

CE29x Team-Project Challenge

Financial Accounting (2)

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with acknowledgements to Keith Primrose and Michael Fairbank

Acknowledgment

* This lecture is based on chapter six of:

Bott, F., 2005, "Professional Issues in Information Technology", Swindon: BCS.

Reminder - Three Essentials

* Three financial statements are the most important sections of the annual report

1. The Balance Sheet

(A snapshot of what a company owns and owes)

2. The Profit & Loss Account

(Shows how much money has come into and out of the company in a given time period)

3. The Cash-Flow Statement

(Gives details of the cash flows that contributed to the figures in the balance sheet)

* We looked at the balance sheet in the last lecture

* Today we will consider the others

1. The Balance Sheet

(A snapshot of what a company owns and owes)

2. The Profit & Loss Account

(Shows how much money has come into and out of the company in a given time period)

3. The Cash-Flow Statement

(Gives details of the cash flows that contributed to the figures in the balance sheet)

The Profit & Loss Account

- * The profit and, loss (P & L) account shows for, a given period,
 - * How much money has been received
 - * How much has been spent
- * It does not include money borrowed or received from the sale of equity
 - * Because these do not affect the balance sheet's bottom line
- * It does not include expenditure on acquiring fixed assets
- * The period is usually the organisation's financial year.

Jemimah's P & L

- * In the case of non-profit-making organizations, the P+L account is usually called an “income and expenditure account”.
- * This is what we call Jemimah's P+L Account
- * See: Income and expenditure account for a student (on next slide)

Income and expenditure account for our example student:

Income and expenditure account for a student

Jemimah Puddleduck

Income and Expenditure Account

Year ending 31 October 2012

	2012	2011
INCOME		
Contribution from parents	2,500	2,200
Income from summer job	2,250	1,750
Total Income	4,750	3,950
Expenditure		
Course Fees	3,465	3,465
Hall Fees	3,000	2,950
Books	75	60
Clothes and personal items	469	520
Transport	275	134
Food	1,990	1,885
Entertainment	2,080	1,675
Depreciation	400	400
Total Expenditure	11,754	11,089
Excess of Income Over Expenditure	(7,004)	(7,139)

Income

* The income is self-explanatory

INCOME	
Contribution from parents	2,500
Income from summer job	2,250
Total Income	4,750
Expenditure	
Course Fees	3,465
Hall Fees	3,000
Books	75
Clothes and personal items	469
Transport	275
Food	1,990
Entertainment	2,080
Depreciation	400
Total Expenditure	11,754
Excess of Income Over Expenditure	(7,004)

Income

- * However some arbitrary choices made
 - * Income figures here have been quoted “net” (i.e. after tax)
 - * Alternatively, could have given them gross, and shown tax + national insurance as a separate expenditure below

INCOME	
Contribution from parents	2,500
Income from summer job	2,250
Total Income	4,750
Expenditure	
Course Fees	3,465
Hall Fees	3,000
Books	75
Clothes and personal items	469
Transport	275
Food	1,990
Entertainment	2,080
Depreciation	400
Total Expenditure	11,754
Excess of Income Over Expenditure	(7,004)

Expenditures

* Similarly, the expenditures are self-explanatory:

INCOME	
Contribution from parents	2,500
Income from summer job	2,250
Total Income	4,750
Expenditure	
Course Fees	3,465
Hall Fees	3,000
Books	75
Clothes and personal items	469
Transport	275
Food	1,990
Entertainment	2,080
Depreciation	400
Total Expenditure	11,754
Excess of Income Over Expenditure	(7,004)

Expenditures

* Except for Depreciation:

- * although it is not an expenditure in the sense that cash is paid out, it does reflect a decline in value,
- * and is therefore shown as an expenditure.

