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Executive Summary

Cash flow Reporting Practices for Interest Paid on Zero Coupon Bonds

Debt financing, such as bonds and notes payable, comes with an interest cost that is incurred by the borrower and paid to the lender providing compensation for the use of funds. When zero coupon bonds are issued, interest is included in the principal amount or face value of the bonds. Although coupon payments are not made during the life of the bonds, the company accrues interest expense on them, which is paid when the bonds are repurchased or redeemed at maturity. Hence, when a company repurchases or redeems zero coupon bonds, it should classify the cash outflow for the repayment of principal amount received from bondholders as a financing use of cash and the amount paid in excess of the principal as operating use of cash.

This study examines the cash flow reporting practices of companies that repurchase or redeem zero coupon bonds. We also evaluate the impact these practices have on the reported cash flows from operating activities. Our results indicate that most companies classify the cash paid towards interest on zero coupon bonds as a financing use of cash. The mean reduction in reported operating cash flow that would be caused by inclusion of interest paid on zero coupon bonds averaged approximately 11%.

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Georgia Tech Financial Analysis Lab

The Georgia Tech Financial Analysis Lab conducts unbiased stock market research. Unbiased information is vital to effective investment decision-making. Accordingly, we think that independent research organizations, such as our own, have an important role to play in providing information to market participants.

Because our Lab is housed within a university, all of our research reports have an educational quality, as they are designed to impart knowledge and understanding to those who read them. Our focus is on issues that we believe will be of interest to a large segment of stock market participants. Depending on the issue, we may focus our attention on individual companies, groups of companies, or on large segments of the market at large.

A recurring theme in our work is the identification of reporting practices that give investors a misleading signal, whether positive or negative, of corporate earning power. We define earning power as the ability to generate a sustainable stream of earnings that is backed by cash flow. Accordingly, our research may look into reporting practices that affect either earnings or cash flow, or both. At times our research may look at stock prices generally, though from a fundamental and not technical point of view.

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Companies Named In This Report

Introduction:
Debt financing, such as bonds and notes payable, comes with an interest cost that is incurred by the borrower and paid to the lender providing compensation for the use of funds. In most borrowing arrangements, interest is scheduled for regular payment over the loan term. For example, a $1 million bond offering bearing interest at a coupon rate of 6% per annum payable semi-annually would require interest payments of $30,000 ($1,000,000 X 6%/2) every six months. In addition, the $1 million in principal due on the bonds, also known as their par or face value, would be scheduled for repayment on the bond's maturity date.

The proceeds received by the borrower when the loan closes, $1 million in this example, would appear as a financing source of cash. Repayment of the principal amount of the bonds would be reported as a financing use of cash. Interests costs incurred during the loan term would reduce net income and would appear as an operating use of cash.

According to SFAS No. 95, *Statement of Cash Flows*, "Cash outflows for operating activities are: … Cash payments to lenders and other creditors for interest." (SFAS No. 95, para. 23 (d)).

Justifying this requirement the statement notes that,

> That [operating] classification is consistent with the view that, in general, cash flows from operating activities should reflect the cash effects of transactions and other events that enter into the determination of net income. (SFAS No. 95, para. 88).

When zero coupon notes, bonds or debentures (henceforth referred to collectively as bonds) are issued, the coupon rate of interest is set at zero, as the borrower pays no interest during the loan term. This is not to say that interest is not paid on the bonds. Rather, interest is included in the principal amount or face value of the bonds and is paid at maturity.

The definition of zero coupon bonds provided by the Securities and Exchange Commission reflects the view clearly that zero coupon bonds do, in fact, bear interest. The definition provided here is from the investor's as opposed to the issuer's point of view:

> Zero coupon bonds are bonds that do not pay interest during the life of the bonds. Instead, investors buy zero coupon bonds at a deep discount from their face value, which is the amount a bond will be worth when it "matures" or comes due. When a zero coupon bond matures, the investor will receive one lump sum equal to the initial investment plus interest that has accrued.[1]

Depending on the level of interest rates generally, on a $1 million zero-coupon bond offering due in five years, the borrower will receive proceeds of approximately $745,000, reflecting the present value of $1 million discounted at 6% per annum compounded semi-annually. Yet $1

[1] http://www.sec.gov/answers/zero.htm

million is still due at maturity. The $255,000 difference ($1 million less $745,000) reflects interest that is paid on the bonds at maturity.

