

Chapter 2

Determination of the Internal Financing Power of Corporate Growth via the Self-Financeable Growth Rate

2.1 Limits of Growth and Growth Financing of Companies

A company can reach its growth limits in different ways. External business factors, such as the saturation of sales markets or the scarcity of a skilled, experienced workforce, but also internal business aspects, such as capacity limits, below-average productivity, lack of capital or organizational inefficiencies can present growth obstacles for a company. These factors will mean that a company's own growth potential is not fully utilized. Nonetheless, a company's growth-inhibiting starting position can be fundamentally changed by means of adequate measures for strengthening its financing power.

With growth investments, a company assumes that profitability requirements are realized and investment proceeds exceed prorated capital costs. In this case, it is generally aimed at paying for growth investments with internal financing since this generates corporate value. A company's internal financing is limited by its ability to generate sufficiently high cash flows from its operative business. Any increased outside financing of growth is connected with risks for the lenders and is thereby only reasonable to a certain extent for the company. Aside from general factors of credit standing, a company's justifiable outside financing rate will depend, *inter alia*, on the risk and type of investment project to be financed. In particular, excessively outside financed growth stages are considered risky since annuities must be paid irrespective of the development of business results. In this context, the literature talks about the expansion crisis in which excessively outside-financed growth mostly results in a serious financial crisis within a company.¹

The limits of outside financing through equity capital are frequently determined by the owners' financial powers. The question is, on the one hand, whether they have sufficient financial funds and, on the other hand, whether they are willing to invest such funds in the growths of their businesses. Moreover, financing by means of capital increases can result in undesirable shifts in the ownership structure and is connected with costs and organizational expenditures.

¹Cf. Volkart (2006, p. 704 et seq.).

Based on these theoretical considerations, we can establish that, in many cases, growth should be financed from operatively generated funds. In view of the frequently found situation of the “working capital trap”, the question presents itself as the internal financing power of corporate growth – i.e. which growth rate can be realized with operatively generated funds? Which factors act upon this growth rate as a driving force – leaving out of account any outside financing and divestments? Can this limit be displaced by specific financial management? The following section clarifies these questions by means of the SFGR concept.

2.2 Financial Growth Potential According to the Self-Financeable Growth Rate Approach

The following section presents the potentials, fundamentals and structures of the SFGR approach. The SFGR describes a company’s growth rate realizable from operatively generated means without divestment and outside financing.² This company-specific growth rate essentially depends on three factors:

- Time of an operating cash cycle (OCC).
- Time of tied-up funds for financing the working capital as well as the operating costs per OCC.
- Freely available generated funds per OCC.

The OCC comprises the period of time in which financial funds at a company are tied up in stock inventories as well as other working capital before payment is received for the services rendered (Fig. 2.1).

The OCC time is calculated from the sum total of days inventory held (age of stocks, DIH) and of days sales outstanding (age of accounts receivable, DSO), which are obtained from different ratios of the balance sheet and the P&L account:

$$\text{Operating Cash Cycle Time [d]} = \text{DIH} + \text{DSO} \quad (1)$$

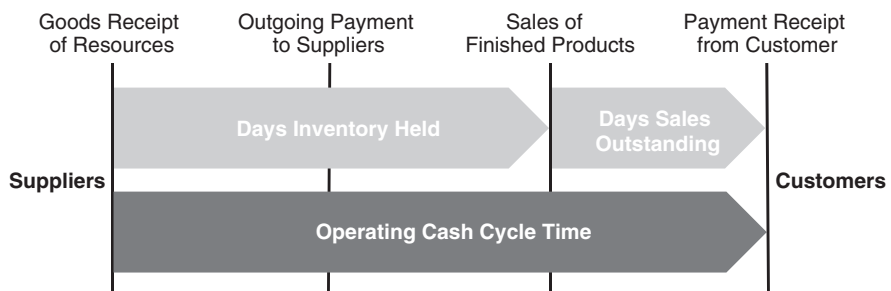


Fig. 2.1 Operating cash cycle on the basis of goods and payment flows

²Cf. Churchill and Mullins (2001, p. 135 et seq.).

The DIH ratio describes the period of time from the receipt of resources from the supplier until the sale of finished products to the customer and is calculated as follows from corporate ratios:

$$DIH [d] = \frac{Inventories}{Cost\ of\ Goods\ Sold} \cdot 365\ Days \quad (2)$$

Inventories essentially comprise raw, auxiliary and operating materials, as well as unfinished and finished products that are not yet sold. Cost of goods sold are expenses incurred from the consumption of goods and the utilization of services for manufacturing, expanding or improving an asset, and are shown in the P&L account according to the cost of sales method.³ According to the German *Handelsgesetzbuch* (*HGB* – Commercial Code), they comprise direct costs in the materials and manufacturing area and can optionally also comprise all overhead costs in the areas of materials, manufacturing and administration. A reduction of DIH results in a reduction of tied-up capital costs and inventory management costs, but can also lead to higher ordering and out-of-stock costs.

