intrinsic values, we begin by establishing that the market value of these initial public offerings exhibits very little underpricing consistent with low information asymmetry at the issue date. Analysis presented toward the end of the paper also shows that over three years following the IPO there is no longer term under-performance.

We go on to investigate how well alternative summary measures of performance, provided in trust prospectuses, predict the IPO prices and market valuations following the IPO. We find that the two voluntarily disclosed numbers: EBITDA and distributable cash, outperform net income in explaining valuations. Distributable cash alone provides greater explanatory power than EBITDA alone. However,

³⁵ We have also examined whether the returns can be explained by the measure of *ex-ante* bias, capital maintenance charge to depreciation expense and find no evidence that the bias predicts long-term under-performance.

we find including both EBITDA and distributable cash gives a higher explanatory power than either alone, suggesting differential persistence of components of distributable cash. We also document that the forecast of capital maintenance charges adjusted for in distributable cash (but not in EBITDA) is particularly informative with respect to the market value of the initial public offering.

These results contrast with similar tests conducted in the U.S. Reit setting. With the exception of a recent study by Baik, et al. [2008] that relies on regulated disclosures, prior research in the Reit setting suggests that net income is a primary forecasting statistic for Reits and that there is little evidence that *funds from operations* is incrementally informative or superior to net income. The study by Baik et al. tracks the performance of *funds from operations* during a period of reduced accounting discretion and provides evidence that *funds from operations* is superior to net income. Nevertheless in that study net income is incrementally informative to the pro-forma figure, and in our post-IPO setting this is not the case. If we take as given that the market value of trust firms post-IPO is an unbiased measure of their intrinsic value, our results suggest that a pro-forma number, alleged by the press to be highly subject to manipulation, performs better than the more regulated and rule-bound net income.

We address the issue of potential manipulation in a more direct fashion by looking for evidence that distributable cash figures (and capital maintenance charges) were over (under) stated at the IPO date. We compare the IPO forecasts to ex-post realizations, and find no evidence that distributable cash was over-stated at the IPO date. Capital maintenance forecasts similarly show no evidence of overstatement, although they are less than total capital expenditures and depreciation charges. Moreover, our measures of bias are unrelated to retained ownership, which arguable reduces the incentive to manipulate.

Given the strong relation between distributable cash disclosures and market valuations, a critic of our study would argue that income trusts have a strong incentive to keep distributable cash from falling. It is possible that the strong relation between distributable cash and market valuations is driven by investors placing unwarranted confidence in a measure that is flawed due to undetectable manipulation. Our third test therefore presents a joint test of market efficiency and bias. We propose the ratio of capital maintenance to depreciation expense measured close to the IPO date as a measure of relative bias and

investigate whether the valuation weight placed on distributable cash varies positively with this ratio (suggesting that investors are able to undo the bias). Our results suggest that investors do not incorporate the information in depreciation expense when setting prices the IPO year, and in years 1 and 2 following the IPO. Given that this is a joint test, the lack of significance suggests either that capital maintenance expenses are unbiased, or that investors fail to appreciate the bias. In the third year following the IPO, firms that had high capital maintenance charges relative to depreciation are rewarded with higher valuation weights than firms with lower ratios (more aggressive estimates). This is the only evidence we have that could be construed as indicating that the market may be aware of bias in distributable cash estimates and is adjusting for it.

Overall, we are unable to find evidence that pro-forma distributable cash reported in the IPO prospectus is overstated. However our relatively small sample size could be reducing the power of our tests. With this caveat in mind we conclude that the discretion in distributable cash disclosures by income trusts is generally used to provide relevant and reliable information that market participants use in forecasting cash flows to unit-holders.

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Figure 1

Cash Flows and Typical Structure of Income Trusts

This figure depicts the typical trust of an income trust. It is based on Figure 5 in King (2003).

