Cash flows – Part III: Cash management ratios

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Introduction

Cash management ratios are used to determine the ability of an organisation to generate cash internally (through its core operations) in order to cover its operational activities, short-term debt obligations and future growth aspirations.

Part III of the Cash Flow series will demonstrate the use of a selection of cash management ratios using Timbercorp data as introduced in Part II.

Extract from Balance Sheet as at 30 September 2008	**$millions**	
	2008	**2007**
Cash and cash equivalents	$32.6	$45.1
Trade and other receivables	$104.0	$95.0
Inventories	$6.1	$12.4
Current assets	$630.8	$340.8
Total assets	$1,729.4	$1,599.3
Trade and other payables	$72.5	$105.5
Current liabilities	$684.2	$418.4
Non-current liabilities	$449.6	$661.1
Total liabilities	$1,133.8	$1,079.5
Total equity	$595.6	$519.8

Income Statement for financial year ended 30 September 2008	**$millions**	
	2008	**2007**
Revenue	$494.4	$453.7
Other revenues (expenses) including asset revaluations	-$0.9	$19.6
Project management and operating costs	-$274.6	-$239.2
Employee related expenses	-$24.5	-$27.1
Marketing costs	-$21.5	-$21.6
Corporate and other expenses	-$15.6	-$19.0
Depreciation and amortisation expenses	-$15.5	-$10.6
Borrowing and finance charges	-$82.0	-$63.6
Profit before income tax expense	**$59.8**	**$92.3**
Income tax expense	-$18.1	$25.9
Profit for the year	**$41.6**	**$66.4**
Loss / (profit) attributable to minority interests	$3.0	-$0.7
Profit to equity holders of parent	**$44.6**	**$65.7**

Note: In the 2008 Annual Report, Notes to the Financial Statements: Note 3 (b) Profit before income tax details Cost of Sales - Asset development activities for 2008 as $5.1 million.

Extract from Cash Flow Statement for financial year ended 30 September 2008	$millions	
	2008	**2007**
Cash flows from operating activities		
Receipts from customers	$357.0	$335.0
Payments to suppliers and employees	-$356.1	$328.1
Dividends / distributions received	$6.6	$6.5
Interest received	$41.4	$33.0
Interest and other borrowing costs paid	-$82.3	-$55.0
Income tax (paid) / refunded	$3.7	-$36.0
Net cash (used in) / provided by operating activities	**-$29.8**	**-$44.7**
Cash flows from investing activities		
Proceeds / (payments) for other financial assets	$0.5	-$1.9
Payments for investments as listed securities	-$0.3	-
Payments for associates and joint ventures	-	-$58.2
Payments for property, plant and equipment	-$47.3	$152.8
Payments for agricultural assets	-$12.6	-$41.0
Payments for investment property	-$6.4	-$19.5
Payments for intangibles – permanent water rights	-$45.9	-
Payments for intangibles – software and development	-$2.2	-$2.8
Proceeds from sale of non-current assets	$14.0	$14.7
Net cash (used in) / provided by investing activities	**-$100.3**	**-$261.4**
Other		
Dividends paid	$72.5	$105.5
Interest paid	$10.1	$15.4

Section 1: Cash balance ratios

Cash is king in business – it's the lifeblood of an organisation. Organisations can utilise cash balance ratios as a means to assess the health of their cash position now and into the foreseeable future.

Cash ratio: The cash ratio measures the extent to which short-term debt obligations can be met via current cash reserves. A result of 1 or higher is deemed to be acceptable and results less than 1 would highlight that there is an issue that requires immediate attention.

$$\text{Cash ratio} = \frac{\text{Cash + cash equivalents}}{\text{Current liabilities}}$$

Cash burn rate: The cash burn rate identifies how much cash is being used up on a monthly basis to sustain core operations and business growth and expansion (capital expenditure and new business purchases).

$$\text{Cash burn rate} = \frac{\text{Cash used in operations + capital expenditure + purchase of ongoing business}}{\text{12 months}}$$

Months to cash burn out: Months to cash burnout identifies how many months until the cash reserves of the organisation are completely exhausted. A benchmark indicator would show a result of not less than two years' cash reserves. On average, for a cash healthy organisation, the burnout rate should be between three to five years.

$$\text{Months to cash burnout} = \frac{\text{Cash + cash equivalents + short-term marketable securities}}{\text{Cash burn rate}}$$

Does the business have a healthy cash position?

Example: Timbercorp

$$\text{Cash ratio} = 0.05 = \frac{32.6}{684.2}$$

$$\text{Cash burn rate} = \$46 \text{ million per month} = \frac{356.1 + 82.3 + 47.3 + 12.6 + 6.4 + 45.9 + 2.2}{12}$$

$$\text{Months to burnout} = 0.70 \text{ of a month or approx. 22 days} = \frac{32.6}{46}$$

The result for months to cash burnout paints a very dire picture of Timbercorp's cash position at the end of 2008. The organisation was burning through cash at lightning speed.

Section 2: Operating cash management

There are two key measures that can be used to manage operating cash flows: **the operating cycle and the cash cycle.** The operating cycle measures the time it takes for purchased inventory to be converted into cash through sales. The cash cycle provides useful data about the organisation's performance in the areas of: inventory, accounts payable and accounts receivable.

Operating cycle = Days inventory + Days receivable
Cash cycle = Operating cycle – Days payable

Day's inventory, receivable and payable:

$$\text{Days inventory} = \frac{\text{Average inventory}}{\text{Cost of goods sold}} \times 365$$

$$\text{Days receivable} = \frac{\text{Average receivables}}{\text{Sales}} \times 365$$

$$\text{Days payable} = \frac{\text{Average payables}}{\text{Cost of goods sold}} \times 365$$

Does the business manage its inventory, customers and suppliers well?

