Estimating free cash flows and valuing a growth company

Received (in revised form): 2nd May, 2003

Nancy L. Beneda

is an assistant professor of finance at the University of North Dakota. Dr Beneda teaches courses in corporate valuation and corporate risk management. Her areas of research also include corporate valuation, risk management and investing. She obtained her PhD in finance from St Louis University and became a Certified Public Accountant in 1989. Prior to her career in academia, Dr Beneda earned the rank of manager at Price Waterhouse. She has published a multitude of articles in such journals as Bank Accounting & Finance, CPA Journal, Credit and Financial Management Review, Journal of Asset Management, Journal of Business and Economic Perspectives and Journal of Financial Regulation and Compliance.

University of North Dakota, College of Business and Public Administration, Finance Department, PO Box 7096, Grand Forks, ND 58202-7096, USA Tel: +1 701 777 4690; Fax: +1 701 777 5099; e-mail: nancy.beneda@mail.business.und.edu

Abstract Financial analysts should be primarily concerned about the operating performance of a firm when considering whether to invest in a company. In light of the recent Enron bankruptcy, the largest in US history, financial managers are reviewing and evaluating valuation techniques and procedures. These techniques, used in conjunction with qualitative evaluation and judgment, may help financial managers to avoid some of the valuation mistakes which occurred in the Enron debacle. This paper sets out a simple, but detailed, step-by-step procedure for computing free cash flows and valuing a growth company. An illustration of the computation of free cash flows and corporate valuation, using Compustat financial statements, for Health Management Associates is used to illustrate the procedures. Health Management Associates was reported in the 12th August, 2002, issue of Fortune Magazine as one of the top 40 growth companies traded. Use of the techniques presented in this paper will bring to light the degree of success of the strategic direction and the ongoing performance of the managers of the company. The application presented would be especially useful to investors who hold growth stocks in their portfolios, equity research analysts, venture capitalists and managers of growth firms.

Keywords: bankruptcy, corporate valuation, Enron, dividend discount model, free cash flows, growth companies, operating performance, start-up companies

Introduction and contribution to the literature

On 2nd December, 2001, Enron Corporation filed for Chapter 11 bankruptcy protection, the largest bankruptcy petition in US history. Enron executives, through a variety of accounting tricks, were able to mislead their employees and the general public about the company's financial position. The use of partnerships, reported as assets, on the balance sheet of Enron permitted company executives to hide large amounts of debt and report excessive value to metaphysical derivative instruments.

Accounting scandal has been named as the culprit in the Enron debacle,

suggesting that perhaps the employees and the public are the unknowing and helpless victims. These events and the lessons learned, however, have led financial managers to review and evaluate valuation techniques and procedures. The value of a firm's assets is based on its capacity to generate cash flows from these assets and the uncertainty (risk) associated with these cash flows. This proposition, which is by no means a new concept, lies at the core of valuation. Projecting and estimating cash flows and risk requires qualitative evaluation and judgment, as well as quantitative procedures. The focus of this paper and the contribution to the literature is a simple, but detailed, step-by-step procedure for computing the future expected free cash flows and valuing a growth company. These techniques, used in conjunction with qualitative evaluation and judgment, may help financial managers to avoid some of the valuation mistakes which occurred in the Enron debacle.

An illustration of the computation of free cash flows and corporate valuation, using Compustat financial statements, for Health Management Associates is used to illustrate the procedures. Health Management Associates was reported in the 12th August, 2002, issue of *Fortune Magazine* as one of the top 40 growth companies traded. The application presented would be especially useful to investors who hold growth stocks in their portfolios, equity research analysts, venture capitalists and managers of growth firms.

Literature review

Two commonly used methods of valuing a company are the dividend discount model (DDM) and the corporate valuation model (Brigham and Davies, 2002). The DDM calculates the value of the equity investment in the company as the present value of the expected future dividends discounted at the cost of equity capital (Brigham and Davies, 2002). See Beneda and Lee (2002) for a discussion of the cost of equity capital.