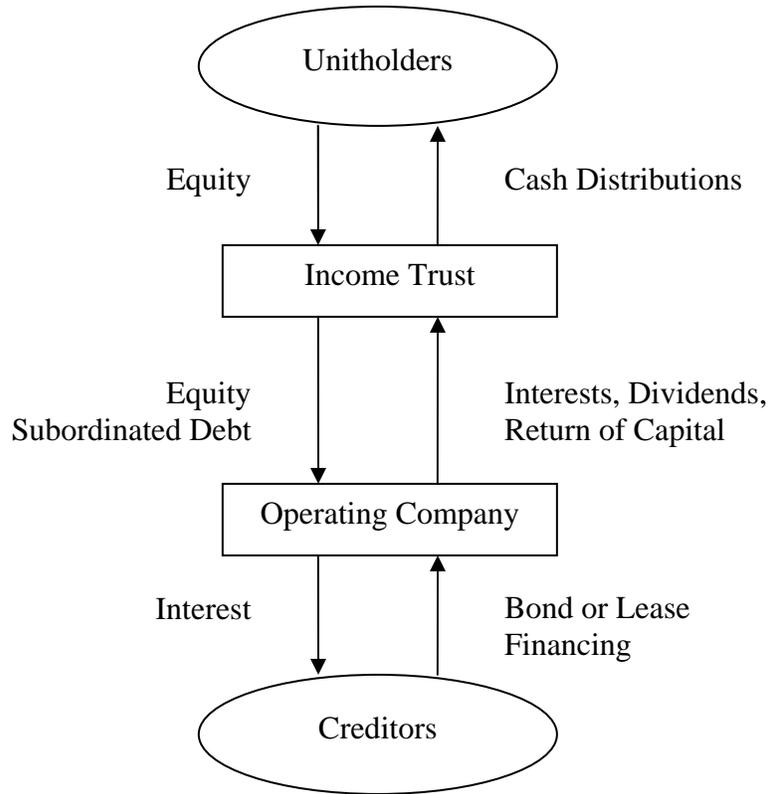


Figure 2

Reconciliation of Net Income, EBITDA and Pro-forma Distributable Cash, Provided in the IPO Prospectus

There is no standardized definition of distributable cash or EBITDA that applies to all income trust. However, the following equation summarises the typical build up of pro-forma distributable cash in the IPO prospectus from historical net income, to EBITDA (if reported as an interim step) and finally to pro-forma distributable cash.

Net Income (historical)

- + historical interest expense
 - + historical tax expense
 - + historical depreciation and amortization expense
-

= EBITDA*

- + sundry adjustments for items not expected to repeat and specific non-cash charges
 - expected cash interest
 - expected cash taxes
 - expected capital maintenance
 - expected additional administrative costs of operating as an income trust
 - expected distributions to other claimants
-

= Distributable cash available to unit holders (Pro-forma)

* EBITDA was recorded exactly as it was defined in the prospectus. When both an EBITDA and an adjusted EBITDA figures were reported in the prospectus the adjustments were recorded following the recording of EBITDA. However, at times some firms included some adjustments before the number that they labeled as EBITDA.

Appendix A
Six examples of the reconciliation between net income and distributable cash

David & Henderson Income Fund

The operating company provides services to financial institutions; it supplies checks, deposit and accessory products and account opening services. The trust went to public in 2003.

Net Income
+ Amortization
+ Future Income Taxes
- Capital Maintenance Expenditures (including capital lease payments)
= Distributable Cash

AG Growth Income Fund

The operating company is in farming support industry. The trust went to public in 2005.

Net Income
+ Amortization
+ Interest Expense
+ Tax Expense
= EBITDA
- Interest Expense
- Net Capital Expenditures
- Current Taxes
= Distributable Cash

Art in Motion

The operating company is a fine art publisher and wholesale framer. The trust went to public in 2005.