INCOME	
Contribution from parents	2,500
Income from summer job	2,250
Total Income	4,750
Expenditure	
Course Fees	3,465
Hall Fees	3,000
Books	75
Clothes and personal items	469
Transport	275
Food	1,990
Entertainment	2,080
Depreciation	400
Total Expenditure	11,754
Excess of Income Over Expenditure	(7,004)

Depreciation

- * Clearly, a fall in the value of assets tends to make the net P&L worse.
- * The figure of £400 arises from the depreciation on the computer, mobile phone and other assets.

INCOME	
Contribution from parents	2,500
Income from summer job	2,250
Total Income	4,750
Expenditure	
Course Fees	3,465
Hall Fees	3,000
Books	75
Clothes and personal items	469
Transport	275
Food	1,990
Entertainment	2,080
Depreciation	400
Total Expenditure	11,754
Excess of Income Over Expenditure	(7,004)

Expenditures

- * Again, there is a certain arbitrariness about the way in which items have been aggregated.
 - * We could, for example, have lumped together 'Food' and 'Entertainment' under the heading 'Living expenses'
 - * Or split 'Transport' into 'Road' and 'Rail'.

INCOME	
Contribution from parents	2,500
Income from summer job	2,250
Total Income	4,750
Expenditure	
Course Fees	3,465
Hall Fees	3,000
Books	75
Clothes and personal items	469
Transport	275
Food	1,990
Entertainment	2,080
Depreciation	400
Total Expenditure	11,754
Excess of Income Over Expenditure	(7,004)

Net total of Profit & Loss account

- * The net figure at the bottom of the profit and loss account should reflect the extent to which the organisation / the individual - is better or worse off at the end of the year than at the beginning.
- * Q: The Net Worth on her balance sheet in 2011 was £-4726. What was it in 2012?

INCOME	
Contribution from parents	2,500
Income from summer job	2,250
Total Income	4,750
Expenditure	
Course Fees	3,465
Hall Fees	3,000
Books	75
Clothes and personal items	469
Transport	275
Food	1,990
Entertainment	2,080
Depreciation	400
Total Expenditure	11,754
Excess of Income Over Expenditure	(7,004)

Commercial P & L Accounts

- * The P & L (or income and expenditure) account we have just looked at is typical of the account that might be produced by
 - * an individual,
 - * or a small club.
- * A commercial profit and loss account looks very different
 - * even though precisely the same ideas underlie it
- * Example on next slide....

Profit and loss account for our example services company

Profit and loss account for a software company		
XYZ Software Ltd		
Profit and Loss Account	2012	2011
Year ending 31 October 2012	£'000	£'000
TURNOVER		
Continuing operations	14,311	11,001
Acquisitions	407	
Total Turnover	14,718	11,001
Cost of Sales	(11,604)	(8,699)
Gross Profit	3,114	2,302
Other operating expenses	(1,177)	(805)
Operating Profit	1,937	1,497
Interest Payable	(23)	(27)
Profit before Taxation	1,914	1,470
Taxation on profit	(719)	(480)
Retained Profits	1,195	990

Like the student's P+L account, there are

- incomes
- and expenditures

Commercial P & L Accounts

- * Just as with the balance sheet, items have been aggregated into very broad categories

XYZ Software Ltd
Profit and Loss Account
Year ending 31 October 2012
TURNOVER
Continuing operations
Acquisitions
Total Turnover
Cost of Sales
Gross Profit
Other operating expenses
Operating Profit
Interest Payable
Profit before Taxation
Taxation on profit
Retained Profits

Turnover

XYZ Software Ltd	
Profit and Loss Account	2012
Year ending 31 October 2012	£'000
TURNOVER	
Continuing operations	14,311
Acquisitions	407
Total Turnover	14,718
Cost of Sales	(11,604)
Gross Profit	3,114
Other operating expenses	(1,177)
Operating Profit	1,937
Interest Payable	(23)
Profit before Taxation	1,914
Taxation on profit	(719)
Retained Profits	1,195

- * Turnover is the *income* that a business has from its normal business activities,
 - * usually from the sale of goods and services to customers.