While the DDM exhibits key fundamental concepts about valuation (ie the DDM discounts the future expected dividends for equity valuation), it also has serious limitations. Foremost is that an increasing number of US companies choose to hold additional cash to buy back shares of stock rather than pay dividends. Thus the dividends, used in the model to represent the cash flow to equity investors, do not actually represent the cash flows available to equity holders. According to Damodaran (2001b), the proportion of cash returned to stockholders in the form of stock buybacks has climbed from 32 per cent in 1989 to about 50 per cent in 1998. Further, the DDM is not very useful in valuing growth companies, since growth companies usually do not pay dividends. As long as internal opportunities and acquisitions are attractive, the initiation of dividends will be postponed, and this makes the dividend growth model of little use for valuing start-up, expansion and growth companies. See Beneda (2002a, b) for a discussion of the performance of growth companies.

There is substantial literature and agreement between professionals regarding the shortcomings of using the DDM for valuation purposes. Some of the literature to date includes Brigham and Davies (2002), Beneda (2002), Damodaran (2001b), Payne and Finch (1999) and Farrell (1985). The corporate valuation model (Brigham and Davies, 2002; Damodaran, 2001a, b) also values corporate equity but the approach focuses on first computing the value of the company's operations. According to the corporate valuation model, the

current value of operations is the present value of the expected future free cash flows discounted at the weighted average cost of capital.

Although the corporate valuation model eliminates almost all the shortcomings of the DDM and can be used to value companies that do not pay any dividends, it is rarely seen in application in the literature.

Strengths of the corporate valuation model

The corporate valuation model uses the expected future free cash flows discounted at the weighted average cost of capital to find the value of the current operations of a company, project or division. The expected future free cash flows represent the cash flow left over after operating expenses, taxes and reinvestment needs but before any debt payments. Thus it is the cash flow from operations available to all investors in the company (debt holders and stockholders). The value of non-operating assets is then added to the value of operations. Interest-bearing liabilities and preferred stock are subtracted. The resulting amount is the value of the equity investment in the company.

Apart from discounting the correct cash flows for valuation and being useful in valuing a growth company, there are several other advantages worth observing of using the corporate valuation model rather than the DDM. First, the corporate valuation model separates operating performance from non-operating performance. Financial analysts are more concerned about measuring the operating performance of the company. The performance of corporate managers and the strategic positioning of the company will be reflected in an examination of the company's long-term operating performance.

Secondly, even dividend-paying companies will not be able to use the dividend growth model to value divisions and projects. A corporation's value depends on the cash flows from many different assets, and on the actions of many managers. The corporate valuation model permits firms with different divisions and many assets to measure the effects of their decisions on corporate value. The discounted dividend model would not be much use in valuing divisions and projects, since divisions and projects do not pay dividends.

Thirdly, the corporate valuation model is designed to allow for significant changes in debt, typical for growth companies. Since the total value of the firm is calculated by discounting the expected future free cash flows, it is independent of the amount of debt in the firm's capital structure. Thus, when the debt is subtracted from the total firm value, the true value of equity is accurately captured at any point in time.

Fourthly, using the corporate valuation model generates useful information in valuing a company. Return on invested capital (ROIC) and economic value added (EVA) can be determined from the information generated in the corporate valuation model. These valuation metrics are useful to the managers of the company as well as to external financial analysts. ROIC provides a true measure of the return earned on the capital employed in the business. It is the after-tax operating income divided by the amount of operating invested capital at the beginning of the year. The EVA, comparable to ROIC, is a measure of the dollar of economic value created by a company in a single year. The EVA is computed by subtracting a capital charge (operating invested capital × weighted average cost of capital) from after-tax operating income.

Fifthly, the corporate valuation model

can be used to evaluate the effects of alternative strategies on a firm's values. This is referred to as a value-based management system (Brigham and Davies, 2002). Useful as a guide in decision making, value-based management is also useful for projecting future financing needs, especially for companies whose needs are changing. Practising value-based management is not possible with the dividend growth model, since this model incorporates only dividends in the model.

Finally, another important aspect of value-based management is its use in corporate governance. The corporate valuation model shows how corporate decisions affect stockholders. Corporate decisions are made by managers, however, not stockholders, and maximising shareholder wealth is not the same as individual managers' maximising their own 'satisfaction'. Thus a key aspect of value-based management is ensuring that managers focus on the goal of stockholder wealth maximisation.

