1. Financial Ratio Analysis

1.1 Introduction

As part of the system of financial control in an organisation, it will be necessary to have ways of measuring the progress of the enterprise, so that managers know how well the company concerned is doing. The financial situation of a company will obviously affect its share price.

The answer to some of the following questions can be obtained from accounting reports produced by the company:

i. Is the company profitable?
ii. Is the company growing?
iii. Does the company have satisfactory liquidity?
iv. Is the company's gearing level acceptable?
v. What is the company's dividend policy?

The usual way of interpreting accounting reports is to calculate and then to analyse certain ratios (*Ratio Analysis*). The key to obtain meaningful information from ration analysis is *comparison* (that is, comparing ratios over time within the same business to establish whether the business is improving or declining, and comparing ratios between similar businesses to see whether the company you are analysing is better or worse than average within its own business sector.

Ratio analysis on its own is not sufficient for interpreting company accounts, and there are other items of information, which should be looked at. These include the following:

i. Comments in the Chairman's report and the director's report
ii. The age and nature of the company's assets
iii. Current and future developments in the company's markets, at home and overseas
iv. Recent acquisitions or disposals of a subsidiary by the company
v. The cash flow statement (where required by FRS 1)

1.1.1 Limitations and Strength of Financial Ratios

Financial Ratios are used to compare actual results with something else. The comparison may be against a budget or a desire target, or perhaps against a previous period's results in order to detect trends. On the order hand, an entity's results may be compared with the results of another entity using ratios in order to ascertain whether current actual results are better or worse than those of other similar business units.

Limitations

- On their own, they do not provide information to enable managers to gauge performance or make control decisions. It is necessary to provide budgeted or targeted ratios, ratios of previous accounting periods, or ratios of other companies or divisions, as a tool for comparison.
- Ambiguity arises when defining the ratios used. For example, should earnings be 'before tax' or 'after tax'?
- Ratios compared over a period of time at historical cost will not be properly comparable where inflation in price has occurred during the period, unless an adjustment is made to the ratios to make allowance for price level differences.
- The ratios of different companies cannot be properly compared where each company employs different accounting policies.

Strengths

Despite of the limitations, it provides a useful tool for management, shareholders and any interested parties to assess the performance of the business. Other strengths are as follows:

- It summarises relationships and results relevant to an organisation's performance.
- It allows year-to-year performance comparison.
- It allows performance comparisons of organisations in the same industry.
- It allows trends to emerge and hence predictions to be made.

1.2 Analysis Report for Jin Yang Ltd

JIN YANG LTD
REPORT

To: Mr Tom Tan, Managing Director
From: Accountant
Date: 7 May 2002
Subject: Performance appraisal for the years 1998 to 2001

We have based on the summarised accounts obtained for the years 1998 to 2001 and interpreted the accounts using Financial Ratios. We have prepared an appendix of ratios (*see Appendix 1*), a trend analysis report (*see Appendix 2*) and a set formulas of the ratios used (*see Appendix 3*).

Profitability Ratios

The Return on Capital Employed (ROCE) and the Return on Owners' Equity (ROE or ROOE) has gradually increased by 4.7% from 15.77% in 1998 to 20.47% in 2001 and by 4.67% from 8.03% in 1998 to 12.70% in 2001, respectively. It shows that the business is profitable with it resources fairly utilised, as the higher ROCE the more profitable the business.

The Operating Profit margin only increases marginally by 0.02% from 11.62% in 1998 to 11.64% in 2001, despite of the dip by 0.64% in 2000. Although Sales has increase by 33% since 1998, the cost has also increased substantially. The increase in cost could also be due to the increase in the number of employees being employed, which leads to an increase in employees' remuneration.

It will be good if we are given the Gross Profit (GP), so that we could calculate that GP margin and differentiate whether the increase in cost is due to an increase in Cost of Sales or Operating expenses. The profit margins measure the quality of the business, as the higher the margin the higher quality of the business. On the other hand, low margin could be due to high cost of production, where it cannot enjoy the economic of scale and could also be due to intense competition from competitors, where it may need grant sales discount to increase it's competitiveness.

The Net Profit margin has increase by 1.3% from 5.92% in 1998 to 7.22% in 2001, despite of the dip by 0.14% in 2000. The increase is due reduction in corporate tax by 11% in 2001. In overall, the company has an average profitability.