When these zero coupon bonds are issued, the company records $745,000 in bond proceeds in the financing section of the statement of cash flow. Although coupon payments are not made during the life of the bonds, the company accrues interest expense on them. These interest costs lower net income and raise the amount at which the bonds are carried on the balance sheet. The amount of interest expense is calculated based on the yield to maturity indicated by market conditions in existence when the bonds were originally issued. Because there is no payment of cash for the amount of interest expense recognized, the operating section of the statement of cash flows requires an add back to net income in completing the reconciliation to cash flow provided by operating activities.

When the bonds reach maturity, the company pays the face value of the bonds to the bondholders. This face value includes the proceeds received from the bondholders when the bonds were originally issued, $745,000, plus the additional amount representing interest, $255,000.

In classifying this $1 million payment on the statement of cash flows, the original proceeds received when the bonds were issued, $745,000, should be reported as a financing use of cash. Following SFAS No. 95, the interest paid, $255,000, should be reported as an *operating* use of cash. Our research indicates, however, that many companies are reporting the entire face amount paid for zero coupon bonds, including principal *and* interest, as a financing use of cash. As a result, operating cash flow and free cash flow, calculated as operating cash flow less capital expenditures, are overstated.

A Closer Look

As another example, consider a 10-year, $100 million face value, zero coupon bond offering issued by a company on January 1, 1995 for $55.84 million to provide a yield to maturity of 6%, (For simplicity, annual compounding is assumed). At the time of issue, the bond's proceeds are reported as a financing source of cash. Bonds payable are recorded on the company's balance sheet at a carrying value of $55.84 million. Each year after issue, the company accrues interest expense for an amount equal to the carrying value of the bonds times the 6% yield to maturity. In 1995, $3.35 million in interest is recorded ($55.84 million x .06). Since there is no payment of interest, the amount of interest expense accrued on the bonds is added to the balance sheet carrying value of the bonds payable. Accordingly, bonds payable reflect a balance of $59.19 million at the end of 1995 and would increase each year, to $62.74 million at the end of 1996, $66.5 million at the end of 1997, etc., until it reached the $100 million face value on December 31, 2004. Reflecting the fact that it is a non-cash expense, on the statement of cash flows the amount of interest expense accrued is added back to net income in computing operating cash flow.

When redeemed for $100 million in 2004, the company removes bonds payable from the balance sheet. On the statement of cash flows, the $100 million payment is divided between the financing and operating sections. Reflecting the repayment of principal, repayment of the original proceeds received when the bonds were issued, $55.84 million, is reported as a

financing use of cash. Payment of the cumulative amount of interest accrued, $44.16 million ($100 million less $55.84 million), is reported as an operating use of cash.

Consider, however, a hypothetical example where repayment of the entire $100 million in bonds payable is reported as a financing use of cash. That is, instead of dividing repayment of the $100 million into a financing component for the principal amount borrowed, $55.84 million in this example, and an operating component for any interest paid, $44.16 million in this example, assume that the entire repayment amount were instead reported as a financing use of cash. Here, operating cash flow, and accordingly free cash flow, is overstated by the amount of interest paid.

The Study

It is our objective here to examine the recording of cash payments made to repurchase zero coupon bonds. That is, how are companies who issue zero coupon bonds and notes classifying cash payments made when those debt issues are repaid?

We began by identifying non-financial companies who reported the repurchase or repayment of zero coupon bonds on their annual Form 10K filings with the SEC. We then examined their statements of cash flows to determine the classification of the repayment amounts.