Models

Calculating free cash flows

As part of the corporate valuation model, free cash flows to the firm must be computed. Free cash flow is the cash flow from operations actually available for distribution to investors of the company after all the investments in fixed assets and working capital necessary to sustain ongoing operations have been subtracted from the balance sheet.

Free cash flow to firm = EBIT(1 - t) + depreciation and amortisation - increase in operating working capital - capital expenditures (1)

Earnings before interest and taxes (EBIT) is the operating income of the company.

Thus EBIT (1-t) is the after-tax operating income. Depreciation and amortisation are non-cash charges, thus they are added back to the after-tax operating income of the company.

Change in working capital is the increase (decrease) in operating current assets less the increase (decrease) in operating (non-interest-bearing) current liabilities. The increase in operating working capital is the amount of working capital acquired with investor-supplied funds. Operating working capital is the current assets used in operations less funds acquired internally from trade credit and accruals. Generally, operating working capital includes cash plus accounts receivable plus inventories plus prepaid expenses plus other current operating assets less accounts payable, accruals and other current operating liabilities.

The capital expenditure for a given period represents the investment or increase in long-term operating capital for that period. Long-term operating capital includes net property, plant and equipment, intangibles and other long-term operating assets net of other long-term operating liabilities.

Calculating current value of operations

The corporate valuation model calculates the current value of operations as the present value of the expected future free cash flows (FCF) (with an expected constant growth rate, gFCF) discounted at the weighted average cost of capital (WACC).

Current value of operations = current
$$FCF \times (1 + g_{FCF})/(WACC - g_{FCF})$$
 (2)

The expected future FCF represents the cash flow left over after operating expenses, taxes and reinvestment needs but before any debt payments. Thus, it is

the cash flow from operations available to all investors in the company (debt holders and stockholders).

Super-normal corporate valuation model

Companies which are in their start-up phase or have high growth will typically have negative free cash flows or free cash flows that exhibit temporary high growth. The negative free cash flow means the company is obtaining new funds from investors (bondholders and/or stockholders). If free cash flows are negative or are exhibiting temporary high growth, Equation (2) cannot be used to value the company's operations. Equation (2) requires that the growth rate be constant into the foreseeable future. In this case, the 'super-normal corporate valuation model' should be used. The super-normal corporate valuation model assumes that free cash flows become positive and, as growth stabilises, a terminal value can be computed which represents the value of an entity at the end of the forecast period. The terminal value represents the present value of the firm's expected future cash flows from operations after the terminal date. The value of operations is then the present value of the free cash flows and the terminal value, discounted at the weighted average cost of capital.

Current value of operations = current $FCF \times (1 + g_{FCF})/(1 + WACC)$ + current $FCF \times (1 + g_{FCF})^2/(1 + WACC)^2 + ... + current <math>FCF \times (1 + g_{FCF})^N/(1 + WACC)^N$ + value of operations at terminal date/ $(1 + WACC)^N$ (3

Calculating the value of equity

The value of non-operating assets is then added to the value of operations. The current value of non-operating assets

includes investments in marketable securities and long-term investments. Interest-bearing liabilities and preferred stock are subtracted. The resulting amount is the current value to the stockholders of the company, which can be divided by the number of shares outstanding to determine a stock price valuation.

Current value of equity = current value of operations + current value of non-operating assets - interest-bearing liabilities - preferred stock (4)

An illustration: Health Management Associates

Health Management Associates (HMA) was selected to illustrate the corporate valuation model. This company was reported in Fortune Magazine as one of the top 40 growth companies currently being traded. The company is categorised as a small to mid-size company which has a market capitalisation of \$4.729bn. The growth rate for HMA in earnings over the next five years is projected as 15.5 per cent by Value Line and 15 per cent by finance.yahoo.com. The growth rate of the S&P 500 and of the health products and services sector over the next five years is projected at 12.2 per cent and 11.3 per cent, respectively, by yahoo.finance.com. The growth of this company is a result of several factors. First, the projected growth rate of the health-care industry is very high (16 per cent over the next five years was reported by finance.yahoo.com as of 4th September, 2002). Second, Health Management Associates has many of its facilities positioned in Florida. Demographics in the sunshine state are growing increasingly favourable, as more and more Americans reach retirement and head south.