Example: Timbercorp

$$\text{Days inventory} = \frac{(6.1 + 12.4) / 2}{5.1} \times 365$$

Days inventory = 662 days

$$\text{Days receivable} = \frac{(104.0 + 95.0) / 2}{494.4} \times 365$$

Days receivable = 73.5 days

$$\text{Days payable} = \frac{(72.5 + 105.5) / 2}{5.1} \times 365$$

Days payable = 6,370 days

These results highlight the different business model that Timbercorp was running. Inventory would include biological assets (trees and vines and their fruits) and these would be considered longer term in nature. We can see that inventory days (nearly 2 years) is well above what would normally be expected for a retailer (2-3 days for a supermarket, and perhaps 20 days for a clothing retailer). Receivables are over 70 days, and best-practice would be to have wound these back towards 20-30 days. Further, payables are out near 20 years! This may be reflective of the long-term nature of the investments, but it is more so reflective that Timbercorp's business model included payments to suppliers that weren't just included in cost of sales. As such, we have also included the 'Project management and operating costs' expense line as part of the denominator and re-calculated the days payable ratio below.

$$\text{Days payable} = \frac{(72.5 + 105.5) / 2}{(5.1 + 274.6)} \times 365$$

Days payable = 116.1 days

Even with these additional expenses included, we can see that the days payable figure is nearly 4 months. This is well outside normal benchmarks of around 30-60 days, and highlights the cash flow difficulties experienced by Timercorp.

Section 3: Liquidity ratios

Liquidity ratios provide information about an organisation's ability to meet its short term (and longer term) debt obligations.

Free cash flow: This represents the extent to which cash generated from operations can be saved after taking into account capital expenditures. Ideally, the result would be expected to be positive. In periods of high capital expenditure the result may be negative. Such results should only be evident every few years, relative to the nature of capital investment planning.

$$\text{Free cash flow} = \text{Cash flow from operating activities} - \text{Capital expenditures}$$

Short and long term debt coverage ratios: These ratios focus on the liquidity of the organisation by comparing operating cash flows to the debt position. A trend of decreasing debt coverage could be a cause for concern as this may indicate an inability for the organisation to source external borrowings. This may put pressure on the organisation to fund its operations through shareholder contributions or from the sale of non-current assets.

$$\text{Short-term debt coverage} = \frac{\text{Cash flow from operating activities} - \text{dividends paid}}{\text{Current liabilities}}$$

$$\text{Long-term debt coverage} = \frac{\text{Cash flow from operating activities} - \text{dividends paid}}{\text{Non-current liabilities}}$$

Cash interest coverage: The cash interest coverage ratio is an effective indicator of an organisation's ability to meet interest payments on debt obligations. A result of less than 1 indicates an immediate risk of default if additional funds are not obtained. An acceptable result is three times the level of interest, though what is acceptable will vary between industries.

$$\text{Cash interest coverage} = \frac{\text{Cash flow from operating activities} + \text{Income tax paid} + \text{Interest paid}}{\text{Interest paid}}$$

Is the business able to meet its debt obligations?

Example: Timbercorp

Free cash flow = -$144.2 million = -29.8 – 47.3 – 12.6 – 6.4 – 45.9 – 2.2

$$\text{Short term debt coverage} = -0.15 = \frac{-29.8 - 72.5}{684.2}$$

$$\text{Long term debt coverage} = -0.23 = \frac{-29.8 - 72.5}{449.6}$$

$$\text{Cash interest coverage} = 0.59 = \frac{-29.8 - 3.7 + 82.3}{82.3}$$

Timbercorp has a negative free cash flow balance – it has invested significantly in capital expenditure in 2008.

Timbercorp has a negative cash flow from operating activities which is driving the negative results for debt coverage. These results highlight an inability by the organisation to internally generate funds to cover its debt obligations. The result may be to borrow more funds to meet any calls, which will in turn place the organisation into further debt. The end result may be (and was) bankruptcy.

Timbercorp achieved a score of less than 1 on its cash interest coverage indicator. This ratio shows that the organisation is in immediate danger of defaulting.

Section 4: Profitability ratios

Profitability ratios provide information about an organisation's ability to generate revenue to cover operating costs and return a profit for its owners. Profitability ratios are best compared against organisations within similar industries to determine if the entity is performing at above, below or on par with competitors.

Excess cash margin ratio: The excess cash margin allows organisations to gauge differences between growth in accruals as opposed to cash-based earnings.

$$\text{Excess cash margin ratio} = \frac{\text{Cash flow from operating activities} - \text{operating earnings}}{\text{Revenue}}$$

Operating cash margin ratio:

$$\text{Operating cash margin ratio} = \frac{\text{Cash flow from operating activities}}{\text{Revenue}}$$

Does the business demonstrate that it able to return a profit from its core operations?

Example: Timbercorp

$$\text{Excess cash margin ratio} = -18.1\% = \frac{-29.8 - 59.8}{494.4} \times 100$$

$$\text{Operating cash margin ratio} = -6.0\% = \frac{-29.8}{494.4} \times 100$$

Timbercorp reported high profits (accrual based accounting), however from a purely cash perspective it is not able to cover its operating costs and return a profit to shareholders from its core operations. Both ratios are negative which indicate poor performance in this area.

Conclusion

In Part III we calculated a number of cash management ratios to provide additional information about the cash health position of an organisation. These ratios can be calculated over time, and compared to internal benchmarks and external benchmarks to assess the underlying health and performance of the organisation. They can also be used to forecast imminent liquidity and solvency concerns.

If you would like help creating or analysing your organisation's cash flows please contact admin@keq.com.au.