Net income
+ non-controlling interest
+ amortization
+ write-down of goodwill
+ founders' employee participation plan (expensed by the Income Fund but paid for by a related party)
+ interest expense
+ net change in interest rate swap
+ net change in forward foreign exchange contracts
= EBITDA
- interest expense
- capital expenditure
= Distributable Cash

Prizm Canadian Income Fund

The operating company owns the Canadian outlets of a list of restaurants, including KFC, Pizza Hut, Taco Bell and Long John Silver. The trust went to public in 2004.

Net Income

- + non-controlling interest
 - + amortization of PPE
 - + write-down of restaurant assets to net recoverable amount
 - + amortization of franchise rights
 - + amortization of financing fees
 - + step lease amortization (i.e. accrued expense for lease enticements received)
 - + unit based compensation (i.e. expensing of management stock option plan)
 - + loss on disposal of PPE
- = Cash provided by operating activities before changes in non-cash working capital
- maintenance capital expenditures (i.e. capital expenditures necessary to sustain current revenue levels)
- = Distributable cash

CML Healthcare Income Fund

The operating company provides diagnostic healthcare services. The trust went to public in 2005.

Earnings from continuing operations

- + Non-controlling interest
 - + Amortization of PPE
 - + Long-term incentive plan expense
 - + Non-cash interest expense
 - + Provision for impairment of investments and other assets
 - + Future income taxes
 - + Change in non-cash working capital
- = Cash flow from operations
- + normalizing items in working capital (timing differences relating to interest payments)
 - non-recurring revenue (due to a back dated pricing adjustment)
 - + non-recurring expense (due to the same back dated pricing adjustment)
 - capital expenditures and capital lease payments
 - +/- change in the capital expenditure reserve
- = Distributable cash

Boston Pizza Royalty Income Fund

The trust receives royalty payments from Boston Pizza franchisees.

Net earnings

- + non-controlling interest
 - + amortization of deferred financing charges
- = Distributable cash

Table 1
Sample selection process

Panel A IPO valuation analysis sample

This table describes the sample selection process of our IPO valuation analysis samples. We start with 56 observations with distributable cash for offered units in IPO prospectus. Sample size varies with tests due to different data restrictions.

Restrictions	Sample size
Total observations with distributable cash for offered units	56
Less:	
Observations with missing closing price on IPO day	4
Royalty trusts (without comparable sales)	5
Observations with missing information on sales	2
Sample for the valuation analysis using market value and distributable cash	45
Less: observations with missing information on net income	1
Sample for the valuation analysis using market value and net income	44
Less: Observations with missing EBITDA	3
Sample for the valuation analysis using market value and EBITDA	41
Sample for the valuation analysis using market value and net income	44
Less: Observations with missing information on capital maintenance	1
Sample for the valuation analysis using components of DC starting from income	43
Sample for the valuation analysis using market value and EBITDA	41
Less: Observations with missing information on interest expense	2
Sample for the valuation analysis using components of DC, starting from EBITDA	39

Table 1 (cont'd)*Panel B Post-IPO valuation analysis sample*

This table describes the sample selection process of our post-IPO valuation analysis samples. We start with 232 observations with distributable cash for fund units in the post-IPO period. Sample size varies with tests due to different data restrictions.

Restrictions	Sample size
Total observations with distributable cash for fund units	232
Less:	
Observations with partial years	59
Observations without financial information on the underlying business	13
Royalty trusts (without comparable sales)	10
Sample for the valuation analysis of distributable cash and net income	150
Less: Observations with missing information on EBITDA	42
Sample for the valuation analysis of EBITDA	108
Sample for the valuation analysis using market value and net income	150
Less: Observations with missing information on capital maintenance	14
Sample for the valuation analysis of components of distributable cash, starting with NI	136
Sample for the valuation analysis using market value and EBITDA	108
Less: Observations with missing information on capital maintenance	11
Sample for the valuation analysis of components of distributable cash, starting with EBITDA	97