ed capital computation (\$m	1)
	ed capital computation (\$m

Operating invested capital	30th Sept, 2001	30th Sept, 2000	30th Sept, 1999	30th Sept, 1998	30th Sept, 1997
Operating current assets	565	487	426	309	236
Non-interest bearing current liabilities	181	163	166	112	75
Operating working capital	384	324	260	197	161
Net property, plant, and equipment	1,089	1,065	913	738	473
Intangibles	251	195	159	47	10
Other operating assets net of other operating liabilities	-1	7	3	-42	-7
Long-term operating capital	1,339	1,267	1,075	743	476
Total operating invested capital	1,723	1,591	1,335	940	637
Non-operating assets	0	0	0	0	0
Total investor funds	1,723	1,591	1,335	940	637
Equity	1,254	1,030	891	757	560
Deferred income taxes	33	34	33	40	19
All interest-bearing debt	436	527	411	143	58
Total investor funds	1,723	1,591	1,335	940	637

Operating invested capital

As previously stated, the corporate valuation model requires that the operating assets be separated from the non-operating assets. This is useful, since companies can influence the value of their operating assets, but the value of non-operating assets is largely out of their direct control.

It is very useful to prepare a report of operating invested capital to show the annual investment in operating capital. The operating invested capital for the years ending 30th September, 1997–2001, for HMA, is shown in Table 1. The amounts shown in the table were calculated from amounts shown in the balance sheet of Health Management Associates in the Appendix. Operating invested capital represents the investment in operating assets less operating liabilities, by the equity investors and creditors of the firm.

Operating invested capital, plus any non-operating assets, such as marketable securities or long-term investments, measures the total amount invested by the company's investors. This amount is also referred to as total investor funds. Total investor funds can also be calculated from the liability side of the

balance sheet as the sum of all equity (plus quasi-equity items such as deferred taxes) and interest-bearing debt. The presentation of total investor funds in this manner is useful in illustrating how the company's assets are financed (ie debt vs equity). Total investor funds for each of the years ending 30th September, 1997–2001, are presented in Table 1.

Free cash flows

Table 2 shows the computation of free cash flows for the years ending 30th June, 1998–2001 (see Equation 1). The computation of free cash flow starts with operating cash flow which is the after-tax operating income of the company adjusted to a cash basis by adding depreciation and amortisation. The increases in operating working capital and capital expenditures are subtracted from the operating cash flow. Any other increases in other long-term operating assets, net of other long-term operating liabilities should also be subtracted.

Free cash flows can be adjusted to obtain the total cash flow to investors. Adjustment items include after-tax interest income, increases in marketable securities and other non-operating cash

Table 2 Health Management Associates - free cash flow computation (\$m)

Free cash flow	30th Sept, 2001	30th Sept, 2000	30th Sept, 1999	30th Sept 1998
EBIT	358	301	255	230
Tax on EBIT	-141	-121	-102	-90
Depreciation/amortisation	91	64	52	44
Operating cash flow	308	244	205	184
Increase in operating working capital	60	64	63	36
Capital expenditures	171	252	339	346
Increase in other operating assets, net of other operating liabilities	-8	4	45	-35
Gross investment in operations	223	320	447	347
Free cash flow	85	-76	-242	-163
After-tax non-operating income/expense	-10	2	3	1
Cash flow available to investors	75	-74	-239	-162
Financing flow				
After-tax interest expense	12	17	7	4
Decrease/increase in debt	91	-116	-268	-85
Decrease/increase in deferred taxes	0	-2	7	-21
Decrease/increase in common stock	-31	-15	-54	-60
Share repurchases	3	42	69	0
Dividends	0	0	0	0
Decrease/increase in notes payable	75	-74	-239	-162
Total financing flow				
Provision for income tax (from income statement)	126	108	97	88
Tax shield on interest expenses	8	12	4	2
Tax on non-operating income/expense	7	1	1	0
Taxes on EBIT	141	121	102	90

flows. Total cash flow to investors calculated in this way should equal total financing flow. Total financing flow consists of cash flows to the investors (debt holders and stockholders). This financing flow includes such items as after-tax interest expense, changes in interest-bearing liabilities, dividend payments and share repurchases, or new stock issues. Whereas cash flow available to investors shows the source of funds from operations, total financing flows shows how these funds flow to the investors. The total financing flows for HMA for the years ending 30th September, 1998-2001, are also shown in Table 2.

