

Chapter 11

WORKING CAPITAL AND CAPITAL EXPENDITURES

Building the future

As we saw in the standard financial analysis, all value creation requires investment. In finance, investment means creating either new fixed assets or working capital. The latter, often high in continental Europe, deserves some explanation.

Section 11.1

THE NATURE OF WORKING CAPITAL

Every analyst intuitively tries to establish a percentage relationship between a company's working capital and one or more of the measures of the volume of its business activities. In most cases, the chosen measure is annual turnover or sales.

The ratio:

$$\frac{\text{Operating working capital}}{\text{Annual sales}}$$

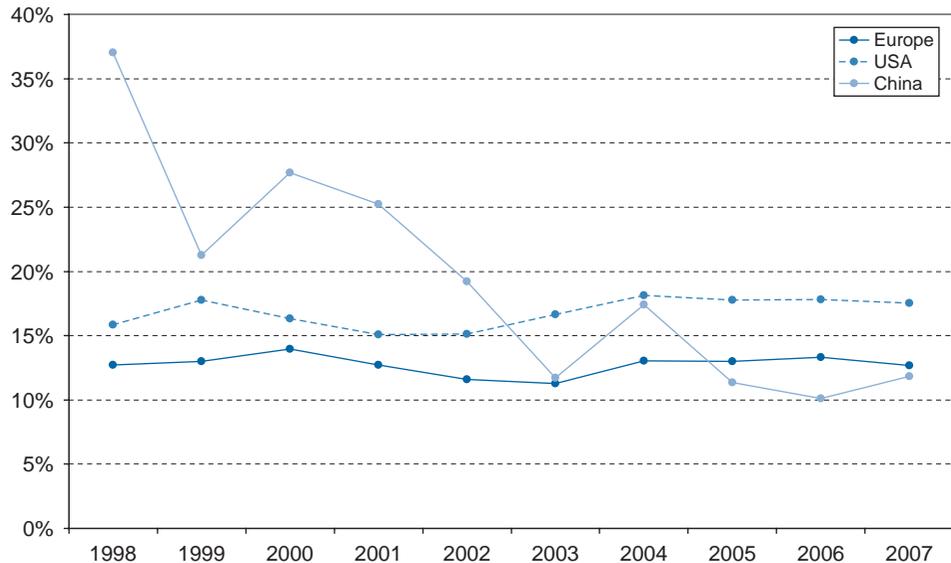
reflects the fact that the operating cycle generates an operating working capital that includes:

- capital “frozen” in the form of inventories, representing procurement and production costs that have not yet resulted in the sale of the company's products;
- funds “frozen” in customer receivables, representing sales that customers have not yet paid for;
- accounts payable that the company owes to suppliers.

The balance of these three items represents the net amount of money tied up in the operating cycle of the company. In other words, if the working capital turnover ratio is 25% (which is high), this means that 25% of the company's annual sales volume is “frozen” in inventories and customer receivables not financed by supplier credit. This also means that, at any moment, the company needs to have on hand funds equal to a quarter of its annual sales to pay suppliers and employee salaries for materials and work performed on products or services that have not yet been manufactured, sold or paid for by customers.

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WORKING CAPITAL IN % OF SALES FOR LEADING LISTED COMPANIES WORLDWIDE WCR/SALES



The above table shows trends in the working capital turnover ratio in various geographical areas over the 1998–2007 period.

As we will see in Section 11.2 working capital is often expressed as a number of days of sales. This figure is derived at by multiplying a percentage ratio by 365. In our example, a ratio of 25% indicates that working capital totals around 90 days of the company's sales.

1/ STEADY BUSINESS, PERMANENT WORKING CAPITAL

Calculated from the balance sheet, a company's working capital is the balance of the accounts directly related to the operating cycle. According to traditional financial theory, these amounts are very liquid; that is, they will either be collected or paid within a very short period of time. **But in fact, although it is liquid, working capital also reflects a permanent requirement.**

No matter when the books are closed, the balance sheet always shows working capital, although the amount changes depending on the statement date. The only exceptions are the rare companies whose operating cycle actually generates cash rather than absorbs it.

There is an apparent contradiction between the essentially liquid nature of working capital on the one hand and its permanence on the other.

Working capital is liquid in the sense that every element of it disappears in the ordinary course of business. Raw materials and inventories are consumed in the manufacturing process. Work in progress is gradually transformed into finished products. Finished products are (usually) sold. Receivables are (ordinarily) collected and become cash, bank balances, etc. Similarly, debts to suppliers become outflows of cash when they are paid.

As a result, if the production cycle is less than a year (which is usually the case) all of the components of working capital at the statement date will disappear in the course of the following year. But at the next statement date, other operating assets will have taken their place. **This is why we view working capital as a permanent requirement.**

Even if each component of working capital has a relatively short lifetime, the operating cycles are such that the contents of each are replaced by new contents. As a result, if the level of business activity is held constant, the various working capital accounts remain at a constant level.

All in all, at any given point in time, a company's working capital is indeed liquid. It represents the difference between some current assets and some current liabilities. But thinking in terms of a "permanent working capital" introduces a radically different concept. It suggests that if business is stable, current (liquid) operating assets and current operating liabilities will be renewed and new funds will be tied up, constituting a permanent capital requirement as surely as fixed assets are a permanent capital requirement.

Working capital is two-sided. From the point of view of balance sheet value, it is liquid. From a going-concern point of view, it is permanent.

2/ SEASONAL BUSINESS ACTIVITY, PARTLY-SEASONAL REQUIREMENT

When a business is seasonal, purchases, production and sales do not take place evenly throughout the year. As a result, working capital also varies during the course of the year, expanding, then contracting.

The working capital of a seasonal business never falls to zero. Whether the company sells canned vegetables or raincoats, a minimum level of inventories is always needed to carry the company over to the next production cycle.

In our experience, companies in seasonal businesses often pay too much attention to the seasonal aspect of their working capital and ignore the fact that a significant part of it is permanent. As some costs are fixed, so are some parts of the working capital.