Table 2
Descriptive Information on Trust Sample

Panel A Descriptive statistics on the variables used in IPO valuation analysis

The following data are collected from IPO prospectus. All variables, except market value and revenue, are deflated by revenue. Market value is calculated as closing price on the IPO date times the number of units offered, distributable cash is distributable cash per unit times the number of units offered, EBITDA, capital maintenance, and other distribution are as reported by the company, and net income is adjusted for income tax, which trusts do not need to pay after IPO (that is “net income” is net income as reported plus income tax). Note that all financial numbers are the proportion that is available for units offered, that is, the corresponding numbers reported for the operating company times the proportion of operating company being sold at IPO. Adjustment_1 is calculated as (distributable cash – pre-tax income + capital maintenance + other distribution) and adjustment_2 is calculated as (distributable cash – EBITDA + interest expense + capital maintenance + other distribution).

	Mean	Median	Std.	Min	Q1	Q3	Max	N
<i>Size of the trusts</i>								
Market Value (\$000)	162,722	123,095	150,844	31,711	78,835	191,368	993,905	52
Revenues (\$000)	112,957	114,707	90,749	5,618	40,847	164,393	462,756	50
<i>Variables used in valuation regressions (all scaled by revenue)</i>								
Market Value	2.311	1.331	2.312	0.489	0.934	2.717	10.442	50
Distributable Cash	0.257	0.149	0.254	0.011	0.105	0.318	1.224	50
Net income	0.210	0.084	0.294	-0.058	0.050	0.194	1.000	49
EBITDA	0.318	0.189	0.278	0.063	0.134	0.436	1.000	46
Capital Maintenance	0.028	0.017	0.045	0.001	0.009	0.030	0.253	47
Other distribution	0.015	0.000	0.042	0.000	0.000	0.000	0.203	45
Adjustment_1	0.087	0.058	0.107	-0.118	0.023	0.107	0.471	47
Adjustment_2	-0.004	-0.004	0.024	-0.054	-0.016	0.006	0.051	42

Table 2 (cont'd)*Panel B Post-IPO valuation analysis sample*

The following data are based on the annual reports in the post-IPO sample. All variables, except market value and revenue, are deflated by revenue. Market value is calculated as closing price at the fiscal year end times the number of fund units, distributable cash is distributable cash for fund units offered, EBITDA, capital maintenance, and other distributions are as reported by the company, and net income is net income before extraordinary items plus minority interest. Note that all financial numbers are the proportion that is available for fund units, that is, the corresponding numbers for the operating company times the proportion of operating company owned by fund units. Adjustment_1 is calculated as (distributable cash – net income + capital maintenance + other distribution) and adjustment_2 is calculated as (distributable cash – EBITDA + interest expense + capital maintenance + other distribution). MVE/BE is the ratio of market value to book value of equity.

	Mean	Median	Std.	Min	Q1	Q3	Max	N
<i>Size of the trusts</i>								
Market Value (\$000)	476,827	251,808	898,759	18,246	110,279	529,179	7,694,262	150
Revenues (\$000)	280,760	174,285	330,204	11,655	110,399	320,025	2,171,400	150
<i>Variables used in valuation regressions (all scaled by revenue)</i>								
Market Value	2.011	1.468	1.703	0.118	0.832	2.431	8.488	150
Distributable Cash	0.189	0.147	0.132	0.000	0.099	0.240	0.539	150
Net income	0.091	0.080	0.177	-0.726	0.047	0.142	0.685	150
EBITDA	0.244	0.192	0.185	0.022	0.107	0.330	0.883	108
Capital Maintenance	0.033	0.016	0.060	0.000	0.008	0.029	0.370	136
Other distribution	0.009	0.000	0.026	0.000	0.000	0.004	0.168	150
Adjustment_1	0.134	0.080	0.177	-0.216	0.042	0.142	1.046	136
Adjustment_2	0.018	0.008	0.055	-0.196	-0.007	0.041	0.257	97
MVE/BE	2.079	1.440	3.300	-0.860	1.146	1.874	34.689	134

Table 3
Underpricing of Trust IPO's: IPO date returns

This table reports the IPO date return. IPO date return is calculated as the closing price on the IPO date divided by the offer price, and then minus one. The value-weighted (or equal-weighted) market adjusted IPO date return is the difference between IPO date return and the value-weighted (or equal-weighted) market return on the same day. IPO underpricing occurs when IPO date return is *positive*.