Turnover from Acquisitions

TURNOVER		
Continuing operations	14,311	11,001
Acquisitions	407	
Total Turnover	14,718	11,001

- * During 2012, another company was acquired (by XYZ Ltd).
- * The turnover generated from that acquired company is shown separately from the turnover from continuing operations
 - * operations that were carried on 2011 and 2012.
- * This is to facilitate the comparison between the two years.
- * In the same way, if part of XYZ Ltd had been disposed of in 2011, its turnover would have been shown under the heading, 'discontinued operations'.
- * Q: Does the £407k mean the company cost that much to buy, or produced that much new turnover to XYZ after it was bought?

Expenditures

XYZ Software Ltd	
Profit and Loss Account	2012
Year ending 31 October 2012	£'000
TURNOVER	
Continuing operations	14,311
Acquisitions	407
Total Turnover	14,718
Cost of Sales	(11,604)
Gross Profit	3,114
Other operating expenses	(1,177)
Operating Profit	1,937
Interest Payable	(23)
Profit before Taxation	1,914
Taxation on profit	(719)
Retained Profits	1,195

- * Most expenditures are self-explanatory,
- * Except for...

Cost of Sales vs. Expenses

Total Turnover	14,718
Cost of Sales	(11,604)
Gross Profit	3,114
Other operating expenses	(1,177)

- * Some expenses are classified as “cost of sales”, and some are “operating expenses”.
- * E.g. For our package software company XYZ, we have
 1. Expenditure on selling, printing documentation, installing software, etc.
 2. Expenditure on the development of new versions of existing packages or on new products

Q: So which are these? “Cost of Sales” or “Other operating expenses?”

Cost of Sales vs. Expenses

Total Turnover	14,718
Cost of Sales	(11,604)
Gross Profit	3,114
Other operating expenses	(1,177)

- * However for some companies, the distinction between, 'cost of sales' and 'other operating expenses' can be an uncertain one
 - * Therefore some companies do not show the items separately.

'The Bottom Line'

XYZ Software Ltd	
Profit and Loss Account	2012
Year ending 31 October 2012	£'000
TURNOVER	
Continuing operations	14,311
Acquisitions	407
Total Turnover	14,718
Cost of Sales	(11,604)
Gross Profit	3,114
Other operating expenses	(1,177)
Operating Profit	1,937
Interest Payable	(23)
Profit before Taxation	1,914
Taxation on profit	(719)
Retained Profits	1,195

- * The bottom line shows the retained profit, i.e. the profit not paid out in tax or dividends to shareholders
- * This is £1195k

'The Bottom Line'

- * This £1195k bottom line figure is added to the retained profit in the previous year's balance sheet to give the value of the retained profit shown in the new balance sheet.
- * (Reminder from balance sheet)...

As at 31 October 2012		
	2012	2011
	£'000	£'000
Profit and loss account	3,887	2,692

+£1195k



P & L Notes

- * The profit and loss account itself gives very little information about
 - * Where the company's revenue during the year has come from
 - * How it has spent its money
- * These details might be given as additional “notes” in the accounts

P & L Notes

- * A software-package company, for example, might show in the notes:
 - * How much of its income came from sales of software packages,
 - * how much from training and consultancy,
 - * and how much from maintenance contracts.

1. The Balance Sheet

(What a company owns and owes)

2. The Profit & Loss Account

(Shows how much money has come into and out of the company in a given time period)

3. The Cash-Flow Statement

contributed to the figures in the balance sheet)

(Gives details of the cash flows that

Cash-Flow Statements

- * The cash-flow statement gives greater details of cash that comes into and goes out of a company
- * Cash is defined as:
 - * Cash at the bank
 - * Plus cash in hand
 - * Plus cash equivalents
 - * Less bank overdrafts
 - * Less other borrowings repayable within one year of the accounting date
- * In other words, cash is immediately accessible capital

Cash-Flow Statements

- * The cash-flow statement also describes “capital expenditure”
 - * Capital expenditure are funds used by a company to acquire or upgrade physical assets such as property, industrial buildings or equipment.
 - * Capital expenditure affects the balance sheet
 - * But the details on what was spent where was not given on the Balance Sheet or P&L Account
- * The link that ties the balance sheet and the profit and loss account to the capital expenditure is the cash flow statement.