We have observed that in some very seasonal businesses, such as toys, the peak working capital is only twice the minimum. This means that half of the working capital is permanent, the other half is seasonal.

3/ CONCLUSION: PERMANENT WORKING CAPITAL AND THE COMPANY'S ONGOING NEEDS

An external analyst risks confusing the working capital on the balance sheet with the permanent working capital.

Approximately 30% of all companies close their books at a date other than 31 December. Bordeaux vineyards close on 30 September, Caribbean car rental companies on 30 April. They choose these dates because that is when the working capital requirement shown on their balance sheets is lowest. This is pure window dressing.

A company in trouble uses trade credit to the maximum possible extent. In this case, you must restate working capital by eliminating trade credit that is in excess of normal

levels. Similarly, if inventory is unusually high at the end of the year because the company speculated that raw material prices would rise, then the excess over normal levels should be eliminated in the calculation of permanent working capital. Lastly, to avoid giving the impression that the company is too cash rich, some companies make an extra effort to pay their suppliers before the end of the year. This is more akin to investing cash balances than to managing working capital.

It may be rash to say that the working capital at fiscal year-end is the company's permanent working capital.

Although the working capital on the balance sheet at year-end cannot be used as an indicator of the company's permanent requirement, its year-to-year change can still be informative. Calculated at the same date every year, there should be no seasonal impact. Analysing how the requirement has changed from year-end to year-end can shed light on whether the company's operations are improving or deteriorating.

The year-end working capital is informative only if compared with the working capital at other year-end dates.

You are therefore faced with a choice:

- if the company publishes quarterly financial statements, you can take the permanent working capital to be the lowest of the quarterly balances;
- if the company publishes only year-end statements, you must reason in terms of year-to-year trends and comparisons with competitors.¹

¹ Provided competitors have the same balance sheet closing date.

Section 11.2

WORKING CAPITAL TURNOVER RATIOS

As financial analysis consists in uncovering hidden realities, let's simulate reality to help us understand the analytical tools.

Working capital accounts are composed of uncollected sales, unsold production and unpaid-for purchases, in other words, the business activities that took place during the days preceding the statement date. Specifically:

- if customers pay in 15 days, receivables represent the last 15 days of sales;
- if the company pays suppliers in 30 days, accounts payable represent the last 30 days of purchases;
- if the company stores raw materials for three weeks before consuming them in production, the inventory of raw materials represents the last three weeks of purchases.

These are the principles. Naturally, the reality is more complex, because:

- payment periods can change;
- business is often seasonal, so the year-end balance sheet may not be a real picture of the company;
- payment terms are not the same for all suppliers or all customers;
- the manufacturing process is not the same for all products.

Nevertheless, working capital turnover ratios calculated on the basis of accounting balances represent an attempt to see the reality behind the figures.

1/ THE MENU OF RATIOS

(a) Days' sales outstanding (DSO)

The days' sales outstanding (or days/receivables) ratio measures the average payment terms the company grants its customers (or the average actual payment period). It is calculated by dividing the receivables balance by the company's average daily sales, as follows:

$$\frac{\text{Receivables}}{\text{Annual sales (incl. VAT)}} \times 365 = \text{Days sales outstanding}$$

As the receivables on the balance sheet are shown inclusive of VAT, for consistency, sales must be shown on the same basis. But the sales shown on the profit and loss statement are exclusive of VAT. You must therefore increase it by the applicable VAT rate for the products the company sells or by an average rate if it sells products taxed at different rates.

VAT RATES ACROSS EUROPE, JAPAN AND THE USA

	Reduced rate	Normal rate
France	2.1 or 5.5 %	19.6 %
Germany	7 %	19 %
Italy	4–10 %	20 %
India	1%–4%	12.5%
Japan	0%	5 %
Netherlands	6 %	19 %
Poland	–3%–7 %	22 %
Russia	0%–10 %	18 %
Spain	4–7 %	16 %
Sweden	6–12 %	25 %
Switzerland	2.4–3.6. %	7.6 %
United Kingdom	0–5 %	17.5 %

United States of America VAT does not exist in the USA. A sale tax is paid. Its rate varies across states.

Receivables are calculated as follows:

	Customer receivables and related accounts
+	Outstanding bills discounted
–	Advances and deposits on orders being processed
=	Total receivables

(b) Days' payables outstanding (DPO)

The days/payables ratio measures the average payment terms granted to the company by its suppliers (or the average actual payment period). It is calculated by dividing accounts payable by average daily purchases, as follows:

$$\frac{\text{Accounts payable}}{\text{Annual purchases (incl. VAT)}} \times 365 = \text{Number of days of payables}$$

Accounts payable are calculated as follows:

<p>Accounts payable and related accounts</p> <ul style="list-style-type: none"> – Advances and deposits paid on orders = Total accounts payable

To ensure consistency, purchases are valued inclusive of VAT. They are calculated as follows:

<p>Purchase of goods held for resale (incl. VAT)</p> <ul style="list-style-type: none"> + Purchase of raw materials (incl. VAT) + Other external costs (incl. VAT)
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The amounts shown on the profit and loss statement must be increased by the appropriate VAT rate.

When the figure for annual purchases is not available, (mainly when the income statement is published in the by-function format), the days' payables ratio is approximated as:

$$\frac{\text{Accounts payable}}{\text{Sales (incl. VAT)}} \times 365 = \text{Payables in number of days of sales}$$

(c) Days' inventory outstanding (DIO)

The significance of the inventory turnover ratios depends on the quality of the available accounting information. If it is detailed enough, you can calculate true turnover ratios. If not, you will have to settle for approximations that compare dissimilar data.