Typically, the companies studied did not provide information on the interest component of the amounts paid to redeem their zero coupon bonds. Accordingly, it was necessary for us to estimate the amount of interest paid. If a bond issue were redeemed at maturity, interest paid was calculated as the face amount of the bonds repaid at maturity less the net proceeds received at the time the bonds were originally issued. In every case we examined, however, the zero coupon bond was not redeemed at maturity but was repurchased at an earlier date. In these cases where bonds were repurchased before maturity, interest paid was calculated as the carrying value of the bonds at the time of repurchase less the net proceeds received at the time of original issue.

When not disclosed, the carrying value of the bonds at the time of repurchase was estimated as the net proceeds received at the time the bonds were issued plus interest accrued over the time period the bonds were outstanding calculated at the original yield to maturity. If sufficient information were not available to calculate the bonds' carrying value in this manner, we estimated it as the cash paid to repurchase the bonds less any resulting loss incurred or plus any gain realized at the time of the repurchase.

It is important to note that another approach for estimating the amount of interest paid on bonds repurchased before maturity would simply be to calculate the difference between the amount paid to repurchase the bonds and the original proceeds received at issue (i.e., the original amount borrowed). Such an approach, however, confounds the amount of interest paid on a bond issue with any financing gain or loss realized as part of the repurchase transaction. That is, a rise in interest rates or deterioration in credit quality may permit a bond issuer to repurchase all or part of a bond issue at a discount from carrying value, resulting in a gain. In our view, this gain is not a reduction in the interest paid on the debt issue, an operating activity, but rather a reduction in the cash paid to redeem the debt, a financing activity.

For example, assume that zero coupon bonds with a face amount of $60 million and a maturity date of December 2005 are issued in 2000 for $45 million. During 2004, after accruing unpaid

interest of $11 million, which boosted the bonds' carrying value to $56 million, the bonds are repurchased for $52 million. A gain on the repurchase and retirement of debt for $4 million is recorded. That $52 million payment represents an $11 million disbursement to pay interest and a $41 million payment to repurchase the principal component of the bonds ($45 million original amount borrowed less the gain of $4 million).

Results

The sample of companies who reported the repurchase of zero coupon bonds during the past three years is presented in Exhibit 1. As a point of clarification, all of the companies covered by our study and presented in the Exhibit repurchased their outstanding zero coupon bonds before maturity.

Exhibit 1: Cash Paid to Repurchase Zero Coupon Bonds Reported as Financing Cash Flows (Amounts in thousands)