Liquidity Ratios

The Current ratio and Quick ratio have shown substantial decreases by 0.53% from 1.92% in 1998 to 1.39% in 2001 and by 0.37% from 1.02% in 1998 to 0.65% in 2001, where the ideal ratios level should be at least ‘2’ and ‘1’ respectively.

Both ratios measure the business ability to generate cash and repay short term debt using its current assets. In the case of the Quick ratio, it has excluded stock in the calculation, as stock is regarded as illiquid and it is impossible to convert the stock into cash within relatively short period of time.

As for Jin Yang Ltd, it is showing signs of having liquidity problem based on the declining ratios. The tremendous increase in sales, stock, debtors and creditors, shown in the accounts, indicated an over trading situation in the company.

Efficiency Ratios

The Debtors Turnover period has increase substantially by 17.21 days from 60.30 days in 1998 to 77.51 days in 2001. It shows slow payments from debtors, which eventually causes liquidity problem to the company.

Change of credit terms and giving discount for early settlements might help Jin Yang Ltd to solve its liquidity problem. Therefore, the company can also pay its creditors on time, avoiding any legal issues for non-payments.

We would not be able to discuss further on the Efficiency of the company (that is, Creditors Turnover period and Stock Turnover Period), as we are not given the sufficient information from the trading account, like Purchases, Stock and Cost of Sales.

The following ratios have shown in general that the company has fairly utilised it assets in generating it’s sales:

The Working Capital Turnover has substantially increases by 3.18 times from 4.48 times in 1998 to 7.66 times in 2001.

The Assets Turnover has gradually increases by 0.4 times from 1.36 times in 1998 to 1.76 times in 2001.

The Fixed Assets Turnover has gradually increases by 0.33 times from 1.95 times in 1998 to 2.28 times in 2001.

Investors' Ratios

The Earnings per share has substantially increases by $0.09 from $0.15 in 1998 to $0.24 in 2001.

The Dividend Cover is expressed as the dividend being 1.16 times (in year 2001) covered by the profits, whereas in 1998 it is expressed as the dividend being 1.08 times covered by the profits. This is an indication that as the company is retaining a larger portion of its profit in year 2001, the company is growing and this will lead to growth in prospects and dividend in future.

We are unable to appraise further on the Price Earning ratio and Dividend Yield, as the market value of the share is not given for the four year.

Looking at the Trend analysis (*Appendix 2*), the percentage change in sales has decrease from 12% in 1999 to 8% in 2001 and the percentage change in profit after tax has increase substantially from 18% in 1999 to 35% in 2001, due to the decline in corporate tax.

In conclusion, from the above, the company is going into a liquidity problem due to over trading and expanding too rapidly, although it seems profitable. The company could be more profitable with enough cash flow, if it employs a good management team. And if not for the decline in corporate tax, the company might not have a substantial increase in profit in year 2001.

Furthermore, lacking important information has lead to an incomplete performance appraisal for Jin Yang Ltd. But in view of the Gearing of the company (that is, Debt Ratio, where Total Liabilities / Total Assets) has substantially increases by 19.93% from 52.20% in 1998 to 77.13% in 2001. It indicated that the company is having some cash flow problem, where they are unable to pay off their creditors on time due to slow collection in debt.

In addition, there are limitation to compare ratios over a period of time at historical cost will not be properly comparable where inflation in price has occurred during the period, unless an adjustment is made to the ratios to make allowance for price level differences.

¬ Appendix 1 - Financial Ratios

JIN YANG LTD
APPENDIX 1
FINANCIAL RATIOS

	1998	1999	2000	2001
Profitability Ratios				
ROCE (%)	15.77	18.28	18.20	20.47
ROE or ROOE (%)	8.03	9.44	9.57	12.70
Operating Profit Margin (%)	11.62	12.07	10.98	11.64
Net Profit Margin (%)	5.92	6.23	5.78	7.22
Liquidity Ratios				
Current Ratio	1.92	1.65	1.50	1.39
Quick Ratio (Acid Test)	1.02	0.83	0.69	0.65
Efficiency Ratios				
Debtors Turnover Period (in Days)	60.30	66.04	70.94	77.51
Working Capital Turnover (in Times)	4.48	5.61	6.73	7.66
Assets Turnover (in Times)	1.36	1.51	1.66	1.76
Fixed Assets Turnover (in Times)	1.95	2.07	2.20	2.28
Investors' Ratios				
Earnings per Share (EPS) (in $)	0.15	0.18	0.18	0.24
Dividend Cover (in Times)	1.08	1.04	1.06	1.16
Gearing Ratio				
Debt Ratio (%)	52.20	60.59	66.27	72.13