You can start by calculating an overall turnover ratio, not meaningful in an absolute sense, but useful in analysing trends:

$$\frac{\text{Inventories and work in progress}}{\text{Annual sales (excl. VAT)}} \times 365 = \text{Approximate in number of days of inventory}$$

Depending on the available accounting information, you can also calculate the turnover of each component of inventory, in particular raw material and goods held for resale, and distil the following turnover ratios:

- **Days of raw material**, reflecting the number of days of purchases the inventory represents or, viewed the other way round, the number of days necessary for raw material on the balance sheet to be consumed:

$$\frac{\text{Inventory of raw material}}{\text{Annual purchases of raw material (excl. VAT)}} \times 365 = \text{Number of days of purchase}$$

- **Days of goods held for resale**, reflecting the period between the time the company purchases goods and the time it resells them:

$$\frac{\text{Inventory of goods held for resale}}{\text{Annual purchases of goods held for resale (excl. VAT)}} \times 365 \\ = \text{Number of days of goods held for resale}$$

- **Days of finished goods inventory**, reflecting the time it takes the company to sell the products it manufactures, and calculated with respect to cost of goods sold:

$$\frac{\text{Inventory of finished goods}}{\text{Annual cost of goods sold}} \times 365 = \text{Number of days of finished goods inventory}$$

If cost of goods sold is unavailable, it is calculated with respect to the sales price:

$$\frac{\text{Finished goods inventory}}{\text{Annual sales (excl. VAT)}} \times 365$$

- **Days of work in progress**, reflecting the time required for work in progress and semi-finished goods to be completed – in other words, the length of the production cycle:

$$\frac{(\text{Work in progress}) + (\text{semi-finished products})}{\text{Annual cost of goods sold}} \times 365 = \text{Length of production cycle}$$

For companies that present their profit and loss statement by nature, this last ratio can be calculated only from internal sources as cost of goods sold does not appear as such on the P&L. The calculation is therefore easier for companies that use the by-function presentation for their profit and loss statement.

2/ THE LIMITS OF RATIO ANALYSIS

Remember that in calculating the foregoing ratios, you must follow two rules:

- make sure the base of comparison is the same: sales price or production cost, inclusive or exclusive of VAT;
- compare outstandings in the balance sheet with their corresponding cash flows.

Turnover ratios have their limitations:

- they can be completely misleading if the business of the company is seasonal. In this case, the calculated figures will be irrelevant. To take an extreme example, imagine a company that makes all its sales in a single month. If it grants payment terms of one month, its number of days' receivables at the end of that month will be 365;
- they provide no breakdown – unless more detailed information is available – of the turnover of the components of each asset (or liability) item related to the operating cycle. For example, receivables might include receivables from private sector customers, international customers and government agencies. These three categories can have very different collection periods (governments agencies, for instance, are known to pay late).

You must ask yourself what degree of precision you want to achieve in your analysis of the company. If a general idea is enough, you might be satisfied with average ratios, as calculated above after verifying that:

- the business is not too seasonal;
- if it is seasonal, that the available data refer to the same point in time during the year. If this is your case, we advise you to express the ratios in terms of a percentage (receivables/sales), which does not imply a direct link with actual conditions.

If you need a more detailed analysis, you will have to look at the actual business volumes in the period just prior to the statement date. In this case, the daily sales figure will not be the annual sales divided by 365, but the last quarter's sales divided by 90, the last two months divided by 60, etc.

If you must perform an in-depth audit of outstandings in the balance sheet, averages are not enough. You must compare outstandings with the transactions that gave rise to them.

Section 11.3

READING BETWEEN THE LINES OF WORKING CAPITAL

Evaluating working capital is an important part of an analyst's job in continental Europe, because intercompany financing plays a prominent role in the economy. In Anglo-Saxon countries this analysis is less important because commercial practice is stricter.

1/ GROWTH OF THE COMPANY

In principle, the ratio of working capital to annual sales should remain stable.

If the permanent requirement equals 25% of annual sales and sales grow from €100m to €140m, working capital requirement should grow by €10m ($€40m \times 25\%$).

Growth in business volume causes an increase in working capital. This increase appears, either implicitly or explicitly, in the cash flow statement.

Growth in the company's business tends to increase the amount of working capital. This increase represents an additional need that a business plan must take into account.

We might be tempted to think that working capital does not grow as fast as sales because certain items, such as minimum inventory levels, are not necessarily proportional to the level of business volume. Experience shows, however, that growth very often causes a sharp, sometimes poorly controlled, increase in working capital at least proportional to the growth in the company's sales volume.

In fact, a growing company is often confronted with **working capital that grows faster than sales**, for various reasons:

- management sometimes neglects to manage working capital rigorously, concentrating instead on strategy and on increasing sales;
- management often tends to integrate vertically, both upstream and downstream. Consequently structural changes to working capital are introduced as it starts growing much more rapidly than sales.

When a company is growing, the increase in working capital constitutes a real use of funds, just as surely as capital expenditures do. For this reason, increases in working capital must be analysed and projected with equal care.

Efficient companies are characterised by controlled growth in working capital. Indeed, successful expansion often depends on the following two conditions:

- ensuring that the growth in working capital tracks the growth in sales rather than zooms ahead of it;
- creating a corporate culture that strives to contain working capital. If working capital grows unchecked, sooner or later it will lead to serious financial difficulties and compromise the company's independence.

Today, companies faced with slower growth in business manage working capital strictly through just-in-time inventory management, greater use of outsourcing, etc.

Note that **in inflationary periods, working capital increases** even if the quantities the company produces do not. This increase is primarily due to the rise in prices which, at constant payment terms, increases production costs and receivables.

The foregoing analysis sheds light on two models of growth. A company can:

- grow without changing its production cycle and its relative working capital;
- grow on the basis of:
 - a simple growth in volume sold;
 - a change in its manufacturing processes related, for example, to diversification into new products;
 - a change in the composition of the customer base, leading to a change in overall payment terms granted to customers. For example, if a growing part of sales is realised with international companies, receivables will take longer to collect.

In the first case, growth in sales will lead to proportional growth in working capital.

For example, imagine the company's sales rise from €100m to €140m and working capital is 72 days of sales. In absolute terms, working capital rises from €20m to €28m, or by 40%, the same as the percentage rise in sales. The company will have to finance an increase in working capital of €8m as a result of increasing its sales by €40m.

In the second case, this will depend on the production cycle of the new products.

In the third case, growth in sales can lead to a more-than-proportional increase in permanent working capital.