Company	Year	Reported Operating Cash Flow	Estimated Interest Paid[1]	Adjusted Operating Cash Flow[2]	% change	Cash Paid to Repurchase Debt[3]
Anixter International, Inc.	1/2/2004	$125,100	($12,400)	$112,700	-10%	($72,200)
	1/3/2003	$165,700	($17,225)	$148,475	-10%	($107,200)
Arrow Electronics, Inc.	12/31/2004	$187,506	($41,020)	$146,486	-22%	($329,639)
	12/31/2003	$291,558	($15,782)	$275,776	-5%	($168,426)
Aspect Communications Corp.	12/31/2003	$99,119	($32,511)	$66,608	-33%	($129,409)
	12/31/2002	$73,980	($14,142)	$59,838	-19%	($59,769)
Citrix Systems, Inc.	12/31/2004	$265,281	($89,899)	$175,382	-34%	($355,659)
Comcast Holdings Corp.	12/31/2003	$1,336,000	($2,630)	$1,333,370	-0.07%	($86,000)
	12/31/2002	$2,316,000	($18,886)	$2,297,114	-1%	($1,023,000)
	12/31/2001	$1,169,000	($868)	$1,168,132	-0.2%	($70,300)
Corning, Inc.	12/31/2004	$1,009,000	($7,968)	$1,001,032	-1%	($117,000)
	12/31/2003	$133,000	($59,845)	$73,155	-45%	($1,121,000)
	12/31/2002	($324,000)	($14,429)	($338,429)	-4%	($308,000)
Hewlett-Packard Company	10/31/2002	$5,444,000	($19,791)	$5,424,209	0%	($127,000)
	10/31/2001	$2,573,000	($83,667)	$2,489,333	-3%	($640,000)
Interpublic Group Of Companies, Inc.	12/31/2003	$502,000	($18,704)	$483,296	-4%	($581,000)
Jones Apparel Group, Inc.	12/31/2004	$461,900	($53,459)	$408,441	-12%	($446,600)
Mcafee, Inc.	12/31/2003	$156,304	($37,105)	$119,199	-24%	($177,289)
	12/31/2002	$195,093	($12,552)	$182,541	-6%	($66,175)
	12/31/2001	$145,989	($28,360)	$117,629	-19%	($173,708)
Nabors Industries Ltd.	12/31/2003	$395,831	($35,336)	$360,495	-9%	($494,900)
Novellus Systems, Inc.	12/31/2002	$214,914	($17,600)	$197,314	-8%	($879,500)
Office Depot, Inc.	12/28/2002	$701,897	($90,045)	$611,852	-13%	($243,304)
PerkinElmer, Inc.	12/31/2003	$167,475	($18,608)	$148,867	-11%	($189,901)
	12/31/2002	$107,704	($20,751)	$86,953	-19%	($304,322)
Pride International, Inc.	12/31/2003	$116,435	($31,007)	$85,428	-27%	($210,200)
	12/31/2002	$155,301	($22,273)	$133,028	-14%	($245,500)
	12/31/2001	$256,563	($9,338)	$247,225	-4%	($56,200)
Transocean, Inc.	12/31/2003	$525,800	($52,656)	$473,144	-10%	($527,200)
Tyco International Ltd.	9/30/2004	$5,384,000	($163,805)	$5,220,195	-3%	($2,479,600)
	9/30/2003	$5,309,000	($152,886)	$5,156,114	-3%	($2,912,900)
Valassis Communications, Inc.	12/31/2004	$76,819	($3,311)	$73,508	-4%	($38,700)
	12/31/2003	$122,720	($8,157)	$114,563	-7%	($111,000)
Western Digital Corp.	6/27/2003	$277,900	($20,043)	$257,857	-7%	($88,300)
	6/28/2002	$82,800	($3,327)	$79,473	-4%	($17,600)

1 Interest was estimated by subtracting the original proceeds received when the bonds were issued from their carrying value at the time of repurchase. Carrying value was estimated by applying the yield to maturity to the proceeds received when the bonds were originally issued. If sufficient information were not available to estimate a bond issue's carrying value in this manner, we estimated it by adding any gain on repurchase to the repurchase amount or subtracting any loss from the repurchase amount.

2 Calculated as Reported Operating Cash Flow less Estimated Interest Paid.

3 Reported as Financing Use of Cash

Exhibit 1 presents reported operating cash flow and total cash paid to repurchase zero coupon bonds. In every case, the total cash paid to repurchase the outstanding zero coupon debt was reported as a financing use of cash.

We contacted the companies listed above, to seek an explanation on their practice of recording the interest payments on zero coupon bonds as a financing use of cash. The replies we received stated that the companies consider the excess amount paid over the principal as '*economic value to retire debt*' as one Director of Investor Relations termed it, and not as cash outflow due to interest on zero coupon bonds. This explanation is not a compelling one considering the fact that most companies use terms such as '*Non-cash interest expense on debentures*' or '*Accreted interest on zero coupon, convertible subordinated notes*' when adding back the interest on zero coupon bonds to net income in the operating section of the statement of cash flow.

The amount of interest we estimated to have been paid on the bonds at the time of repurchase is presented in a separate column. Subtracting this interest payment amount from reported operating cash flow yields our adjusted operating cash flow amount. The % change column represents the percentage reduction in reported operating cash flow that would result from the inclusion of interest paid in operating cash flow.