¬ Appendix 2 - Trend Analysis (Historical Summaries)

Trend Analysis
Historical Summaries
Jin Yang Ltd's Four Year Record

($'000)	1998	1999	2000	2001
Sales	506,000	566,720	623,390	673,260
Profit after Tax	29,940	35,310	36,020	48,630
Reserve	172,910	174,220	176,240	182,870
a. ***Percentage changes***				
Sales		12%	10%	8%
Profit after Tax		18%	2%	35%
Reserve		1%	1%	4%
a. ***Index number***				
Sales	100	112	110	108
Profit after Tax	100	118	102	135
Reserve	100	101	101	104

¬ Appendix 3 - Financial Ratios (Formulas)

Profitability Ratios *(measured in Percentage)*

1 Return on Capital Employed (ROCE)

$$= \frac{\text{Profit before interest and tax (PBIT)}}{\text{Capital Employed *}} \times 100\%$$

[*where, Capital Employed = Total Assets - Current Liabilities]

2 Return on Equity (ROE) or Return on Owner's Equity (ROOE)

$$= \frac{\text{Profit after interest, tax and Preference Dividend}}{\text{Ordinary Share Capital and Reserve}} \times 100\%$$

3 Return on Shareholder's Fund (ROSF)

$$= \frac{\text{Profit before tax}}{\text{Ordinary Share Capital and Reserve}} \times 100\%$$

4 Profit Margin on Sales (Operating Profit Margin)

$$= \frac{\text{Operating Profit}}{\text{Sales}} \times 100\%$$

5 Gross Profit Margin

$$= \frac{\text{Gross profit}}{\text{Sales}} \times 100\%$$

6 Net Profit Margin

$$= \frac{\text{Net Profit}}{\text{Sales}} \times 100\%$$

Liquidity Ratios

7 Current Ratio

$$= \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

8 Quick Ratio / Acid Test Ratio

$$= \frac{\text{Current Assets less Stock}}{\text{Current Liabilities}}$$

Efficiency Ratios *(measured in Days or in Times)*

9 Stock Turnover Period

$$= \frac{\text{Average Stock}}{\text{Cost of Sales}} \times 365 \text{ days}$$

Stock Turnover

$$= \frac{\text{Cost of Sales}}{\text{Average Stock}}$$

10 Debtors Turnover Period

$$= \frac{\text{Average Debtors}}{\text{Sales}} \times 365 \text{ days}$$

Debtors Turnover

= Sales

$$\text{Average Debtors}$$

11 Creditors Turnover Period $= \dfrac{\text{Average Creditors}}{\text{Purchase}} \times 365 \text{ days}$

Creditors Turnover $= \dfrac{\text{Purchase}}{\text{Average Creditors}}$

12 Working Capital Turnover $= \dfrac{\text{Sales}}{\text{Net Current Assets}}$

13 Assets Turnover $= \dfrac{\text{Sales}}{\text{Capital Employed}}$

14 Fixed Assets Turnover $= \dfrac{\text{Sales}}{\text{Fixed Assets}}$

Gearing Ratios *(measured in Percentage or in Times)*

15 Gearing Ratio $= \dfrac{\text{Prior Charge Capital}^{\#}}{\text{Equity \& Preference Share Capital \& Reserve + Total Long Term Debt}} \times 100\%$

[# where, Prior Charge Capital = Total Long Term Debt + Preference Share Capital]

or $\dfrac{\text{Total Liabilities less Current Liabilities}}{\text{Capital Employed}} \times 100\%$

16 Debt Equity Ratio $= \dfrac{\text{Prior Charge Capital}}{\text{Ordinary Share Capital and Reserve}} \times 100\%$

17 Debt Ratio $= \dfrac{\text{Total Debt (Liabilities)}}{\text{Total Assets}} \times 100\%$

18 Interest Cover $= \dfrac{\text{Profit before interest and Tax}}{\text{Interest Charge}}$

Investors' Ratios (Shareholders' Ratios) *(measured in Percentage or in Times)*

19 Earnings per Share (EPS) $= \dfrac{\text{Earnings}^{\wedge}}{\text{Number of Ordinary Shares}}$

[^ where, Earnings = Net Profit after Tax and Preference Dividend]