Using the figures from the same example, we suppose receivables used to represent 62 days of sales on average. Now suppose the 40% increase in sales results primarily from an increase in exports, to customers who are granted more generous payment terms. Receivables rise by 18 days to 80 days of sales on average. Because sales have increased, permanent working capital rises to 90 days ($72 + 18$) of sales, or $140 \times 90/365 = \text{€}35\text{m}$, representing an increase of 75% from its initial volume of €20m.

Consequently, the company will have to finance an additional working capital of €15m and will be confronted with a much bigger financing problem than the company in the first example.

2/ RECESSION

By analysing the working capital of a company facing a sudden drop in its sales, we can see that it reacts in stages.

Initially, the company does not adjust its production levels. Instead it tries other ways to shore up sales. The recession also leads to difficulty in controlling accounts receivable, because customers start having financial difficulties and stretch out their payments over time. The company's cash situation deteriorates, and it has trouble honouring its commercial obligations, so it secures more favourable payment terms from its suppliers. At the end of this first phase, working capital – the balance between the various items affected by divergent forces – stabilises at a higher level.

In the second phase, the company begins to adopt measures to adjust its operating cycle to its new level of sales. It cuts back on production, trims raw material inventories, and ratchets customer payment terms down to normal levels. By limiting purchases, accounts payable also decline. These measures, salutary in the short term, have the paradoxical effect of inflating working capital because certain items remain stubbornly high while accounts payable decline.

As a result, the company produces (and sells) below capacity, causing unit costs to rise and the bottom line to deteriorate.

Finally, in the third phase, the company returns to a sound footing:

- sales surpass production;
- the cap on purchases has stabilised raw material inventories. When purchases return to their normal level, the company again benefits from a “normal” level of supplier credit.

Against this background, working capital stabilises at a low level that is once again proportional to sales, but only after a crisis that might last as long as a year.

It is important to recognise that any contraction strategy, regardless of the method chosen, requires a certain period of psychological adjustment. Management must be convinced that the company is moving from a period of expansion to a period of recession. This psychological change may take several weeks, but once it is accomplished, the company can:

- decrease purchases;
- adjust production to actual sales;
- reduce supplier credit which the company had tried to maximise. Of course, this slows down reduction in working capital.

We have seldom seen a company take less than nine months to significantly reduce its working capital and improve the bottom line (unless it liquidates inventories at fire-sale prices).

During a recession, working capital has a paradoxical tendency to grow; then, despite restructuring measures, it still doesn't budge. It is only towards the end of the recession that working capital subsides and the company gains breathing space.

3/ COMPANY STRATEGY AND ITS IMPACT ON WORKING CAPITAL

Companies that expand vertically by acquiring suppliers or distributors lengthen their production cycle. In so doing, they increase their value added. But this very process also increases their working capital because the increased value added is incorporated in the various line items that make up working capital, notably receivables and finished goods inventories. Conversely, accounts payable reflect purchases made further upstream and therefore contain less value added. So they become proportionately lower.

4/ NEGATIVE WORKING CAPITAL

The operating cycles of companies with negative working capital are such that, thanks to a favourable timing mismatch, they collect funds prior to disbursing some payments. There are two basic scenarios:

- supplier credit is much greater than inventory turnover, while at the same time customers pay quickly, in some cases in cash;
- customers pay in advance. This is the case for companies that work on military contracts, collective catering companies, companies that sell subscriptions, etc. Nevertheless, these companies are sometimes required to lock up their excess cash for as long as the customer has not yet “consumed” the corresponding service. In this case, negative working capital offers a way of earning significant investment income rather than presenting a source of funding that can be freely used by the firm to finance its operations.

The companies in the examples below receive the proceeds of their sales before paying for all of their production costs, in particular their suppliers of raw materials or merchandise intended for resale. They are few in number and are concentrated in the following sectors:

- retail (food but also, to a lesser extent, non-food);
- companies that receive advance payments on work-in-process, such as aerospace and telecoms contractors working for governments, and some companies operating in the public works sector;
- collective catering companies;
- mail-order companies or on-line retailers where the customer pays upon ordering;
- certain newspaper and magazine publishers, ISP or pay-TV channels, since a large part of their sales volume derives from subscriptions;

- companies whose suppliers are in a position of such weakness – printers or hauliers that face stiff competition, for example – that they are forced to offer inordinately long payment terms to their customers.

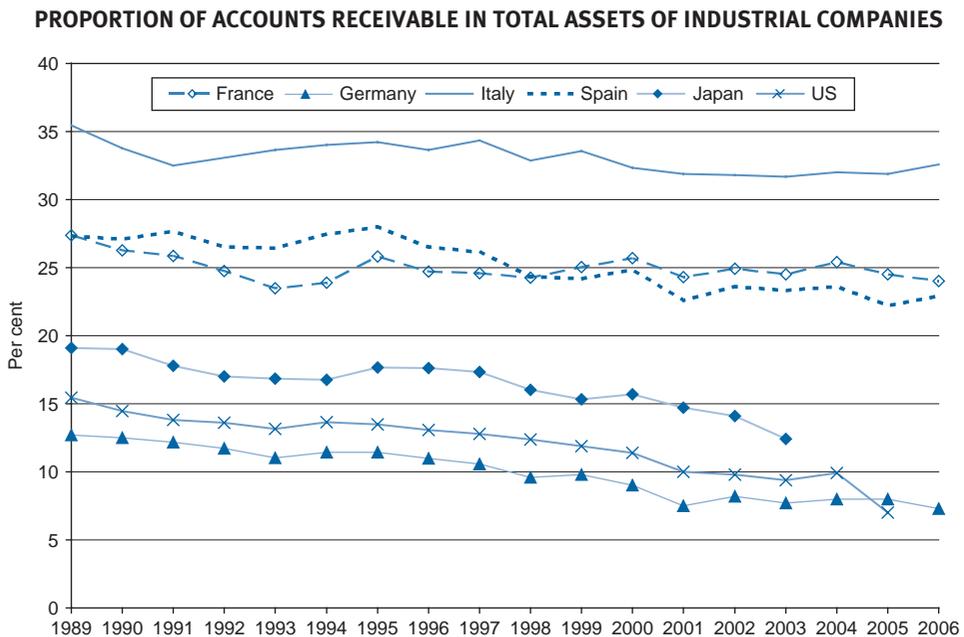
A low or negative working capital is a boon to a company looking to expand without recourse to external capital. Efficient companies, in particular in mass-market retailing, all benefit from low or negative working capital. Put another way, certain companies are adept at using intercompany credit to their best advantage.