Year	N	Mean (p-value)	Std.	Q1	Median (p-value)	Q3	ret. = 0	ret. >0	ret. <0
<i>For the full sample</i>									
Raw return	52	0.021*** (0.001)	0.041	0.000	0.009*** (0.001)	0.042	5	35	12
Value weighted market-adjusted return	52	0.023*** (0.001)	0.042	-0.006	0.015*** (0.018)	0.043	0	35	17
Equally weighted market-adjusted return	52	0.022*** (0.001)	0.041	-0.003	0.013*** (0.018)	0.040	0	35	17
<i>Yearly distribution of (value weighted) market adjusted return</i>									
1997	4	0.029	0.094	-0.029	0.010	0.088	0	3	1
1998	1	0.079	.	0.079	0.079	0.079	0	1	0
2001	3	0.030	0.020	0.008	0.034	0.048	0	3	0
2002	23	0.019	0.039	-0.015	0.010	0.042	0	13	10
2003	11	0.022	0.039	-0.004	0.012	0.057	0	7	4
2004	10	0.021	0.034	0.005	0.021	0.035	0	8	2

*, **, *** indicate significance at the 10%, 5%, and 1% level, respectively.

Table 4
Value relevance of individual summary performance measures

This table reports the results from regressing the market value of the income trust's equity on three summary performance measures: distributable cash (DC), net income, and earnings before interest, tax, depreciation and amortization (EBITDA). Panel A focuses on the explanatory power of individual measures and Panel B focuses on the incremental explanatory power of one summary measure over another.

For the tests using information from the IPO prospectus, market value is calculated as closing price on the IPO date times the number of units offered, distributable cash is distributable cash per unit times the number of units offered, EBITDA is as reported by the company, and net income is net income as reported before income tax expense. (Since the financial information reported in the prospectus is based on the operating company before the IPO and trusts do not need to pay income taxes afterwards, we use income before tax.) Note that net income, income tax expense, and EBITDA, are measured based on the proportion that is available to the units offered in the IPO, that is, the corresponding numbers reported for the operating company times the proportion of the operating company being sold in the IPO. All variables are scaled by sales.

For the tests using information from the post-IPO years, market value is calculated as closing price at the fiscal year end times the total number of fund units, distributable cash is distributable cash available to all fund units, EBITDA is as reported by the company, and net income is net income before extraordinary items and before deducting minority interest. Note that all financial numbers are the proportion that is available for the fund units, that is, the corresponding numbers for the operating company times the proportion of the operating company that is owned by the fund unit holders.

Panel A Value relevance of individual summary measures

	IPO prospectus			Post-IPO years		
	Model (1)	Model (2)	Model (3)	Model (1)	Model (2)	Model (3)
intercept	0.290 (0.048)	0.881 (0.001)	0.088 (0.596)	-0.205 (0.047)	1.532 (0.001)	0.190 (0.194)
Distributable cash	7.315 (0.001)			11.750 (0.001)		
Net income		6.201 (0.001)			5.276 (0.001)	
EBITDA			6.456 (0.001)			7.498 (0.001)
Adj. R ²	0.761	0.469	0.745	0.824	0.295	0.698
N	45	44	41	150	150	108

Table 4 (cont'd)*Panel B Vuong tests of the difference in the value relevance of individual summary measures*

This table reports Vuong tests that compare the explanatory power of each pair of individual summary measures. The corresponding two-sided p-values are reported in parentheses. In conducting the Vuong tests, we limit the sample to the set of observations with both summary measures of interest. Vuong test statistics follow a student t distribution.