20 Dividend Yield $= \dfrac{\text{Gross Dividend per Ordinary Share}}{} \times 100\%$

Current Market Value of the Share

21 Dividend Cover $= \dfrac{\text{EPS}}{\text{Dividend per Ordinary Share}}$

or $= \dfrac{\text{Net Profit/(Loss) attributed to Ordinary Shareholders}}{\text{Net Dividend on Ordinary Share}}$

22 Price / Earnings Ratio $= \dfrac{\text{Market Value of the Share}}{\text{EPS}}$

2. "Accrual accounting is preferable to cash flow accounting"

2.1 Introduction

Although financial numbers do not lie, they are subjected to different accounting methods that can lead to different interpretations of a company's financial position.

There are two basic methods for keeping track of sales income and the money paid out for expenses: Cash accounting and Accrual Accounting. Typically, businesses with revenue of more than a few million dollars choose accrual accounting to handle the greater financial complexity that company face.

Choosing the right accounting method can make the difference between an accurate reading of Profit & Loss and a conceptual figure that leaves a non-financial person without a clue. Accounting can also make the difference between knowing when the business has sufficient cash flow in the bank to cover an expense and when it does not. Knowing how much money the business actually has on hand might be a good clue as to whether it has budgeted enough to pay expenses between the times when it's customers to pay their bills.

Going forward, we will discuss further between Accrual accounting and Cash flow accounting, where there are potential timing differences in recognising revenues and expenses.

2.2 Defining Accrual accounting

2.2.1 Accrual accounting

It is very important to grasp the principle, which is applied in nearly all businesses' accounts, that accounts are not prepared on a cash basis but on an accrual (or earnings) basis. That is, a sale or purchase is dealt with in the year in which it is made, even if cash changes hands in a later year. This is important because most businesses, even if they do not sell on credit, make purchases on credit. If cash flow accounting is used, than accounts do not present a true picture of the business's activities in any given period. Accountants call this convention an application the accruals concept.

It differs from cash flow accounting, which recognises transactions when cash has been received or paid. In preparing financial statements for an accounting period using accrual accounting, there will inevitably be some estimation and uncertainly in respect of transactions. The reader of the financial statements therefore cannot have the same high level of confidence in these statements as in those using cash flow accounting.

2.2.2 'Accrual' concept

The 'Accrual' or 'Matching' concept, which is described in SSAP 2 as follows:

> "Revenues and costs are accrued (that is, recognised as they are earned or incurred, not as money is received or paid), matched with one another so far as their relationship can be established or justifiably assumed, and dealt with in the profit and loss account of the period to which they relate... Revenue and profits dealt with in the profit and loss account of the period are matched with associated costs and expenses by including in the same account the cost incurred in earning them (so far as these are material and identifiable)."

The Companies Act 1985 gives legal recognition to the accruals concept, stating that: 'All income and charges relating to the financial year to which the accounts relate shall be taken into account, without regard to the date of receipt or payment.' This has the effect, as we have seen, of requiring businesses to take credit for sales and purchases when made, rather than when paid for, and also to carry unsold stock forward in the balance sheet rather than to deduct its cost from profit for the period.

2.2.3 Revenue Recognition

Accrual accounting is based on the matching of cost with the revenue they generate. It is crucially important under this convention that we can establish the point at which revenue may be recognised so that the correct treatment can be applied to the related costs. For example, the costs of producing an item of finished goods should be carried as an asset in the balance sheet until such time as it is sold; they should be written off as a charge to the trading account.

Revenue is generally recognised as earned at the point of sales, because at that point four criteria will generally have been met:-

i. The product or service has been provided to the buyer.
ii. The buyer has recognised his liability to pay for the goods and services provided. The converse of this is that the seller has recognised that ownership of goods has passed from himself to the buyer.
iii. The buyer has indicated his willingness to hand over cash or other assets in settlement of his liability.
iv. The monetary value of the goods or services has been established.