HMA has a positive free cash flow for 2001, but the free cash flows for the previous three years were negative. The negative free cash flows in the years 1998–2000 indicate that funds flowed into the company from investors and supported the high growth of this

company over this time period. Since the free cash flow is positive for 2001, the company is probably in or nearing the end of a high growth phase. Further, Value Line and yahoo.com both indicate high growth rates for this company over the next five years of 15 per cent and 15.5 per cent respectively. Thus the constant growth corporate valuation model cannot be used for this company. Instead, the super-normal corporate valuation will be used. The long-term growth rate is typically the growth rate of the sector which is reported by yahoo as 11.3 per cent.

Return on invested capital and economic value added

Companies which have negative free cash flows because they are experiencing high growth, should still experience a positive and strong return on invested capital (ROIC). The economic value

Table 3 Health Management Associates — return on invested capital computation (\$m)

Return on invested capital	30th Sept, 2001	30th Sept, 2000	30th Sept, 1999	30th Sept, 1998
EBIT	358	301	255	230
Tax on EBIT	-141	-121	-102	-90
NOPAT	217	180	153	140
Operating invested capital (beginning)	1,591	1,335	940	637
Return on invested capital (%)	13.6	13.5	16.3	21.9

Table 4 Health Management Associates — economic value added (\$m)

Economic value added	30th Sept, 2001	30th Sept, 2000	30th Sept, 1999	30th Sept, 1998
NOPAT	217	180	153	140
Operating Invested Capital	1,591	1,335	940	637
Weighted average cost of capital (%)	13.4	13.4	13.4	13.4
Capital charge	213	179	126	85
Economic value added	4	1	27	75

Computation for weighted average cost of capital (WACC):

WACC = $D/(D+E) \times k_d \times (1-t) + E/(D+E) \times k_e$

 $WACC = [0.118 \times 0.0735 \times (1 - 0.4)] + [0.882 \times 0.146] = 0.00520 + 0.12863 = 0.13383 = 13.4 \text{ per cent}$

Components for computation of WACC:

 $k_d = \text{cost of debt} = 7.35 \text{ per cent}$

 $k_{\rm e} = {\rm cost}$ of equity = 14.6 per cent D = market value debt (\$m) = \$631m

E = market value equity (\$m) = \$4,729 m

t = marginal tax rate = 40 per cent

The cost of debt, $k_{\rm d}$, was computed by adding the default risk spread to the risk-free treasury security yield as described in Damodaran (2001). The 73-year average of the 30-year treasury bond yields was used as the risk-free rate. This rate was 5.5 per cent. An average of the default risk-free spreads for A and A3 ratings, as reported by Standard & Poor's and Moody's, 1.8 and 1.9 respectively, was used.

A weighted average cost of equity was computed using the capital asset pricing model (CAPM), with a weight of two, and the bond yield plus market risk premium approach, with a weight of one, as described in Brigham and Davies (2002). The 73-year average 30 yield treasury bond rate of 5.5 per cent was used as the risk-free rate in the CAPM. A 73-year historical average of the excess average market return for small companies over the long-term government bond rate, of 12.1 per cent was used as the market risk premium in the CAPM. The average of the betas, 1.0 and 0.77 as reported by Value Line and Compustat, respectively, was also used in the model. For the bond yield plus market risk premium approach, the bond yield of 7.35 per cent was used with a market risk premium of 4 per cent.

