



Financial Statement Analysis - Activity Ratios

Hayden Ltd. Income Statement For the year ended 30 June 2011		
	30 June 2011	30 June 2012
Sales revenue	450,000	500,000
Cost of goods sold	170,000	200,000
Gross profit	280,000	300,000
Expenses		
Advertising expense	9,000	10,000
Insurance expense	24,000	22,000
Wages and salaries expenses	56,000	75,000
Depreciation expense - machinery	19,000	21,000
Interest expense	2,000	3,000
Net income before tax	170,000	169,000
Less: Income tax	50,000	48,000
Net Income	120,000	121,000

Hayden Ltd. Statement of financial position As at 30 June 2012			
	30 June 2010	30 June 2011	30 June 2012
Current Assets			
Cash at bank	35,000	30,000	40,000
Accounts receivable	27,000	20,000	25,000
Inventory	40,000	44,000	45,000
Prepaid insurance	500	800	300
Interest receivable	600	400	200
Non-Current Assets			
Investments	20,000	10,000	11,000
Plant, property and equipment	200,000	150,000	155,000
Accumulated depreciation – machinery	(15,000)	(10,000)	(20,000)
TOTAL ASSETS	308,100	245,200	256,500
Liabilities			
Accounts payable	34,000	32,000	36,000
Wages and salaries payable	12,000	8,000	4,000
Advertising expense payable	100	400	300
Equity			
Hayden Ltd Capital	262,000	204,800	257,280
TOTAL LAIBILITIES AND EQUITY	308,100	245,200	297580



Activity Ratios

Activity ratios examine the day-to-day operating efficiency of a firm. The higher the ratio the more efficient the firm is operating. Activity ratios measure how quickly a firm converts non-cash assets into cash.

Inventory Turnover

$$\text{Inventory Turnover} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

The inventory turnover ratio measures how rapidly a firm turns over its inventory. Inventory storage is deemed a "non-value added activity" and therefore is said to be considered wasted space as it adds no value to the company, that is, it does not generate any income. Therefore the faster inventory is turned over the less storage space that is required to store inventory. Inventory can also become obsolete, damaged or stolen if it remains in inventory for long periods of time. So, increasing inventory turnover will definitely be beneficial for both a firm and their investors in the long run. A low inventory turnover ratio generally indicates inventory not moving out of the warehouse.

Income statement extract

	30 June 2011	30 June 2012
Sales revenue	450,000	500,000
Cost of goods sold	170,000	200,000
Gross profit	280,000	300,000

Balance sheet extract

Current Assets	30 June 2010	30 June 2011	30 June 2012
Inventory	40,000	44,000	45,000

	2011	2012
Inventory turnover ratio	$\frac{\$170,000}{(\$40,000 + \$44,000)/2} = 4.05 \text{ x}$	$\frac{\$200,000}{(\$44,000 + \$45,000)/2} = 4.50 \text{ x}$

Alone these figures tell us nothing. In 2012 inventory turnover has increased by 11%. This generally means that sales have increased as inventory turnover has increased, that is, inventory is moving out of the warehouse at a faster rate. As can be seen on the income statement sales revenue indeed increased in 2012. Keep in mind that an increase inventory turnover ratio can also mean less stock is being held in inventory due to fewer sales (however this is not the case in our example). To get a better idea of the company's inventory turnover compare it to either a similar firm, (preferable in the same industry) or a firm of similar size to get a proper sense of how well the firm is performing.



Financial Statement Analysis - Activity Ratios

Another calculation that can be performed to assess the firm's inventory movement is to calculate the average number of days that inventory remains in storage. This is a relatively simple calculation.

$$\text{Average no days inventory remains in storage} = \frac{365 \text{ days}}{\text{Inventory Turnover}}$$

	2011	2012
Average no. days inventory remains in storage	$\frac{365}{4.05}$ =90 days	$\frac{365}{4.50}$ =81 days

This shows that there was an improvement in the number of days that inventory remained in storage. In 2010/2011 inventory remained in storage for an average of 90 days while in 2011/2012 inventory remained in storage for an average of 81 days. Firms don't wish to keep inventory in storage for long periods of time incase inventory becomes damaged, stolen or obsolete.