The presence of negative working capital can, however, lead to management errors. We once saw an industrial group that was loath to sell a loss-making division because it had a negative working capital. Selling the division would have shored up the group's profitability but would also have created a serious cash management problem, because the negative working capital of the unprofitable division was financing the working capital of the profitable divisions. Short-sightedness blinded the company to everything but the cash management problem it would have had immediately after the disposal.

5/WORKING CAPITAL AS AN EXPRESSION OF BALANCE OF POWER

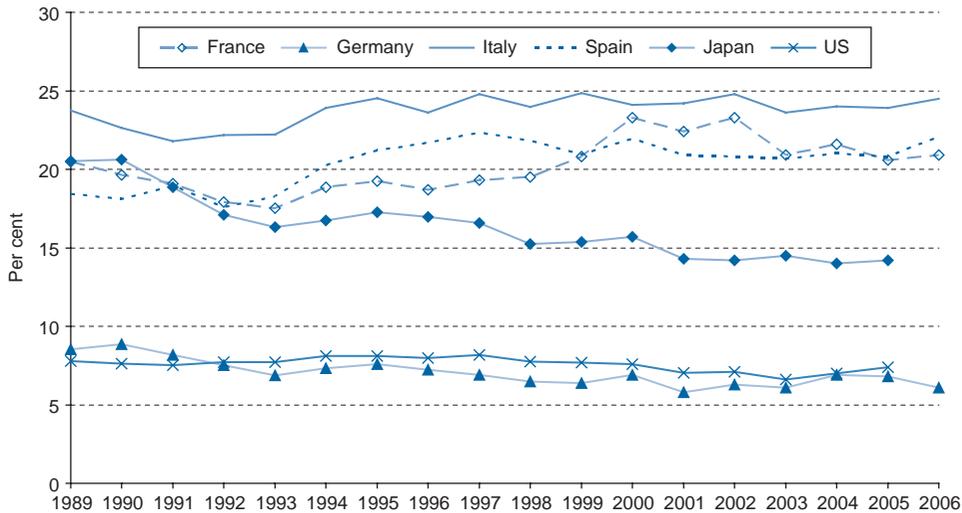
Economists have tried to understand the theoretical justification for intercompany credit, as represented by working capital. To begin with, they have found that there are certain minimum technical turnaround times. For example, a customer must verify that the delivery corresponds to his order and that the invoice is correct. Some time is also necessary to actually effect the payment.

But this explains only a small portion of intercompany credit, which varies greatly from one country to another.



Source: Banque de France Bach database.

PROPORTION OF ACCOUNTS PAYABLE IN TOTAL ASSETS OF INDUSTRIAL COMPANIES



Source: Bach database

Several factors can explain the disparity.

- Cultural differences: in Germanic countries, the law stipulates that the title does not pass to the buyer until the seller is paid. This makes generous payment terms much less attractive for the buyer, because as long as his supplier is not paid, he cannot process the raw material.
- Historical factors: in France, Italy and Spain, bank credit was restricted for a long time. Companies whose businesses were not subject to credit restrictions (building, exports, energy, etc.) used their bank borrowing capacity to support companies subject to the restrictions by granting them generous payment terms. Tweaking payment terms was also a way of circumventing price controls in the Mediterranean countries.
- Technical factors: in the USA, suppliers often offer two-part trade credit, where a substantial discount is offered for relatively early payment, such as a 2% discount for payment made within 10 days. Most buyers take this discount. This discount explains the low level of accounts payable in US groups' balance sheets. As a by-product, failure of a buyer to take this discount could serve as a very strong and early signal of financial distress.

There are numerous theories that provide explanations for the provision of trade credit by suppliers.

Mian and Smith suggested that credit provisions will be more likely in circumstances where there is easier resale of the product being sold, since this will allow the seller to seize and resell the product if the buyer defaults.

Cunat argued that the provision of trade credit ties customers to particular suppliers, thereby increasing the scope for punishment of nonpayment.

Trade credit can be a substitute to the classical financial system, particularly in some developing countries. This will allow some sectors to grow faster.

² As in Long et al., 1993.

Some industries may require trade credit as a guarantee for product quality.² Certainly some products, for example high-tech or newly-developed products, need more quality assurance for their inputs than others, such as commodities.

Furthermore, Dietsch has shown that supplier credit acts as a financial shock absorber for companies in difficulty. For commercial reasons, suppliers feel compelled to support companies whose collateral or financial strength is insufficient (or has become insufficient) to borrow from banks. Suppliers know that they will not have complete control over payment terms. They have unwittingly become bankers and, like bankers, they attempt to limit payment terms on the basis of the back-up represented by the customer's assets and capital.

This said, it is unhealthy for companies to offer overly generous payment terms to their customers. By so doing, they run a credit risk. Even though the corporate credit manager function is more and more common, even in small companies, credit managers are not in the best position to appreciate and manage this risk. Moreover, intercompany credit is one of the causes of the domino effect in corporate bankruptcies.

In conclusion, we reiterate the fact that intercompany credit is one of the most visible manifestations of the balance of power between customers and suppliers. The size of the intercompany credit serves as an indication of the strength of the company's strategic position *vis-à-vis* its customers and suppliers. How else can we explain why the industrial gases group Air Liquide enjoys working capital that is at worst zero and the rest of the time negative?

Section 11.4

ANALYSING CAPITAL EXPENDITURES

The following three questions should guide your analysis of the company's investments:

- What is the state of the company's plant and equipment?
- What is the company's capital expenditure policy?
- What are the cash flows generated by these investments?

