

Chapter 2

CASH FLOWS

Let's work from A to Z (unless it turns out to be Z to A!)

In the introduction, we emphasised the importance of cash flows as the basic building block of securities. Likewise, we need to start our study of corporate finance by analysing company cash flows.

CLASSIFYING COMPANY CASH FLOWS

Let's consider, for example, the monthly account statement that individual customers receive from their bank. It is presented as a series of lines showing the various inflows and outflows of money on precise dates and in some cases the type of transaction (deposit of cheques, for instance).

Our first step is to trace the rationale for each of the entries on the statement, which could be everyday purchases, payment of a salary, automatic transfers, loan repayments or the receipt of bond coupons, to cite but a few examples.

The corresponding task for a financial manager is to reclassify company cash flows by category to draw up a cash flow document that can be used to:

- analyse past trends in cash flow (the document put together is generally known as a **cash flow statement**¹); or
- project future trends in cash flow, over a shorter or longer period (the document needed is a cash flow budget or plan).

¹ Or sometimes as a statement of changes in financial position.

With this goal in mind, we will now demonstrate that cash flows can be classified into one of the following processes.

- Activities that form part of the industrial and commercial life of a company:
 - operating cycle;
 - investment cycle.
- Financing activities to fund these cycles:
 - the debt cycle;
 - the equity cycle.

Section 2.1

OPERATING AND INVESTMENT CYCLES

1/ THE IMPORTANCE OF THE OPERATING CYCLE

Let's take the example of a greengrocer, who is "cashing up" one evening. What does he find? First, he sees how much he spent in cash at the wholesale market in the morning and then the cash proceeds from fruit and vegetable sales during the day. If we assume that the greengrocer sold all the produce he bought in the morning at a mark-up, the balance of receipts and payments for the day will be a cash surplus.

Unfortunately, things are usually more complicated in practice. Rarely is all the produce bought in the morning sold by the evening, especially in the case of a manufacturing business.

A company processes raw materials as part an operating cycle, the length of which varies tremendously, from a day in the newspaper sector to seven years in the cognac sector. There is thus a time lag between purchases of raw materials and the sale of the corresponding finished goods.

And this time lag is not the only complicating factor. It is unusual for companies to buy and sell in cash. Usually, their suppliers grant them extended payment periods, and they in turn grant their customers extended payment periods. The money received during the day does not necessarily come from sales made on the same day.

As a result of customer credit², supplier credit³ and the time it takes to manufacture and sell products or services, the operating cycle of each and every company spans a certain period, **leading to timing differences between operating outflows and the corresponding operating inflows.**

Each business has its own operating cycle of a certain length that, from a cash flow standpoint, may lead to positive or negative cash flows at different times. Operating outflows and inflows from different cycles are analysed by period, e.g. by month or by year. The balance of these flows is called **operating cash flow**. Operating cash flow reflects the cash flows generated by operations during a given period.

In concrete terms, operating cash flow represents the cash flow generated by the company's day-to-day operations. Returning to our initial example of an individual looking at his bank statement, it represents the difference between the receipts and normal outgoings, such as food, electricity and car maintenance costs.

Naturally, unless there is a major timing difference caused by some unusual circumstances (startup period of a business, very strong growth, very strong seasonal fluctuations), the balance of operating receipts and payments should be positive.

Readers with accounting knowledge will note that operating cash flow is independent of any accounting policies, which makes sense since it relates only to cash flows. More specifically:

- neither the company's depreciation and provisioning policy,
- nor its inventory valuation method,
- nor the techniques used to defer costs over several periods

have any impact on the figure.

However, the concept is affected by decisions about how to classify payments between investment and operating outlays, as we will now examine more closely.

2 That is, credit granted by the company to its customers, allowing them to pay the bill several days, weeks or in some countries, even several months, after receiving the invoice.

3 That is, credit granted by suppliers to the company.

2/ INVESTMENT AND OPERATING OUTFLOWS

Let's return to the example of our greengrocer, who now decides to add frozen food to his business.

The operating cycle will no longer be the same. The greengrocer may, for instance, begin receiving deliveries once a week only and will therefore have to run much larger inventories. Admittedly, the impact of the longer operating cycle due to much larger inventories may be offset by larger credit from his suppliers. The key point here is to recognise that the operating cycle will change.

The operating cycle is different for each business and, generally speaking, the more sophisticated the end product, the longer the operating cycle.

But, most importantly, before he can startup this new activity, our greengrocer needs to invest in a freezer chest.

What difference is there from solely a cash flow standpoint between this investment and operating outlays?