The market value of debt was proxied by the book value of debt obtained from the most recent balance sheet, dated 30th June, 2002, and of \$631m. The market value of equity was computed as the number of outstanding shares (240.308m shares) as of 3rd September, 2002, times the average weekly stock price (\$19.68) over the period 5th June-3rd September, 2002.

added (EVA) should also be positive and strong. Table 3 shows the ROIC and Table 4 shows the EVA for HMA for the years ending 30th September, 1998-2001. The decreasing ROIC and decreasing EVA over the four-year period, in conjunction with the current year positive free cash flow seen in Table 2, is a further indication that the high growth of this company is slowing. The computation of EVA requires a

determination of the WACC for HMA. The computation of the WACC is fully described in Table 4.

Super-normal corporate valuation model

Using an average of the expected future five-year growth rates for HMA reported by Value Line and yahoo.finance.com, The free cash flows are projected for five years (2003-07) in Table 5. At the end

Table 5 Health Management Associates — super-normal growth corporate valuation model (\$m)

	30th Sept,	30th Sept,	30th Sept,	30th Sept,	30th Sept
	2003	2004	2005	2006	2007
Projected free cash flows	112.9ª	130.1ª	149.9 ^a	172.7 ^a	199.1 ^a

Cash flows (years 2003 to 2007) and 2007 terminal value discounted	d at WACC	C
--	-----------	---

Year	Present value as of September 2002 (\$m)
2003	99.6
2004	101.2
2005	102.8
2006	104.4
2007	106.2
2007 terminal value:	[199.1(1+0.113)]/(0.134-0.113=\$9481.0m]
Terminal value discounted to present	
Current value of operations	5,569.9
Computation of stock price:	
Current value of operations	\$5,569.9m
Value of non-operating assets	0.0
Interest-bearing debt	\$631.0m
Value of equity	\$4,938.9m
Number shares outstanding	240,308,000 shares
Stock valuation (current)	\$20.55 per share

^aA growth rate of 15.25 per cent is used to project the free cash flows. This was calculated as the average of the expected future five-year earnings growth rates of 15.5 per cent and 15 per cent reported by Value Line and finance.yahoo.com, respectively.

of this five-year high-growth period, it is assumed that growth stabilises to the sector growth rate of 11.3 per cent. Thus, one would then expect free cash flows to grow at a constant rate of 11.3 per cent annually after 2007. Assuming a constant growth rate after 2007 of 11.3 per cent, a terminal value is computed as of 30th September, 2007. The present value of the projected free cash flows and the present value of the terminal value is computed as shown in Table 5. This amount, \$5,569.9m, is the current value of operations as of 30th September, 2002. To compute the value of equity, non-operating assets are added and interest-bearing debt is subtracted from the current value of operations. The interest-bearing debt was obtained from the most recent quarterly financial statement, as of 30th June, 2002, reported on vahoo.finance.com.

As shown in Table 5, this model determines that the value of equity is \$4,938.9m, with a current stock price of

\$20.55 per share. The value of equity calculated by the actual stock price of \$19.21 as of 3rd September, 2002, was \$4,729m. The results of the valuation of this company, using the corporate valuation model in this paper, indicate that the company may be slightly undervalued. This indicates that this company may be a good addition to an investment portfolio.

Summary

The purpose of the paper has been to shed some light on the use of free cash flows in valuing corporations, especially companies which are starting up or are in a very high growth phase. By showing the return to investors from their investment in the operations of a company, operating performance can be more precisely evaluated. Use of the techniques presented in this paper will bring to light the degree of success of the strategic direction and the ongoing

performance of the managers of the company. Financial analysts should be primarily concerned about the operating performance of a company when considering whether to invest in a company. These techniques, used in conjunction with qualitative evaluation and judgment, may help financial managers to avoid some of the valuation mistakes which occurred in the Enron debacle. The application presented would be especially useful to investors who hold growth stocks in their portfolios, equity research analysts, venture capitalists and managers of growth firms.

References

Beneda, N. (2002a) 'Growth Stocks Outperform Value Stocks Over the Long Term', Journal of Asset Management, 3(2), 112–23.