Jemimah's Cash Flow

- * How much 'Cash' does Jemimah have?
 - * £700 (the money in her bank account) plus
 - * £25 (the notes and coins in her possession)
 - * Less £175 (her credit card debt), that is, £550.
- * The previous year, the figure was $£(234 + 40 - 100) = £174$.
- * One function of the cash flow statement is to explain this difference of £376.

Balance sheet for a student		
Jemimah Puddleduck		
Balance Sheet		
As at 31 October 2012		
	2012	2011
ASSETS		
Cash in hand	25	40
Cash at bank	700	234
Pre-paid Accommodation	600	590
LIABILITIES		
Credit Card Bill	175	100
Student Loan	14,000	7,000

Cash flow statement for our example student :

Jemimah Puddleduck		
Cash Flow Statement		
Year ended 31 October 2012		
	2012	2011
Cash Inflow		
Addition to student loan	7,000	7,000
Add back depreciation	400	400
Total cash inflow	7,400	7,400
Cash Outflow		
From income and expenditure account	7,004	7,139
Loans to friends	20	0
Total Cash Outflow	7,024	7,139
Excess of Income Over Expenditure	376	261

The cash-flow statement has

- inflows of cash
- and outflows

The cash-flow statement's bottom line explains the £376 yearly change in cash (from the previous slide)

Cash flow statement for our example student :

Jemimah Puddleduck		
Cash Flow Statement		
Year ended 31 October 2012		
	2012	2011
Cash Inflow		
Addition to student loan	7,000	7,000
Add back depreciation	400	400
Total cash inflow	7,400	7,400
Cash Outflow		
From income and expenditure account	7,004	7,139
Loans to friends	20	0
Total Cash Outflow	7,024	7,139
Excess of Income Over Expenditure	376	261

- The P+L bottom line appears on the cash flow statement as a single item
- But the cash-flow statement also includes cash items from non-income/expenditures
 - E.g. cash from loans

Jemimah's outflows of cash

- * The most obvious source of a change in the cash Jemimah holds is her P & L account (Income and Expenditure Account).
- * That bottom line was £-7,004
- * Hence she appears to have spent £7,004 more than she received
- * This appears on her cash-flow statement as a major cash outflow.:

Cash Outflow	
From income and expenditure account	7,004
Loans to friends	20
Total Cash Outflow	7,024

Jemimah's outflows of cash

- * The only other cash outflow is the £20 that she has lent to a friend.
 - * This is not expenditure, because it is repayable.
 - * Nevertheless, it represents cash that has been paid out.
- * If she had bought her mobile phone during the year, its cost would also appear as a cash outflow

Cash Outflow	
From income and expenditure account	7,004
Loans to friends	20
Total Cash Outflow	7,024

Q: Why are there only 2 cash outflows? Where are the details of the spending on food, clothes, travel, etc for this student?

Inflows of cash

- * On the balance sheet Jemimah's student loan increased by £7,000 from 2011 to 2012.
 - * This means that she received £7,000 in cash from that source.
 - * While it is an inflow of cash, it is not income, because it will have to be repaid;
 - * Hence it does not appear as income on the income and expenditure (Profit and Loss) account.
 - * But it does appear here, in the cash-flow statement:

Cash Inflow	
Addition to student loan	7,000
Add back depreciation	400
Total cash inflow	7,400

Inflows of cash

- * On her P&L account, the item of £400 for depreciation was a reduction in the value of her capital assets
- * But this was not a real outflow of cash.
- * To take this into account, we add the depreciation back in as a cash inflow.