2.2.4 Example for 'Accrual' concept

Emma has a business printing and selling T-shirts. In May 20X7 she makes the following purchases and sales,

Invoice date	*Numbers bought/sold*	*Amount*	*Date Paid*
Purchase		*$*	
7.5.X7	20	100	1.6.X7
Sales			
8.5.X7	4	40	1.6.X7
12.5.X7	6	60	1.6.X7
23.5.X7	10	100	1.7.X7

What is Emma's profit for May?

Solution:

Cash basis	$
Sales	0
Purchases	0
Profit/Loss	0

Accrual basis	
Sales ($40+$60+$100)	200
Purchase	100
Profit/Loss	100

Obviously, the accruals basis gives a truer picture than the cash basis. Emma has no cash to show for her efforts until June but her customers are legally bound to pay her and she is legally bound to pay for her purchases.

2.3 Defining Cash flow accounting

2.3.1 Cash flow accounting

It is a system of accounting that the records only the cash payments and receipts relating to transactions made by a business, rather than when the money is earned or when expenses are incurred, as in accrual accounting. It is claimed to be easier to understand and less arbitrary in its allocation processes than accrual accounting. It may be used in place of or in addition to accrual accounting and is reflected in a cash flow statement.

In layman terms, under the Cash flow accounting, revenue is recognised when cash is received and expense is recognised when cash is paid.

2.3.2 Advantages and disadvantages of cash flow accounting

The *advantages* of cash flow accounting are as follows:

i. Survival in business depends on the ability to generate cash. Cash flow accounting directs attention towards these critical issues.
ii. Cash flow is more comprehensive than ‘profit’, which is dependent on accounting conventions and concepts.
iii. Creditors (long and short-term) are more interested in an entity’s abilities to repay them than in its profitability. Whereas ‘profits’ might indicate that cash is likely to be available, cash flow accounting is more direct with its message.
iv. Cash flow reporting provides a better means of comparing the results of different companies than traditional profit reporting.
v. Cash flow reporting satisfies the needs of all users better:
    a. For management, it provides the sort of information on which decisions should be taken: (in management accounting, ‘relevant costs’ to a decision are future cash flow); traditional profit accounting does not help with decisions making.
    b. For shareholders and auditors, cash flow accounting can provide a satisfactory basis for stewardship accounting.
    c. As describe previously, the information needs of creditors and employees will be better served by cash flow accounting.

vi. Cash flow forecasts are easier to prepare, as well as more useful, than profit forecasts.
vii. They can in some respects be audited more easily than accounts based on the accruals concept.
viii. The accrual concept is confusing, and cash flows are more easily understood.
ix. Cash flow accounting should be both retrospective, and also include a forecast for the future. This is of great information value to all users of accounting information.
x. Forecasts can subsequently be monitored by the publication of variance statements, which compare actual cash flow against the forecast.

The main *disadvantages* of cash flow accounting are essentially the advantages of accruals accounting (proper matching of related items) *See 2.2.4.* There is also the practical problem that few businesses keep historical cash flow information in the form needed to prepare a historical cash flow statement and therefore, extra record keeping is likely to be necessary.

2.4 Conclusion

Cash flow information is relevant as a basis for making internal management decisions in relation to both fixed assets and working capital; and for stewardship and accountability. Cash flow information is also reliable being objective, consistent, prudent and neutral.

However, professional accounting practice requires reports to external users to be on an accrual accounting basis. This is because the accrual accounting profit figure is a better predictor for investors of the future cash flows likely to arise from the dividends paid to them by the business, and of any capital gain on disposal of their investments. It could also be argued that the cash flow may not be a fair representation of the commercial substance of transactions; e.g. if a business allowed a year's credit to all its customers, there would be no income recorded.

In comparison with the Financial Accounting Standards Board (FASB) in the United States of America, the accounting profession generally supports the views of the FASB that accrual accounting provides a better indication of an enterprise's present and continuing ability to generate favourable cash flows than information limited to the financial aspects of cash receipts and payments.

Even the International Accounting Standards Committee (IASC) supported the FASB view in 1989 when it stated that Financial Statements prepared on an accrual basis inform users not only of past transactions involving the payment and receipt of cash, but also of obligations to pay cash in the future and of resources that represent cash to be received in the future, and that they provide the type of information about past transactions and other events that is most useful in making economic decisions.

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