Comparisons	IPO prospectus	Post-IPO years
DC vs. net income	2.728 (0.006)	8.940 (0.001)
DC vs. EBITDA	2.187 (0.029)	3.219 (0.001)
Net income vs. EBITDA	-1.893 (0.059)	-2.771 (0.006)

Panel C Incremental information content of summary measures.

This table reports the regression of market value on two of the three performance variables: distributable cash (DC), pre-tax income, and EBITDA. All numbers are deflated by sales.

	IPO prospectus			Post-IPO years		
	Model (1)	Model (2)	Model (3)	Model (1)	Model (2)	Model (3)
Intercept	0.252 (0.060)	-0.106 (0.426)	0.120 (0.431)	-0.190 (0.072)	-0.096 (0.403)	0.241 (0.053)
Distributable cash	5.870 (0.001)	7.011 (0.001)		11.548 (0.001)	9.400 (0.001)	
Net income	2.437 (0.003)		2.357 (0.007)	0.257 (0.530)		3.189 (0.001)
EBITDA		1.953 (0.052)	5.080 (0.001)		1.380 (0.074)	6.080 (0.001)
Adj. R ²	0.798	0.848	0.785	0.823	0.829	0.784
N	44	41	41	150	108	108

Table 5
Value relevance of the components of distributable cash (DC)

This table reports the regression of market value on the components of distributable cash. In columns 1 and 2 of Panel A the regressors are net income, capital maintenance, and an adjustment. In column 3 depreciation is included as an additional regressor. When depreciation is not included in the regression adjustment_1 = distributable cash – net income + capital maintenance + other distributions. When depreciation is included separately adjustment 1 = distributable cash – net income + capital maintenance + other distributions – depreciation). In Panel B the regressors are EBITDA, interest expense, capital maintenance, and an adjustment (adjustment_2 = distributable cash – EBITDA + interest expense + capital maintenance + other distributions). Interest expense, capital maintenance, and other distributions are as reported in the IPO prospectus or income trust annual report. Please see the notes to Table 4 for the measurement of other variables.

Panel A: Components of DC based on NI reconciliation

	IPO prospectus	Post-IPO period	Post-IPO period
Intercept	0.035 (0.796)	-0.280 (0.004)	-0.284 (0.003)
Net income	8.780 (0.001)	12.292 (0.001)	12.145 (0.001)
Capital Maintenance	-4.940 (0.018)	-11.030 (0.001)	-11.616 (0.001)
Other distribution	-6.274 (0.007)	-8.332 (0.001)	-7.740 (0.001)
Depreciation			12.112 (0.001)
Adjustment_1	7.537 (0.001)	11.698 (0.001)	11.435 (0.001)
Adj. R ²	0.820	0.844	0.844
N	43	136	136

Panel B: Components of DC based on EBITDA reconciliation

	IPO prospectus	Post-IPO period
Intercept	-0.090 (0.383)	-0.168 (0.118)
EBITDA	7.425 (0.001)	11.462 (0.001)
Interest expense	9.822 (0.007)	-12.012 (0.001)
Capital maintenance	-10.252 (0.001)	-10.083 (0.001)
Other distribution	-6.534 (0.020)	-8.067 (0.002)
Adjustment_2	9.486 (0.001)	11.150 (0.001)
Adj. R ²	0.918	0.863
N	39	97

Table 6
Tests for potential bias in distributable cash and capital maintenance reported in the
income trust IPO prospectus

This table reports the level of each variable (distributable cash or capital maintenance) obtained from the IPO prospectus, compared with its average level during the three years following the IPO. The table also compares the level of capital maintenance forecasted in the IPO prospectus to depreciation expenses and capital expenditures that occurred in the three years after IPO. The p-value for the difference is based on a t-test for the mean and a Wilcoxin signed-rank test for the median difference.