Financial Statement Analysis - Activity Ratios

Receivables Turnover

$$\text{Receivable Turnover} = \frac{\text{Cost of Goods Sold}}{\text{Average account receivables}}$$

Receivables turnover is a measure of the firm's ability to collect their credit sales from their debtors. The greater the ratio the more efficient the firm's credit policy is and the better they are at collecting accounts from their debtors. A low receivables turnover may indicate a poor credit policy, debtors not paying on time or both.

Income statement extract

	30 June 2011	30 June 2012
Sales revenue	450,000	500,000
Cost of goods sold	170,000	200,000
Gross profit	280,000	300,000

Balance sheet extract

	30 June 2010	30 June 2011	30 June 2012
Current Assets			
Accounts receivable	27,000	20,000	25,000

	2011	2012
Receivable turnover ratio	$\frac{\$450,000}{(\$27,000 + \$20,000)/2} = 19.12 \text{ x}$	$\frac{\$500,000}{(\$20,000 + \$25,000)/2} = 22.22 \text{ x}$

In 2012 receivables turnover has increased by 16%. This could mean that either total sales (cash + credit sales) have increased or credit sales have decreased. As can be seen on the income statement sales revenue increased in 2012 and account receivables (credit sales) decreased. To get a better idea of the company's inventory turnover compare it to either a similar firm, (preferable in the same industry) or a firm of similar size to get a proper sense of how well the firm is performing. A company can improve their receivables turnover by offering their debtors an incentive to pay their accounts early, such as a 10% discount if accounts are paid within 5 days.



Financial Statement Analysis - Activity Ratios

The average number of days it takes to collect accounts receivables from debtors can also be calculated.

$$\text{Average no days receivables outstanding} = \frac{365 \text{ days}}{\text{Receivables Turnover}}$$

	2011	2012
Average no. days inventory remains in storage	$\frac{365}{19.12}$ = 19 days	$\frac{365}{22.22}$ = 16.4 days

In 2011 accounts receivables remained outstanding for an average of 19 days. This improved in 2012 with receivables being collected within 16 days. This indicates that the firm has improved their credit policy, perhaps by offering a discount for early payment, or perhaps they have decreased the amount of sales sold on credit. The faster a firm is able to collect receivables the quicker receivables turn into cash, the quicker a firm can invest in new capital, such as plant and equipment and the quicker shareholder value increases.



Financial Statement Analysis - Activity Ratios

Payables Turnover

$$\text{Payables Turnover} = \frac{\text{Purchases}}{\text{Average Payable Turnover}}$$

$$\text{Purchases} = \text{Cost of Goods Sold} + (\text{Ending Inventory} - \text{Beginning Inventory})$$

Income statement extract

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Sales revenue	450,000	500,000
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Gross profit	280,000	300,000

Balance sheet extract

	30 June 2010	30 June 2011	30 June 2012
Current Assets			
Inventory	40,000	44,000	45,000
Current Liabilities			
Accounts payable	34,000	32,000	36,000

	2011	2012
Payables turnover ratio	$\frac{\$170,000 + (\$44,000 - \$40,000)}{(\$34,000 + \$32,000)/2} = 5.27 \text{ x}$	$\frac{\$200,000 + (\$45,000 - \$44,000)}{(\$32,000 + \$36,000)/2} = 5.91 \text{ x}$

In 2012 payables turnover increased by 12%. This improvement could indicate that the firm's creditors are offering an incentive for early payment, greater than the current cash rate being offered. The firm may have deemed it more profitable to repay creditors rather than the alternative option of holding cash in the bank. Think about it another way. If a creditor is offering a 10% discount for early payment and the bank is offering 5.6% interest per annum which is more attractive? It is more profitable to take the 10% discount as this is giving a higher rate of return.