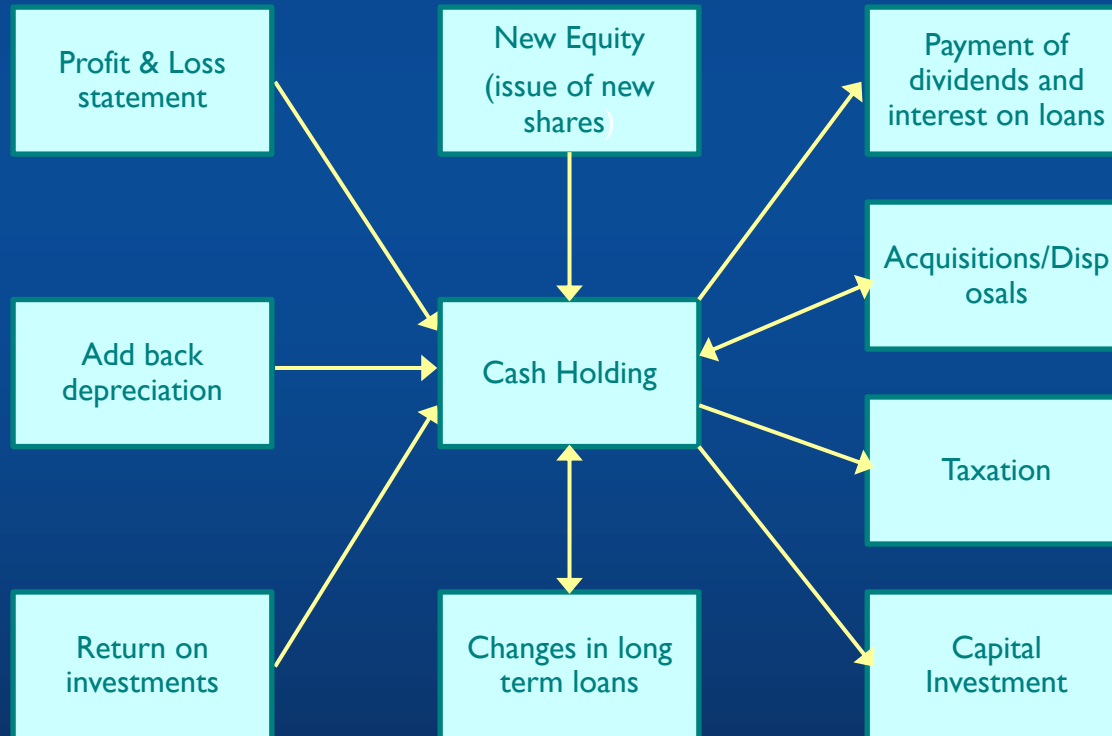
Cash Inflow	
Addition to student loan	7,000
Add back depreciation	400
Total cash inflow	7,400

Company Cash Flows

* Next is the cash-flow statement of a company.

Company Cash Flows

* For a company, there are more routes for cash to enter/exit:



Cash-flow statement for our example company:

Cash-flow statement for a software company		
XYZ Software Ltd		
Cash Flow Statement	2012	2011
Year ended 31 October 2012	£'000	£'000
Net cash inflow from operating activities	2,105	1,620
Returns on investments and servicing of finance	(23)	(27)
Capital expenditure and financial investment	(320)	(265)
Taxation	(719)	(480)
Acquisitions & disposals	(380)	
Equity dividend paid		
Cash outflow before financing	(1342)	(772)
Net cash inflow before financing	663	848
Financing		
Issue of share capital	215	100
Repayment of long-term loan	(50)	
	165	
Increase in cash in the year	828	948

There are inflows and outflows but they are interspersed together here

Company Cash: Inflow

- * The first inflow of cash is the operating profit (before tax)

XYZ Software Ltd	
Cash Flow Statement	2012
Year ended 31 October 2012	£'000
Net cash inflow from operating activities	2,105

- * This came from the “Operating profit” figure on the P+L statement:

Operating Profit	1,937
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- * However before appearing on the Cash flow statement, it was adjusted slightly (from £1937k to £2105k)
 - * for certain items which may appear in the P & L but do not involve the movement of money in or out of the company. E.g.
 - * Depreciation.
 - * Entered in the P & L to show the extent to which any of the fixed assets was consumed during the year
 - * In no way does it reflect the movement of money out of the company, and so it must be added to operating profit.
 - * This could have been entered separately as “add back depreciation”, like was done for the students cash-flow statement

Company Cash Outflows

* Next, we include items that lead to cash leaving the company for reasons not directly connected with its operations.