	N	The level in IPO prospectus	Average level in the three years after IPO	P-value for the difference
<i>DC available to fund units: IPO prospectus vs. post-IPO periods</i>				
Mean	40	0.175	0.162	0.235
Median	40	0.129	0.125	0.712
<i>DC per unit: IPO prospectus vs. post-IPO periods</i>				
Mean	42	1.098	1.208	0.133
Median	42	1.120	1.179	0.008
<i>Capital Maintenance: IPO prospectus vs. post-IPO periods</i>				
Mean	38	0.029	0.026	0.196
Median	38	0.016	0.013	0.004
<i>Capital Maintenance in IPO prospectus vs. depreciation in post-IPO periods</i>				
Mean	39	0.029	0.074	0.001
Median	39	0.016	0.043	0.001
<i>Capital Maintenance in IPO prospectus vs. capital expenditure in post-IPO periods</i>				
Mean	37	0.029	0.046	0.192
Median	37	0.016	0.020	0.016

Table 7

Tests for potential bias in distributable cash and capital maintenance reported in the income trust IPO prospectus, conditional on the level of retained ownership

This table repeats the bias tests performed in Table 6, separately for trusts with high retained ownership and those with low retained ownership. Retained ownership is defined as 1 minus the proportion of the operating company sold to public trust holders at the IPO date. Panel A reports descriptive statistics on retained ownership, and Panel B reports the bias tests. The p-values are based on a t-test for the difference in the means and a Wilcoxin signed-rank test for the difference in medians. The two groups are not significantly different from each at the conventional levels except for the median change in DC for fund units, for which the difference is significant at the 0.02 level.

Panel A Descriptive statistics on retained ownership

	Mean	Median	Std.	Min	Q1	Q3	Max	N
Retained ownership	0.311	0.292	0.246	0.000	0.100	0.527	0.812	52

Panel B Bias test results conditional on retained ownership

	Trusts with low retained ownership (retained ownership < median level)				Trusts with high retained ownership (retained ownership ≥ median level)			
	N	The level in IPO prospectus	Average level in the three years after IPO	P-value for the difference	N	The level in IPO prospectus	Average level in the three years after IPO	P-value for the difference
<i>'DC for fund units: IPO prospectus vs. post-IPO periods</i>								
Mean	19	0.172	0.176	0.725	21	0.179	0.150	0.112
Median	19	0.107	0.124	0.096	21	0.149	0.126	0.066
<i>DC per unit: IPO prospectus vs. post-IPO periods</i>								
Mean	19	1.144	1.303	0.083	23	1.060	1.130	0.536
Median	19	1.100	1.214	0.012	23	1.150	1.104	0.208
<i>Capital Maintenance: IPO prospectus vs. post-IPO periods</i>								
Mean	18	0.034	0.029	0.063	20	0.025	0.024	0.927
Median	18	0.012	0.012	0.024	20	0.017	0.015	0.097
<i>Capital Maintenance in IPO prospectus vs. depreciation in post-IPO periods</i>								
Mean	18	0.034	0.070	0.001	21	0.024	0.077	0.009
Median	18	0.012	0.045	0.001	21	0.017	0.043	0.001
<i>Capital Maintenance in IPO prospectus vs. capital expenditure in post-IPO periods</i>								
Mean	16	0.037	0.045	0.145	21	0.024	0.047	0.306
Median	16	0.012	0.017	0.130	21	0.017	0.030	0.056

Table 8
Value relevance of individual summary measures,
conditional on the perceived sustainability

This table reports results the regression of market value on distributable cash (DC) and two measures of sustainability, and their interactions with distributable cash. The two sustainability measures are (1) the ratio of capital maintenance reported in IPO prospectus to depreciation and amortization in the year after the IPO and (2) the ratio of net PPE to depreciation and amortization, both of which are measured in the year after IPO. Panel A reports the descriptive statistics for the two variables and Panel B reports the regression results. In column 1 market value is measured at the end of the IPO day and distributable cash is taken from the IPO prospectus. In columns 2 to 4 market value and distributable cash are both measured for the first, second and third full years following the IPO. Market value is measured at the fiscal year end and distributable cash is measured for the fiscal year in question. In the regression, we use an indicator variable for the high capital maintenance to depreciation ratio (C/D_I); the indicator is 1 if the ratio is above the median and 0 otherwise. Please see the notes to Table 4 for a description of the measurement of other variables.