1/ ANALYSING THE COMPANY'S CURRENT PRODUCTION CAPACITY

The current state of the company's fixed assets is measured by the ratio

$$\frac{\text{Net xed assets}}{\text{Gross xed assets}} \quad 3$$

³ Net xed assets are gross xed assets minus cumulative depreciation.

A very low ratio (less than 25%) indicates that the company's plant and equipment are probably worn out. In the near term, the company will be able to generate robust margins because depreciation charges will be minimal. But don't be fooled, this situation cannot last forever. In all likelihood, the company will soon have trouble because its manufacturing costs will be higher than those of its competitors who have modernised their production facilities or innovated. Such a company will soon lose market share and its profitability will decline.

If the ratio is close to 100%, the company's fixed assets are recent, and it will probably be able to reduce its capital expenditure in the next few years.

2/ ANALYSING THE COMPANY'S INVESTMENT POLICY

Through the production process, fixed assets are used up. The annual depreciation charge is supposed to reflect this wearing out. By comparing capital expenditure with depreciation charges, you can determine whether the company is:

- expanding its industrial base by increasing production capacity. In this case, capital expenditure is higher than depreciation as the company invests more than simply to compensate for the annual wearing out of fixed assets;
- maintaining its industrial base, replacing production capacity as necessary. In this case, capital expenditure approximately equals depreciation as the company invests just to compensate for the annual wearing out of fixed assets;
- underinvesting or divesting (capital expenditure below depreciation). This situation can only be temporary or the company's future will be in danger, unless the objective is to liquidate the company.

Comparing capital expenditure with net fixed assets at the beginning of the period gives you an idea of the size of the investment programme with respect to the company's existing production facilities. A company that invests an amount equal to 50% of its existing net fixed assets is building new facilities worth half what it has at the beginning of the year. This strategy carries certain risks:

- risk that economic conditions will take a turn for the worse;
- risk that production costs will be difficult to control (productivity deteriorates);
- technology risks, etc.

3/ ANALYSING THE CASH FLOWS GENERATED BY INVESTMENTS

The theoretical relationship between capital expenditures on the one hand and the cash flow from operating activities on the other is not simple. New fixed assets are combined with those already on the balance sheet, and together they generate the cash flow of the period. Consequently, there is no direct link between operating cash flow and the capital expenditure of the period.

Comparing cash flow from operating activities with capital expenditure makes sense only in the context of overall profitability and the dynamic equilibrium between sources and uses of funds.

The only reason to invest in fixed assets is to generate profits, i.e. positive cash flows. Any other objective turns finance on its head. You must therefore be very careful when comparing the trends in capital expenditure, cash flow, and cash flow from operating activities. This analysis can be done by examining the cash flow statement.

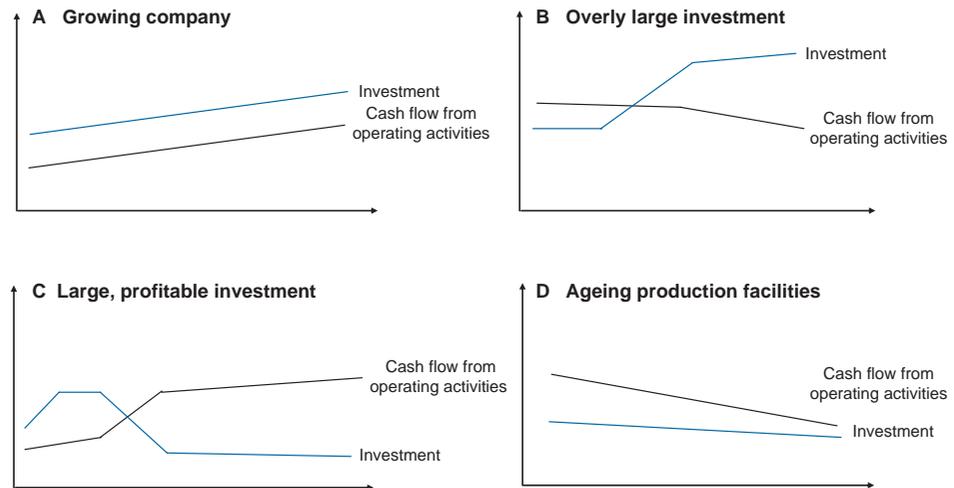
Any investment strategy must sooner or later result in an increase in cash flow from operating activities. If it doesn't, then the investments are not profitable enough. The company is heading for trouble or, more likely, is already in trouble.

Be on the lookout for companies that, for reasons of hubris, grossly overinvest, despite their cash flow from operating activities not growing at the same rate as their investments. Management has lost sight of the all-important criterion that is profitability.

All the above does not mean that capital expenditure should be financed by internal sources only. Our point is simply that a good investment policy grows cash flow at the

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EXAMPLES OF INVESTMENT POLICY ANALYSIS



same rate as capital expenditure. This leads to a virtuous circle of growth, a necessary condition for the company's financial equilibrium, as shown in graph A above.

Graphs B, C and D illustrate other corporate situations. In D, investment is far below the company's cash flow from operations. You must compare investment with depreciation charges so as to answer the following questions:

- Is the company living off the assets it has already acquired (profit generated by existing fixed assets)?
- Is the company's production equipment ageing?
- Are the company's current capital expenditures appropriate, given the rate of technological innovation in the sector?

Naturally, the risk in this situation is that the company is "resting on its laurels", and that its technology is falling behind that of its competitors. This will eat into the company's profitability and, as a result, into its cash flow from operating activities at the very moment it will most need cash in order to make the investments necessary to close the gap *vis-à-vis* its rivals.

The most important piece of information to be gleaned from a cash flow statement is the relationship between capital expenditure and cash flow from operating activities and their respective growth rates.

Generally speaking, you must understand that there are certain logical inferences that can be made by looking at the company's investment policy. If its capital expenditure is very high, the company is embarking on a project to create significant new value rather than simply growing. Accordingly, future cash flow from operating activities will depend on the profitability of these new investments and is thus highly uncertain.