The outlay on the freezer chest seems to be a prerequisite. It forms the basis for a new activity, the success of which is unknown. It appears to carry higher risks and will be beneficial only if overall operating cash flow generated by the greengrocer increases. Lastly, **investments are carried out from a long-term perspective and have a longer life than that of the operating cycle**. Indeed, they last for several operating cycles, even if they do not last for ever given the fast pace of technological progress.

This justifies the distinction, from a cash flow perspective, between operating and investment outflows.

Normal outflows, from an individual's perspective, differ from an investment outflow in that they afford enjoyment, whereas investment represents abstinence. As we will see, this type of decision represents one of the vital underpinnings of finance. Only the very puritanically-minded would take more pleasure from buying a microwave than from spending the same amount of money at a restaurant! One of these choices can only be an investment and the other an ordinary outflow. So what purpose do investments serve? Investment is worthwhile only if the decision to forgo normal spending, which gives instant pleasure, will subsequently lead to greater gratification.

From a cash flow standpoint, an investment is an outlay that is subsequently expected to increase operating cash flow such that overall the individual will be happy to have forsaken instant gratification.

This is the definition of the **return on investment** (be it industrial or financial) from a cash flow standpoint. We will use this definition throughout this book.

Like the operating cycle, the investment cycle is characterised by a series of inflows and outflows. But the length of the investment cycle is far larger than the length of the operating cycle.

The purpose of investment outlays (also frequently called capital expenditures) is to alter the operating cycle, e.g. to boost or enhance the cash flows that it generates.

The impact of investment outlays is spread over several operating cycles. Financially, capital expenditures are worthwhile only if inflows generated thanks to these expenditures exceed the required outflows by an amount yielding at least the return on investment expected by the investor.

Note also that a company may sell some assets in which it has invested in the past. For instance, our greengrocer may decide after several years to trade in his freezer for a larger model. The proceeds would also be part of the investment cycle.

3/ FREE CASH FLOW

Free cash flow before-tax is defined as the difference between operating cash flow and capital expenditure net of fixed assets disposals.

As we shall see in Sections II and III of this book, free cash flow can be calculated before or after tax. It also forms the basis for the most important valuation technique. Operating cash flow is a concept that depends on how expenditure is classified between operating and investment outlays. Since this distinction is not always clear cut, operating cash flow is not widely used in practice, with free cash flow being far more popular. If free cash flow turns negative, additional financial resources will have to be raised to cover the company's cash flow requirements.

Section 2.2 FINANCIAL RESOURCES

The operating and investment cycles give rise to a timing difference in cash flows. Employees and suppliers have to be paid before customers settle up. Likewise, investments have to be completed before they generate any receipts. Naturally, this cash flow deficit needs to be filled. This is the role of **financial resources**.

The purpose of financial resources is simple: they must cover the shortfalls resulting from these timing differences by providing the company with sufficient funds to balance its cash flow.

These financial resources are provided by investors: shareholders, debtholders, lenders, etc. These financial resources are not provided with “no strings attached”. In return for providing the funds, investors expect to be subsequently “rewarded” by receiving dividends or interest payments, registering capital gains, etc. This can happen only if the operating and investment cycles generate positive cash flows.

To the extent that the financial investors have made the investment and operating activities possible, they expect to receive, in various different forms, their fair share of the surplus cash flows generated by these cycles.

The financing cycle is therefore the “flip side” of the investment and operating cycles.

At its most basic, the principle would be to finance these shortfalls solely using capital that incurs the risk of the business. Such capital is known as **shareholders' equity**. This type of financial resource forms the cornerstone of the entire financial system. Its importance is such that shareholders providing it are granted decision-making powers and control over the business in various different ways. From a cash flow standpoint, the equity cycle comprises inflows from capital increases and outflows in the form of dividend payments to the shareholders.

Without casting any doubt on their managerial capabilities, all our readers have probably had to cope with cash flow shortfalls, if only as part of their personal financial affairs. The usual approach in such circumstances is to talk to a banker. Your banker will only give you a loan if he believes that you will be able to repay the loan with interest. Bank loans may be short-term (overdraft facilities) or long-term (e.g. a loan to buy an apartment).

Like individuals, a business may decide to ask lenders rather than shareholders to help it cover a cash flow shortage. Bankers will lend funds only after they have carefully analysed the company's financial health. They want to be nearly certain of being repaid and do not want exposure to the company's business risk. These cash flow shortages may be short-term, long-term or even permanent, but lenders do not want to take on business risk. The capital they provide represents the company's **debt capital**.

The debt cycle is the following: the business arranges borrowings in return for a commitment to repay the capital and make interest payments regardless of trends in its operating and investment cycles. These undertakings represent firm commitments ensuring that the lender is certain of recovering its funds provided that the commitments are met. This definition applies to both:

- financing for the investment cycle, with the increase in future net receipts set to cover capital repayments and interest payments on borrowings; and
- financing for the operating cycle, with credit making it possible to bring forward certain inflows or to defer certain outflows.