Panel A Descriptive statistics on sustainability measures

	Mean	Median	Std.	Min	Q1	Q3	Max	N
capital maintenance/depreciation	0.304	0.203	0.275	0.000	0.094	0.391	0.918	38
Net PPE/Depreciation	8.56	6.14	7.37	0.23	3.31	12.09	27.08	37

Panel B Value relevance of individual summary measures, conditional on perceived sustainability

	IPO prospectus	Year 1 post-IPO	Year 2 Post-IPO	Year 3 Post-IPO
intercept	-0.306 (0.201)	-0.684 (0.011)	-0.762 (0.108)	-0.519 (0.123)
Distributable cash	10.599 (0.001)	12.782 (0.001)	15.655 (0.001)	13.348 (0.001)
C/D_I	0.224 (0.497)	0.388 (0.216)	0.048 (0.937)	-0.404 (0.373)
C/D_I × distributable cash	-0.963 (0.585)	-1.541 (0.378)	1.345 (0.925)	5.364 (0.075)
Net PPE/Depreciation (PPE/D)	0.050 (0.085)	0.052 (0.018)	0.070 (0.295)	0.065 (0.086)
PPE/D × distributable cash	-0.308 (0.060)	-0.317 (0.040)	-0.578 (0.181)	-0.563 (0.026)
Adj. R ²	0.833	0.866	0.847	0.895
N	37	37	28	18

Table 9
Income trust post-IPO stock return performance

This table reports market adjusted aggregate stock returns in various post-IPO periods for the 52 trusts with IPO price and post-IPO returns available. In Panel A returns are adjusted by the value-weighted market return and in Panel B they are adjusted by the sector market return, which is the average sector index return in the following sectors: financial and healthcare, materials, telecom, consumer staples, consumer discretionary, and industrials. In each panel, the market adjusted post-IPO return over a specified period is calculated as the accumulated differential daily return - the difference between daily return of the IPO firm and the market return - over the specified period following the IPO date. P-values are reported in parentheses and are based on a two-sided test of whether the mean or median is significantly different from zero.

Panel A Post-IPO stock returns – value-weighted total market adjusted

	N	Mean (p-value)	Std.	Q1	Median (p-value)	Q3
5-day return	52	0.009* (0.064)	0.033	-0.013	0.008* (0.070)	0.024
1 st year return	52	0.103*** (0.003)	0.240	-0.061	0.086 (0.126)	0.267
2 nd year return	52	-0.039 (0.213)	0.224	-0.198	-0.009 (0.890)	0.132
First two years return	52	0.059 (0.186)	0.320	-0.128	0.057 (0.212)	0.253
3 rd year return	52	-0.136*** (0.001)	0.220	-0.250	-0.141*** (0.008)	0.071
First three years return	52	-0.062 (0.293)	0.418	-0.336	-0.114 (0.212)	0.156

Panel B Post-IPO stock returns – sector market adjusted

	N	Mean (p-value)	Std.	Q1	Median (p-value)	Q3
5-day return	52	0.010 (0.420)	0.033	-0.010	0.009** (0.018)	0.022
1 st year return	52	0.163*** (0.001)	0.254	-0.019	0.158*** (0.001)	0.349
2 nd year return	52	0.036 (0.293)	0.244	-0.141	0.059* (0.070)	0.212
First two years return	52	0.202*** (0.002)	0.359	-0.037	0.213*** (0.003)	0.407
3 rd year return	52	-0.094*** (0.005)	0.233	-0.237	-0.101*** (0.003)	0.111
First three years return	52	0.122* (0.090)	0.509	-0.210	0.077 (0.489)	0.401

*, **, *** indicate significance at the 10%, 5%, and 1% level, respectively.