* Return on investments and servicing of debt

* Capital expenditure; Investment

* Taxation; Dividends paid on shares

Net cash inflow from operating activities	2,105
Returns on investments and servicing of finance	(23)
Capital expenditure and financial investment	(320)
Taxation	(719)
Acquisitions & disposals	(380)
Equity dividend paid	
Cash outflow before financing	(1342)
Net cash inflow before financing	663
Financing	
Issue of share capital	215
Repayment of long-term loan	(50)
	165
Increase in cash in the year	828

Acquisitions & Disposals

- * This shows XYZ bought another company.
- * This resulted in a cash outflow
- * The sale of a division or subsidiary might result in a cash inflow.

Net cash inflow from operating activities	2,105
Returns on investments and servicing of finance	(23)
Capital expenditure and financial investment	(320)
Taxation	(719)
Acquisitions & disposals	(380)
Equity dividend paid	
Cash outflow before financing	(1342)
Net cash inflow before financing	663
Financing	
Issue of share capital	215
Repayment of long-term loan	(50)
	165
Increase in cash in the year	828

Net Cash Inflow

* “Net cash inflow”

=Total figure for the inflow or outflow of cash into or out of the company (before taking into account any changes in the financing of the company):

Net cash inflow from operating activities	2,105
Returns on investments and servicing of finance	(23)
Capital expenditure and financial investment	(320)
Taxation	(719)
Acquisitions & disposals	(380)
Equity dividend paid	
Cash outflow before financing	(1342)
Net cash inflow before financing	663
Financing	
Issue of share capital	215
Repayment of long-term loan	(50)
	165
Increase in cash in the year	828

Financing

- * The final section of the cash flow statement shows the effect of changes in the financing of the company on the cash position.

Net cash inflow from operating activities	2,105
Returns on investments and servicing of finance	(23)
Capital expenditure and financial investment	(320)
Taxation	(719)
Acquisitions & disposals	(380)
Equity dividend paid	
Cash outflow before financing	(1342)
Net cash inflow before financing	663
Financing	
Issue of share capital	215
Repayment of long-term loan	(50)
	165
Increase in cash in the year	828

Financing

- * The company has issued new shares and raised £215,000 through this
- * It has also paid off £50,000 of long-term debt.

Net cash inflow from operating activities	2,105
Returns on investments and servicing of finance	(23)
Capital expenditure and financial investment	(320)
Taxation	(719)
Acquisitions & disposals	(380)
Equity dividend paid	
Cash outflow before financing	(1342)
Net cash inflow before financing	663
Financing	
Issue of share capital	215
Repayment of long-term loan	(50)
	165
Increase in cash in the year	828

Financing

- * Both financing items affect the company's cash position
- * The bottom line gives the overall change in the company's cash position over the year.

Net cash inflow from operating activities	2,105
Returns on investments and servicing of finance	(23)
Capital expenditure and financial investment	(320)
Taxation	(719)
Acquisitions & disposals	(380)
Equity dividend paid	
Cash outflow before financing	(1342)
Net cash inflow before financing	663
Financing	
Issue of share capital	215
Repayment of long-term loan	(50)
	165
Increase in cash in the year	828

Financing

- * The £828 figure represents the change in the company's cash + bank balance from 2011 to 2012 (which changed from £1663 to £2491)

Net cash inflow from operating activities	2,105
Returns on investments and servicing of finance	(23)
Capital expenditure and financial investment	(320)
Taxation	(719)
Acquisitions & disposals	(380)
Equity dividend paid	
Cash outflow before financing	(1342)
Net cash inflow before financing	663
Financing	
Issue of share capital	215
Repayment of long-term loan	(50)
	165
Increase in cash in the year	828

Paying Attention?