From a cash flow standpoint, the life of a business comprises an operating and an investment cycle, leading to a positive or negative free cash flow. If free cash flow is negative, the financing cycle covers the funding shortfall.

As the future is unknown, a distinction has to be drawn between:

- **equity, where the only commitment is to enable the shareholders to benefit fully from the success of the venture;**
- **debt capital, where the only commitment is to meet the capital repayments and interest payments regardless of the success or failure of the venture.**

The risk incurred by the lender is that this commitment will not be met. Theoretically speaking, debt may be regarded as an advance on future cash flows generated by the investments made and guaranteed by the company's shareholders' equity.

Although a business needs to raise funds to finance investments, it may also find at a given point in time that it has a cash surplus, i.e. the funds available exceed cash requirements.

These surplus funds are then invested in short-term investments and marketable securities that generate revenue, called financial income.

Although at first sight short-term financial investments (marketable securities) may be regarded as investments since they generate a rate of return, we advise readers to consider them instead as the opposite of debt. As we will see, company treasurers often have to raise additional debt just to reinvest those funds in short-term investments without speculating in any way.

These investments are generally realised with a view to ensuring the possibility of a very quick exit without any risk of losses.

Debt and short-term financial investments or marketable securities should not be considered independently of each other, but as inextricably linked. We suggest that readers **reason in terms of debt net of short-term financial investments and financial expense net of financial income.**

Putting all the individual pieces together, we arrive at the following simplified cash flow statement, with the balance reflecting the net decrease in the company's debt during a given period:

SIMPLIFIED CASH FLOW STATEMENT

	2008	2009	2010
Operating receipts			
– Operating payments			
= Operating cash flow			
– Capital expenditure			
+ Fixed asset disposals			
= Free cash flow before tax			
– Financial expense net of financial income			
– Corporate income tax			
+ Proceeds from share issue			
– Dividends paid			
= Net decrease in debt			
With:			
Repayments of borrowings			
– New bank and other borrowings			
+ Change in marketable securities			
+ Change in cash and cash equivalents			
= Net decrease in debt			

SUMMARY



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The cash flows of a company can be divided into four categories, i.e. operating and investment flows, which are generated as part of its business activities, and debt and equity flows, which finance these activities.

The operating cycle is characterised by a time lag between the positive and negative cash flows deriving from the length of the production process (which varies from business to business) and the commercial policy (customer and supplier credit).

Operating cash flow, the balance of funds generated by the various operating cycles in progress, comprises the cash flows generated by a company's operations during a given period. It represents the (usually positive) difference between operating receipts and payments.

From a cash flow standpoint, capital expenditures must alter the operating cycle in such a way as to generate higher operating inflows going forward than would otherwise have been the case. Capital expenditures are intended to enhance the operating cycle by enabling it to achieve a higher level of profitability in the long term. This profitability can

be measured only over several operating cycles, unlike operating payments which belong to a single cycle. As a result, investors forgo immediate use of their funds in return for higher cash flows over several operating cycles.

Free cash flow (before tax) can be defined as operating cash flow minus capital expenditure (investment outlays).

When a company's free cash flow is negative, it covers its funding shortfall through its financing cycle by raising equity and debt capital.

Since shareholders' equity is exposed to business risk, the returns paid on it are unpredictable and depend on the success of the venture. Where a business rounds out its financing with debt capital, it undertakes to make capital repayments and interest payments (financial expense) to its lenders regardless of the success of the venture. Accordingly, debt represents an advance on the operating receipts generated by the investment that is guaranteed by the company's shareholders' equity.

Short-term financial investment, the rationale for which differs from capital expenditures, and cash should be considered in conjunction with debt. We will always reason in terms of net debt (i.e. net of cash and of marketable securities, which are short-term financial investments) and net financial expense (i.e. net of financial income).

- 1/What are the four basic cycles of a company?
- 2/Why do we say that financial flows are the flip side of investment and operating flows?
- 3/Define operating cash flow. Should the company be able to spend this surplus as it likes?
- 4/Is operating cash flow an accounting profit?
- 5/Why do we say that as a general rule, operating cash flow should be positive? Provide a simple example that demonstrates that operating cash flow can be negative during periods of strong growth, startup periods and in the event of strong seasonal fluctuations.
- 6/When a cash flow budget is drawn up for the purposes of assessing an investment, can free cash flows be negative? If so, is it more likely that this will be the case at the beginning or at the end of the business plan period? Why?
- 7/Among the following different flows, which will be appropriated by both shareholders and lenders: operating receipts, operating cash flow, free cash flows? Who has priority, shareholders or lenders? Why?
- 8/A feature of a supermarket chain such as Tesco or Ahold is a very fast rotation of food stocks (six days), cash payments by customers, long supplier credit periods (60 days) and very low administrative costs. Will the operating cycle generate cash requirements or a cash surplus?