The mean reduction in reported operating cash flow caused by the inclusion of interest paid on zero coupon bonds averaged approximately 11% but ranged as high as 45%.

Consider Arrow Electronics, Inc., during the year ended December 31, 2004, the company repurchased $319.8 million accreted value of its zero coupon convertible debentures due in 2021, for approximately $330 million. The company reported this total cash outflow of $330 million, which includes an estimated interest component of $41 million, in the financing section of the statement of cash flows. Had the company classified the interest paid on the zero coupon debentures in the operating section of the statement of cash flows, the reported cash flows from operating activities would have been lower by approximately 22%. For the year ended December 31, 2003, the company paid approximately $168 million to repurchase zero coupon debentures with an accreted value of $169 million. Arrow Electronics, Inc. reported the total cash outflow of $168 used to repurchase the debentures as a financing use of cash. The estimated interest on these zero coupon debentures was about $16 million, or 5% of the reported cash flows from operating activities. Had the interest component been classified as an operating use of cash, the reported cash flows from operating activities would have been reduced from $292 million to $276 million.

In February 2001, Jones Apparel Group, Inc., issued zero coupon convertible notes with a yield to maturity of 3.5% and face value of $805.6 million. For the years ended December 31, 2001, 2002, 2003 and 2004 the company added back $13 million, $14.7 million, $15.2 million and $1.3 million to net income for non-cash interest expense or '*amortization of original issue discount*' on the zero coupon notes, to arrive at the cash flows provided by operating activities. In the year ended December 2004, the company redeemed all the zero coupon notes for $446.6 million, all of which is reported in the financing section of the statement of cash flows. Since the company did not incur cash outflows due to interest on zero coupon notes for the years 2001 through 2003 it rightly added back the interest expense to the net income as a non-cash expense. In the year

2004, however, when the notes were redeemed, the company incurred a cash outflow for the interest accrued for the years 2001 through 2003 in addition to interest expense for 2004. Had the company recorded cash paid towards the interest component on the notes as an operating use of cash, it would have been reduced by approximately 12%.

Mcafee, Inc. is another company that classifies cash paid towards interest on zero coupon debentures in the financing section of the statement of cash flows. The company paid approximately $177 million in 2003, $66 million in 2002, and $174 million in 2001 to redeem zero coupon debentures, with accreted value of $177.30 million, $67.30 million and $179.70 respectively. Classification of cash paid for the accrued interest on zero coupon debentures as operating would have lowered the reported cash provided by operating activities by $ 37 million or 24% in 2003, $13 million or 6% in 2002, and $28 million or 19% in 2001.

In its 2003, 10-K annual filing with the SEC, PerkinElmer, Inc. reported net cash generated by operations of $167.5 million in 2003 and $107.7 million in 2002. The company attributed the improvement in cash provided by operating activities to better working capital management. However, during those two years the company also classified as financing cash outflow an estimated interest payment on zero coupon debentures of approximately $19 million in 2003 and $21 million in 2002. Had the company treated this interest payment as an operating use of cash, the cash flows from operating activities would have been lower than reported by 11% in 2003 and 19% in 2002.

Conclusion:

SFAS No. 95 requires the payment of interest on debt to be classified as an operating use of cash so that it reflects the cash effects of transactions and other events that enter into the determination of net income. Since the amount paid in excess of the principal amount received at the time the zero coupon bonds are issued represents interest, it must be classified as an operating use of cash. We believe that such a classification of interest on zero coupon debentures as financing is not consistent with GAAP and hurts the comparability of operating cash flows across companies.

We found numerous examples of companies that reported interest paid on the repurchase of zero coupon debentures in the financing section of the cash flow statement. We believe that, to achieve a clearer picture of sustainable operating cash flow, interest paid on zero coupon debentures should be classified as an operating use of cash. Analysts will want to consider whether adjustments to operating cash flow are needed before using that measure in analysis, for example, in computing free cash flow. The Financial Accounting Standards Board and the SEC may also want to take note of this misinterpretation of GAAP for cash flow reporting.