- * XYZ's balance sheet showed that, despite the fact that a loan of £50,000 has been paid off, the long-term debt has increased from £61,000 to £154,000

Balance sheet for XYZ (reminder)...

- * There is nothing

Creditors: Amounts falling due after one year

Borrowings

(154)

(61)

£.

- * What's happening?
- * It's probably to do with the acquisition made (i.e. the company XYZ bought)....

How is company XYZ doing?

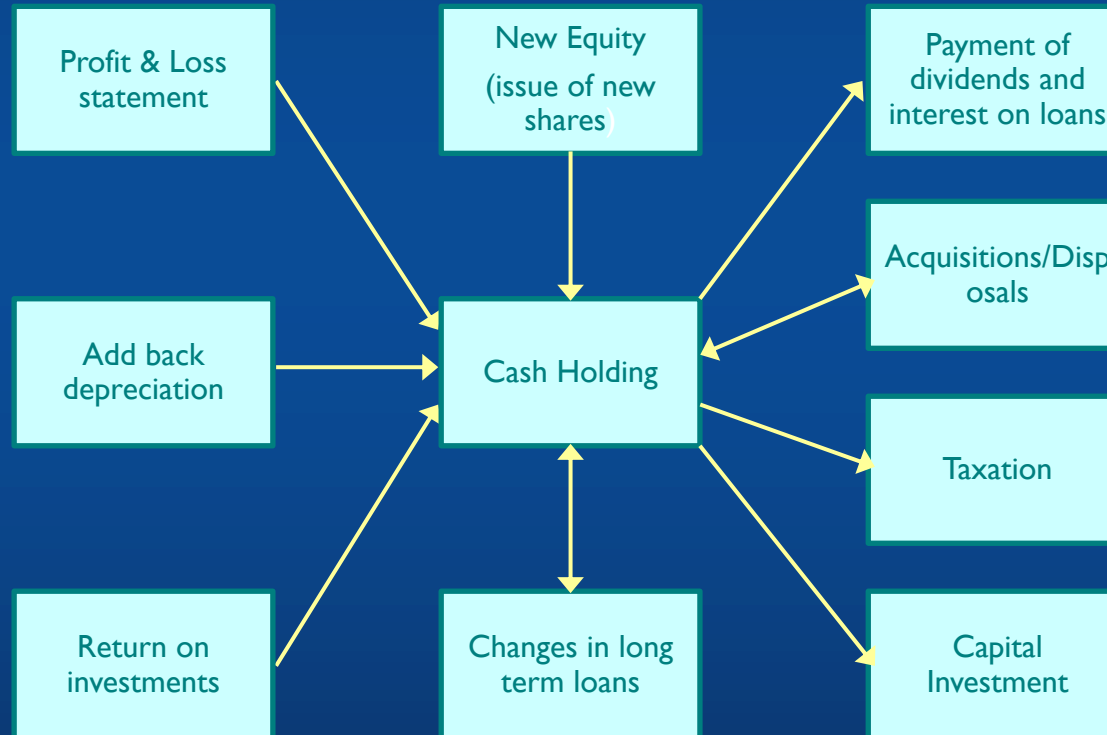
- * The cash-flow statement shows that £380 was spent on “acquisitions & disposals”
- * Also the P+L account shows £407k of turnover was contributed from “acquisitions”
- * The likelihood is that the company bought had substantial debts, which were taken over by XYZ as part of the deal.
- * That accounts for the increase in debt XYZ now has.
- * This would be explained in the notes to the accounts.

How is company XYZ doing?