QUESTIONS



- 9/Should the cash outflows of launching a new perfume be considered as an operating outlay or an investment outlay?
- 10/How is an investment decision analysed from a cash standpoint?
- 11/After reading this chapter, can you guess how to define bankruptcy?
- 12/Is debt capital risk free for the lender? Can you analyse what the risk is? Why do some borrowers default on loans?

EXERCISES

- 1/ Boomwichers NV, a Dutch company financed by shareholders' equity only, decides during the course of 2008 to finance an investment project worth €200m using shareholders' equity (50%) and debt (50%). The loan it takes out (€100m) will be paid off in full in $n + 5$, and the company will pay 5% interest per year over the period. At the end of the period, you are asked to complete the following simplified table (no further investments are to be made):

Period	2008	2009	2010	2011	2012	2013
Operating inflows	165	200	240	280	320	360
Operating outflows	165	175	180	185	180	190
Operating cash flows						
Investments	-200					
Free cash flows						
Flows ...						
... to creditors						
... to shareholders						

What do you conclude from the above?

- 2/ Ellingham plc opens a Spanish subsidiary, which starts operating on 2 January 2005. On 2 January 2005 it has to buy a machine costing €30m, partly financed by a €20m bank loan repayable in instalments of €2m every 15 July and 15 January over 5 years. Financial expenses, payable on a half-yearly basis, are as follows:

2008		2009		2010		2011		2012	
June	Dec								
1	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1

Profits are tax-free. Sales will be €12m per month. A month's inventory of finished products will have to be built up. Customers pay at 90 days.

The company is keen to have a month's worth of advance purchases and, accordingly, plans to buy two months' worth of supplies in January 2008. Requirements in a normal month amount to €4m.

The supplier grants the company a 90-day payment period. Other costs are:

- personnel costs of €4m per month;
- shipping, packaging and other costs, amounting to €2m per month and paid at 30 days. These costs are incurred from 1 January 2008.

Draw up a monthly and an annual cash flow plan.

How much cash will the subsidiary need at the end of each month over the first year? And if operations are identical, how much will it need each month over 2009? What is the change in the cash position over 2009 (no additional investments are planned)?

Questions

- 1/ *Operating, investment, debt, and equity cycles.*
- 2/ *Because negative free cash flows generated by operating and investment cycles must be compensated by resources from the financial cycle. When free cash flows are positive, they are entirely absorbed by the financial cycle (debts are repaid, dividends are paid, etc).*
- 3/ *It is the balance of the operating cycle. No, as it has to repay banking debts when they are due, for example.*
- 4/ *No, it is a cash flow, not an accounting profit.*
- 5/ *It measures flows generated by the company's operations, i.e. its business or "raison d'être". If it is not positive in the long term, the company will be in trouble. Major shortfall due to operating cycle, large inventories, operating losses on startup, heavy swings in operating cycle.*
- 6/ *Yes. At the beginning, an investment may need time to run at full speed.*
- 7/ *Free cash flows since all operating or investment outlays have been paid. The lenders because of contractual agreement.*
- 8/ *A cash surplus, as customer receipts come in before suppliers are paid.*
- 9/ *Investment outlays, from which the company will benefit over several financial years as the product is being put onto the market.*
- 10/ *Expenditure should generate inflows over several financial periods.*
- 11/ *The inability to find additional resources to meet the company's financial obligations.*
- 12/ *No. The risk is the borrowers' failure to honour contracts either because of inability to repay due to poor business conditions or because of bad faith.*

ANSWERS

⁴ Excel version of the solutions are available on the website.

Exercises⁴

1/ Boomwichers NV Period

	2008	2009	2010	2011	2012	2013
Operating inflows	165	200	240	280	320	360
Operating outflows	165	175	180	185	180	190
Operating cash flows	0	25	60	95	140	170
Investments	-200	0	0	0	0	0
Free cash flows	-200	25	60	95	140	170
Flows . . .						
. . . to creditors	-100	5	5	5	5	105
. . . to shareholders	-100	20	55	90	135	65

The investment makes it possible to repay creditors and leave cash for shareholders.

2/ Ellingham plc exercise, see p. 70.

BIBLIOGRAPHY

To learn more about cash flows:

E. Helfert, *Techniques of Financial Analysis*, 11th edn. Irwin, 2002.

G. Friedlob, R. Welton, *Keys to Reading an Annual Report*, Barrons Educational Series, 2008.