Lastly, ask yourself the following questions about the company's divestments. Do they represent recurrent transactions, such as the gradual replacement of a rental car company's fleet of vehicles, or are they one-off disposals? In the latter case, is the company's

insufficient cash flow forcing the company to divest? Or is the company selling old, outdated assets in order to turn itself into a dynamic, strategically-rejuvenated company?

Section 11.5

CASE STUDY: INDESIT⁴

⁴ Financial statements for Indesit are shown on pages 55, 66 and 174.

1/WORKING CAPITAL ANALYSIS

The average VAT rate of Indesit is not made public, and as it is difficult to estimate it since the group's activities span several continents, working capital ratios have been computed without taking VAT into account:

In days of net sales	2004	2005	2006	2007
$\frac{\text{Operating working capital}}{\text{Net sales}} \times 365$	-2	1	-3	-4
$\frac{\text{Inventories and work in progress}}{\text{Net sales}} \times 365$	39	41	40	35
$\frac{\text{Receivables}}{\text{Net sales}} \times 365$	74	66	64	55
$\frac{\text{Payables}}{\text{Net sales}} \times 365$	102	98	100	91

First of all, we should stress that, for such an industry, a working capital close to 0 is a very good achievement (26 days for Electrolux, 77 for SEB). In particular, Indesit seems to have strong bargaining power *vis-à-vis* its suppliers.

In 2005, in a more difficult environment for Indesit, the working capital increased slightly and reached a positive level. This illustrates that in unfavourable times, working capital initially tends to increase. In 2006 and 2007, Indesit has shown a very positive management of its working capital which decreases and thus provides significant resources (€60m over the two years).

2/CAPITAL EXPENDITURE ANALYSIS

From a relatively high level (€186m) in 2005, Indesit's capital expenditures apparently decrease significantly, reaching net capital expenditure of €93m in 2007; appreciably below the depreciation level (€140m). The cycle reflects the high investments made in 2004 and 2005 to relocate part of the production to Poland and Russia. On average (€132m per year), the capital expenditure is close to the depreciation level so, over the long term, Indesit keeps a steady level of fixed assets although the volumes produced increase.

It goes without saying that this is a nice move from a cash flow point of view but it cannot last for long. The investment cycle is likely to pick up again if Indesit wants to maintain its productivity and competitiveness.

SUMMARY

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A company's working capital is the balance of the accounts directly related to its operating cycle (essentially customer receivables, accounts payable and inventories). Calculated at the year-end closing date, it is not necessarily representative of the company's permanent requirement. Therefore, you must look at how it has evolved over time.

All of the components of working capital at a given point in time disappear shortly thereafter. Inventories are consumed, suppliers are paid, and receivables are collected. But even if these components are consumed, paid and collected, they are replaced by others. Working capital is therefore both liquid and permanent.

Working capital turnover ratios measure the average proportion of funds tied up in the operating cycle. The principal ratios are:

- days' sales outstanding: $\text{accounts receivable/sales (incl. VAT)} \times 365$;
- days' payables outstanding: $\text{accounts payable/purchases (incl. VAT)} \times 365$;
- days' inventory outstanding: $\text{inventories and work in progress/sales (excl. VAT)} \times 365$;
- working capital turnover: $\text{working capital/sales (excl. VAT)} \times 365$.

When a company grows, its working capital has a tendency to grow because inventories and accounts receivable (via payment terms) increase faster than sales. Paradoxically, working capital continues to grow during periods of recession because restrictive measures do not immediately deliver their desired effect. It is only at the end of the recession that working capital subsides and cash flow problems ease.

A low or negative working capital is a boon to a company looking to expand.

The level of working capital is an indication of the strength of the company's strategic position, because it reflects the balance of power between the company and its customers and suppliers.

We evaluate a company's investment policy by looking at the following three criteria:

- the extent to which production facilities are worn out, as measured by the net fixed assets/gross fixed assets ratio;
- the purpose of capital expenditure – build up fixed assets, maintain them or let them run down – is determined by whether capital expenditure is greater than, equal to or less than depreciation;
- analysis of the cash flow generated by investments.

QUESTIONS

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quiz

- 1/Can it be said that the working capital calculated on the balance sheet is representative of the company's permanent needs?
- 2/If income is recorded on a company's books on the day it is received (and not on the invoice date) and costs on the date of payment, would this generate working capital? If so, how would this working capital differ from the working capital as calculated today?

- 3/Is the permanent part of working capital liquid?
- 4/Explain why, during a recession, working capital will decline at a slower pace than sales.
- 5/How does working capital behave in an inflationary period?
- 6/The financial director of a company makes the following comments: “The company performed remarkably well this year. You be the judge – our depreciation policy enabled us to generate 50% more EBITDA than last year. Our working capital has increased sharply, due to a more generous customer credit policy (three months instead of two) and to a significant increase in our inventories.” What is your response? What advice would you give?
- 7/The perfume division of Unilever has decided to launch a new perfume. During the first weeks following the launch, sales to retailers are high. Can the new perfume be considered a success?
- 8/An aeronautics group has substantial inventories of unfinished goods. What consequences will this have? What measures would you suggest to improve this situation?
- 9/Is calculating the ratio of nonoperating working capital/sales a worthwhile exercise?

- 1/ The Belgian Van de Putte group has the following operating structure: sales = 100, raw materials used in the business = 30, direct production costs = 40, administrative costs = 20. Operating cycle: raw materials inventories = 15 days, length of production cycle = 1 month, inventories of finished products = 15 days. Payment terms: suppliers 2 months, customers 1 month, other costs paid in cash.

Assuming zero VAT, calculate working capital in days of sales. The production cycle lasts 1 month, which means that in-progress inventories represent 1 month of raw materials and 15 days of production costs.

- 2/ The operating details for Spalton plc are as follows:
 - permanent working capital equal to 25% of sales;
 - sales rise from 100 millions in year 1 to 120 millions in year 2;
 - EBITDA rises to 15% of sales in year 2;

Calculate operating cash flow (before financial expense and tax) in year 2.

- 3/ Calculation of working capital ratios.