- * Hence the accounts show XYZ to be a vigorous company
 - * Growing rapidly
 - * Probably in an expanding market

Summary of Company Cash Flows

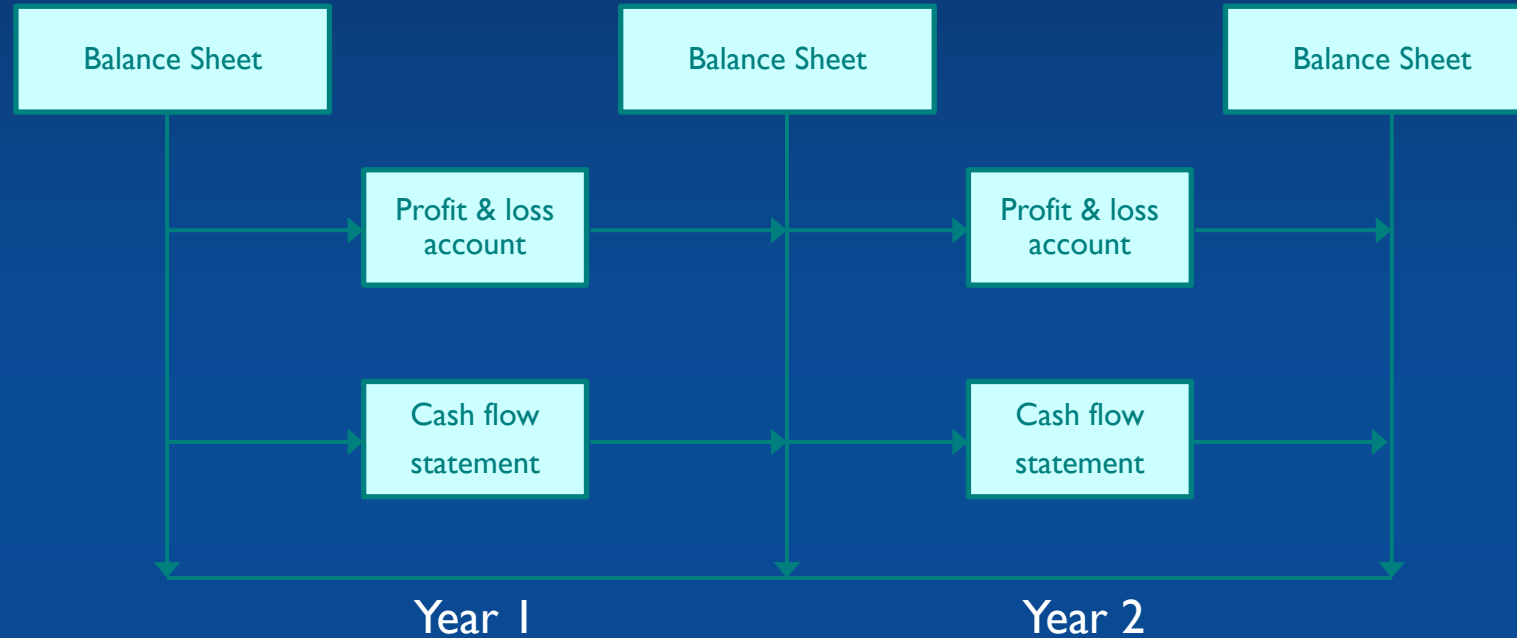
* The arrows show the normal direction for a profitable co.



The Overall Picture

- * Balance sheet, P & L and cash flow cannot be read in isolation
- * We must understand the relationship between them
- * They must be read together in order to assess the financial state of a company...

Three Financial Statements



- * The balance sheet is a snapshot at the end of a reporting period (typically the financial year end)
- * The P & L and the Cash Flow Statement describe what has happened during that period
 - * They explain the relationship between successive balance sheets

Next lecture...

- * These financial statements are important reporting tools
- * But they are not enough to inform managers day to day
 - * For that we need to understand management accounts
 - * The subject of the next lecture.
- * Quiz on this lecture on Moodle.