Financial Statement Analysis - Activity Ratios

The average number of days payables remain outstanding can also be calculated and gives an indication of the firm's ability to meet their short term debts. If the firm is taking too long to pay debts then new creditors may not be willing to extend the firm a line of credit.

$$\text{Average no days payables outstanding} = \frac{365 \text{ days}}{\text{Payables Turnover}}$$

	2011	2012
Average no. days inventory remains in storage	$\frac{365}{5,27}$ =69 days	$\frac{365}{5,91}$ =62 days

In 2011 accounts payables remained outstanding for an average of 69 days. This improved in 2012 with payables being paid within 62 days. This indicates that the firm is paying off their accounts at a faster rate than before. Again it would be useful to compare this result with a firm of similar size within the same industry.



Financial Statement Analysis - Activity Ratios

Working capital turnover

$$\text{Working capital turnover} = \frac{\text{Revenue}}{\text{Average working capital}}$$

$$\text{Working capital} = \text{Account Receivables} + \text{Inventory} - \text{Account Payables}$$

The working capital ratio takes into account total revenue with respect to a firm's account receivables, inventory and account payables. It gives an indication of how efficient a firm uses its working capital to generate income. Put another way it analyses the firm's efficiency of generating income with respect to the amount of money put in to fund the sales. The higher the working capital turnover ratio the better as the firm is generating greater revenue compared to the money used to fund the sales.

Note: Only operating assets and liabilities should be used to calculate this ratio. Short term debt, marketable securities and cash should not be included in the measure.

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Balance sheet extract

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Current Assets			
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Inventory	40,000	44,000	45,000
Current Liabilities			
Accounts payable	34,000	32,000	36,000

	2010	2011	2012
Working capital	27,000 + 40,000 – 34,000 = 33,000	20,000 + 44,000 – 32,000 = 32,000	25,000 + 45,000 – 36,000 = 34,000

Working capital turnover	$\frac{450,000}{(33,000 + 32,000)/2} = 13.85 \text{ x}$	$\frac{500,000}{(32,000 + 34,000)/2} = 15.15 \text{ x}$
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In 2011 the firm generated \$13.85 for every \$1 they put in to fund the sales. In 2012 there was a steady improvement with the firm generating an income of \$15.15 for every \$1 they used to source the sales.



Financial Statement Analysis - Activity Ratios

Fixed Asset Turnover

$$\text{Total Asset Turnover} = \frac{\text{Sales}}{\text{Average Property, Plant and Equipment}}$$

Fixed assets mainly consist of plant, property and equipment. Fixed asset turnover ratio is similar to total asset turnover ratio but it looks at how efficient the firm is at generating income given only plant, property and equipment.

Income statement extract

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Balance sheet extract

	30 June 2010	30 June 2011	30 June 2012
Non-Current Assets			
Plant, property and equipment	200,000	150,000	155,000

	2011	2012
Total Asset Turnover	$\frac{450,000}{(200,000 + 150,000)/2} = 2.57 \text{ x}$	$\frac{500,000}{(150,000 + 155,000)/2} = 3.28 \text{ x}$

In 2011 the firm generated \$2.57 of revenue for every \$1 of fixed assets they owned. In the 2012 the firm generated revenue \$3.28 of revenue for every \$1 of total fixed assets they owned.



Financial Statement Analysis - Activity Ratios

Total Asset Turnover

$$\text{Total Asset Turnover} = \frac{\text{Sales}}{\text{Average Total Assets}}$$

Total asset turnover analyses the firm's ability to generate income given the amount of assets they own. The higher the revenue with respect to total assets, the higher the ratio and the better the firm is at using their assets to generate revenue.

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Non-Current Assets			
Investments	20,000	10,000	11,000
Plant, property and equipment	200,000	150,000	155,000
Accumulated depreciation – machinery	(15,000)	(10,000)	(20,000)
TOTAL ASSETS	308,100	245,200	256,500

	2011	2012
Total Asset Turnover	$\frac{450,000}{(308,100 + 245,200)/2} = 1.63 \text{ x}$	$\frac{500,000}{(245,000 + 256,500)/2} = 1.99 \text{ x}$

In 2011 the firm generated \$1.63 of revenue for every \$1 of assets they owned. In the 2012 the firm was generating revenue almost twice the amount of total assets they owned, that is \$1.99 for every \$1 of assets they owned.