Working capital for Moretti Spa over the last 5 years (at 31 December) was as follows:

(In €m)	2001	2002	2003	2004	2005
Inventories of finished goods	6.1	7.4	9.1	13	15.4
Trade and notes receivable	6.4	8.9	10.5	11.1	11.6
Trade and notes payable	2.1	3.5	3.5	3.8	3.4

EXERCISES

The income statement includes the following data:

(In €m)	2001	2002	2003	2004	2005
Sales (excl. VAT)	32.8	44.7	49.4	48.9	50
Sales (incl. VAT)	38.9	52.6	58.1	57.4	57.2
Purchases (incl. VAT)	12.5	19.2	19.6	20.9	20.4

Calculate the different working capital ratios.

4/ Below are the operating terms and conditions of a trading company:

- goods held for resale rotate four times a year;
- cost of goods sold is equal to 60% of sales (excl. tax);
- customers pay at 45 days month-end;
- suppliers are paid at 30 days;
- salaries, which amount to 10% of pre-tax sales, are paid at the end of every month;
- payroll taxes, which amount to 50% of salaries, are paid on the 15th of the following month;
- operating charges other than purchases of goods for resale and staff costs are paid in cash;
- VAT is payable at 19.6% on sales and purchases. VAT payable for month n , equals to the difference between VAT collected on sales in month n and VAT recoverable on sales in month n , and is paid at the latest on the 25th of the month $(n+1)$;

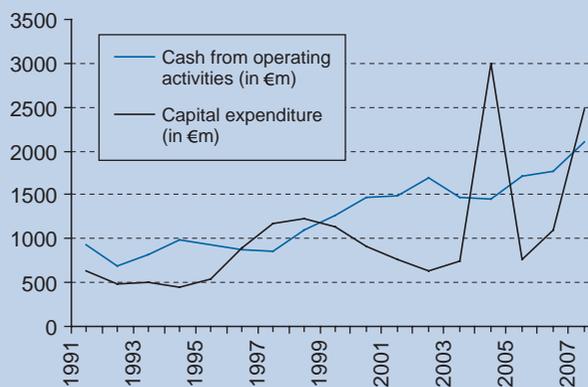
Using the above data, calculate the working capital of the company in days of sales (excl. VAT).

5/ Below are details of a distribution company's operating terms and conditions:

Days of goods held for resale: 24 days; supplier credit: 90 days; customer credit: 10 days; purchases: 75% of sales; no VAT.

Calculate normal working capital as a percentage of sales.

6/ Give your views of Air Liquide's investment policy since 1990, as represented in the following graph (data in €m):



Source: Annual report.

ANSWERS

Questions

- 1/No because of the seasonality of most business.
- 2/Yes, it would, as working capital depends primarily on the time difference between payment to suppliers and payment from customers which would not be substantially modified by a change in accounting rules; with an adjustment of working capital and shareholders' equity.
- 3/Yes, because each item of working capital is sold, paid by the company or its suppliers.
- 4/As a result of inertia.
- 5/It tends to increase even if the number of products sold stays constant.
- 6/This is not borne out by an analysis of the information. A depreciation charge does not affect EBITDA (as EBITDA is computed before depreciation charge). Working capital has increased considerably. Note the change in net debt.
- 7/No, the retailers are getting in stock, but not necessarily selling any!
- 8/Very high working capital. Downpayments by customers, prefinancing of series by state authorities, pass on to subcontractors, etc.
- 9/Not really, given that nonoperating working capital is such a catch-all category.

Exercises

1/Working capital component	% of sales	Time taken to shift goods or payment period	Value in days of sales
Raw materials inventories	30%	15 days	4.5 days
+ Work in progress	30% × 30 days + 40% × 15 days		15.0 days
+ Inventories of finished products	90%	15 days	13.5 days
+ Trade receivables	100%	30 days	30.0 days
– Trade payables	30%	60 days	18.0 days
= Total			45.0 days

- 2/Operating cash flow (before taxes and financial expense) = EBITDA – Δ WC = 15% × 120 – 25% × (120–100) = €13m.

3/	1	2	3	4	5
Working capital (WC)	10,400	12,800	16,100	20,300	23,600
WC in days of sales (excl. VAT)	116	105	119	152	172
Outstanding receivables in days of sales (including VAT)	60	62	66	71	74
Days of inventories	68	60	67	97	112
Days of payables in days of purchase (including tax)	61	67	65	66	61

The economy is in recession and the company has not yet adjusted production and is keeping sales up by offering customers better payment terms.

4/ Working capital component	% of sales	Time taken to shift goods or payment period	Value in days of sales
Inventories of goods for resale	60%	90 days	54.0 days
+ Trade receivables	119.60%	$30/2 + 45 = 60$ days	71.8 days
– Accounts payable	–71.76%	30 days	21.5 days
– Personnel cost	10%	15 days	1.5 days
– Social security contributions payable	5%	$30/2 + 15 = 30$ days	1.5 days
– VAT payable	$(19.6 - 19.6 \times 60\% = 7.84\%)$	$30/2 + 25 = 40$ days	3.1 days
= Total			98.1 days

5/ Working capital component	% of sales	Time taken to shift goods or payment period	Value in days of sales
Inventories of goods for resale	75%	24.3 days	18.2 days
+ Trade receivables	100%	10 days	10.0 days
– Accounts payable	75%	90 days	67.5 days
= Total			–39.2 days

6/ Until 1995, Air Liquide reaps the benefits of capital expenditure prior to 1990 and generates cash flow which is stagnant but much higher than its capital expenditure. Between

1996 and 2000, seeking to achieve the growth it had previously recorded, Air Liquide lays out large amounts on capital expenditure, resulting in an increase in cash flow. After making these capital expenditures, Air Liquide can reduce the amount of its capital expenditure for a few years (1999–2003) and reap large amounts of cash from operating activities. When cash from operating activities starts to stagnate (2002–2004), Air Liquide increases again its capital expenditure with an exceptional amount in 2004 and cash-flows pick up once more. In 2007, Air Liquide significantly invests again, while cash flows from operation increase significantly.

To get deeper into the analysis of working capital:

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