- Beneda, N. (2002b) 'Investing in Growth Stocks May Not Pay Off', CPA Journal, September.
- Beneda, N. and Lee, J. (2002) 'The Cost of Equity Capital Using the Constant Dividend Growth Model: A Simple Application', *The Credit and Financial Management Review*, 8(2), 41–52.
- Brigham, E. E and Davies, P. R. (2002) Intermediate Financial Management, 7th edn, The Dryden Press, New York.
- Copeland, T., Koller, T., and Murrin, J. (2000) Valuation: Measuring and Managing the Value of Companies, 3rd edn, John Wiley, New York.
- Damodaran, A. (2001a) Corporate Finance Theory and Practice, 2nd edn, John Wiley, New York.
- Damodaran, A. (2001b) *The Dark Side of Valuation*, Prentice Hall, Upper Saddle River, NJ.
- Farrell, J. Jr (1985) 'The Dividend Discount Model: A Primer', Financial Analysts Journal, November/December, 16–25.
- Jacobs, B. I. and Levy, K. N. (1988) 'On the Value of "Value"', Financial Analysis Journal, July/August, 47–62.
- Payne, T. and Finch, J. (1999) 'Effective Teaching and Use of the Constant Growth Dividend Discount Model', Financial Services Review, 8, 283–91.

Appendix: Income statement and balance sheet obtained from Compustat for Health Management Associates, 1997 to 2001

	Annual Income Statement (\$m)						
	Sept 01	Sept 00	Sept 99	Sept 98	Sept 97		
Sales	1,879.8	1,577.8	1,355.6	1,138.8	895.5		
Cost of goods sold	-1,431.2	-1,212.7	-1,048.9	-864.9	-676.9		
Gross profit	448.6	365.1	306.7	273.9	218.6		
Depreciation and amortisation	-90.7	-63.7	-51.7	-43.9	-36.6		
Operating profit	357.9	301.4	255.0	230.0	182.0		
Interest expense	-19.9	-28.5	-12.6	-6.1	-3.7		
Non-operating income	0.0	3.1	4.3	1.4	0.0		
Special items	-17.0	0.0	0.0	0.0	0.0		
Pre-tax income	321.0	276.0	246.7	225.3	178.3		
Income taxes	-126.0	-108.3	-96.9	-88.5	-70.0		
Net income	195.0	167.7	149.8	136.8	108.3		

Annual Income Statement (\$m)

	Ailliuai IIICO	Annual income Statement (\$\pi\ti)			
	Sept 01	Sept 00	Sept 99	Sept 98	Sept 97
Assets					
Cash and equivalents	72.2	19.0	14.7	14.1	68.6
Net receivables	380.1	372.7	338.9	243.5	132.9
Inventories	50.1	39.2	32.0	24.4	15.6
Other current assets	62.8	56.1	39.8	26.7	19.0
Total current assets	565.2	487.0	425.5	308.7	236.1
Gross plant, prop., equip.	1,453.9	1,352.8	1,142.5	926.0	613.8
Accumulated depreciation	-364.5	-287.5	-230.0	-188.2	-141.0
Net plant, prop., equip	1,089.4	1,065.3	912.5	737.8	472.7
Intangibles	251.3	195.0	158.5	46.6	9.7
Other assets	35.7	24.8	20.8	19.0	9.1
Total assets	1,941.6	1,772.1	1517.3	1,112.1	727.6
Liabilities					
Long-term debt due in one y	ear 6.8	6.5	9.4	8.5	8.3
Accounts payable	91.9	78.3	73.6	44.3	33.9
Taxes payable	1.4	2.1	20.2	10.2	3.2
Other current liabilities	88.0	82.9	72.0	57.5	37.5
Total current liabilities	188.1	169.8	175.2	120.5	82.9
Long-term debt	429.0	520.2	401.5	134.2	49.7
Deferred taxes	34.3	34.5	32.6	39.6	18.7
Other liabilities	36.6	17.6	17.5	60.9	16.1
Total liabilities	688.0	742.1	626.8	355.2	167.4
Equity					
Common stock	2.6	2.6	2.5	2.5	1.1
Capital surplus	340.2	308.8	294.6	241.7	183.3
Retained earnings	1,025.1	830.2	662.5	512.7	375.8
Less treasury stock	-114.3	-111.6	-69.1	-0.0	-0.0
Total liabilities and equity	1941.6	1,772.1	1,517.3	1,112.1	727.6