DSO comprises the period of time from the sales of finished products until the receipt of payment from the customer. With the help of the balance sheet and P&L account, this ratio results from accounts receivable as well as net sales:

$$DSO [d] = \frac{Accounts\ Receivable}{Net\ Sales} \cdot 365\ Days \quad (3)$$

The DSO ratio essentially depends on stipulated payment terms and the efficiency of accounts receivable management; the faster customers pay their outstanding accounts the smaller the ratio. The payment terms enforceable on the market essentially depend on the sector of the industry, the company's position of power within that sector and its geographic activity profile.

It is problematic that to calculate the OCC time you need to know a company's cost of goods sold. These are shown in the P&L account according to the cost of sales method. However, the cost of sales method is only absolutely mandatory according to US Generally Accepted Accounting Principles. By contrast, accounting principles according to the *HGB* and International Financial Reporting Standards allow the cost of sales method and nature of expense method. Accordingly, in practice, net sales instead of cost of goods sold are frequently used as the basis for calculating the DIH to improve external comparability.⁴ Another problem results from the period under review. Since the calculation of working capital ratios is based on balance sheet and P&L account figures, their calculation merely presents a selective consideration. A higher reporting frequency can increase the informative value of the ratios. However, data from internal accounting must be consulted for this.

³Cf. Handelsgesetzbuch (HGB) (2006, § 255 para. 2).

⁴Cf. Reason (2004, p. 78).

The necessary financial funds per OCC as another determinant of the SFGR are calculated as follows, because of the different tied-up funds for cost of goods sold and other expenses:

$$\text{Tied-up funds manufact. costs} = \frac{\text{Tied-up funds [d]}}{\text{OCC manufacturing costs [d]}} \cdot \frac{\text{Cost of Goods Sold}}{\text{Net Sales}} \quad (4)$$

$$\text{Tied-up funds other expenses} = \frac{\text{Tied-up funds other expenses [d]}}{\text{OCC [d]}} \cdot \frac{\text{Other expenses}}{\text{Net Sales}} \quad (5)$$

The sum of the tied-up funds of cost of goods sold and the tied-up funds of other expenditures per Euro of sales results in the total tied-up funds per OCC. The freely available funds per OCC indicate a company's absolute financing power in monetary units per Euro of turnover. They are calculated from net sales minus cost of goods sold as well as other expenses. This residual value is equivalent to the profit margin and is available to the company for investments. Figure 2.2 is a schematic presentation of the procedure for calculating the SFGR. The annualized SFGR provides information on the extent a company can grow per year without having to rely on outside financing. If the enterprise grows at a lower rate than the SFGR, more cash is generated than that necessary for growth. But if it grows at a higher rate, it must depend on outside financing to ensure liquidity.

To illustrate the mode of calculation, we will look at a company's data in Fig. 2.3 with balance sheet ratios and duration of tied-up funds of cost of goods sold (time from outgoing payment to the supplier until receipt of payment from the customer – also called cash-to-cash cycle time – see Chap. 3).

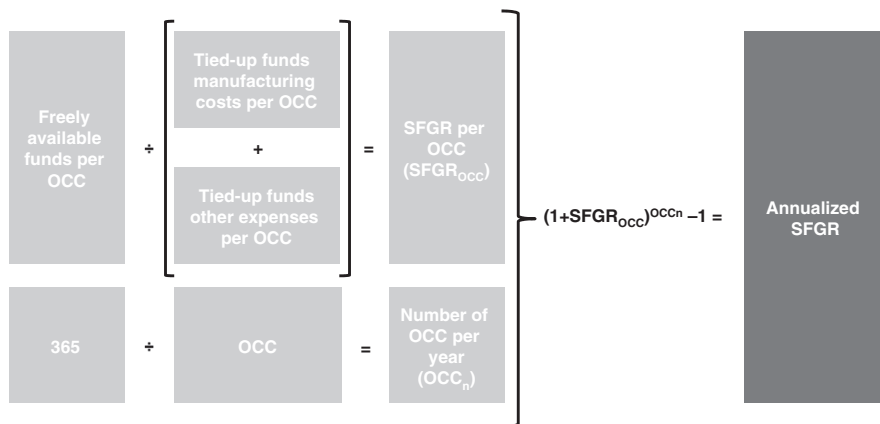


Fig. 2.2 Calculation diagram of the annualized SFGR

Balance Sheet Ratios	
Inventories	110,000,000 €
Accounts Receivable	130,000,000 €
Net Sales	800,000,000 €
Cost of Goods Sold	560,000,000 €
Net Operating Profit After Taxes	28,000,000 €
Tied - up period, cash [days]	
Tied - up funds, Cost of Goods Sold	108.2

Fig. 2.3 Basic data for the calculation example

These data can be used to calculate DIH and DSO:

$$DIH = \frac{110,000,000}{560,000,000} \cdot 365 \text{ days} = 71.7 \text{ days}$$

$$DSO = \frac{130,000,000}{800,000,000} \cdot 365 \text{ days} = 59.3 \text{ days}$$

The sum of DIH and DSO results in a period of 131 days for the OCC. It is assumed that the other expenses (marketing expenses, distribution costs, etc.) extend uniformly over the OCC. They can show tied-up funds of 131 days if the liability is paid off on the first day of the OCC or zero days if payment receipt from the customer and settlement of the liability coincide. Accordingly, to simplify matters, tied-up funds of other expenses are assumed to correspond to half the OCC (i.e. 65.5 days). For further calculation, other expenses are determined from the difference of net sales, on the one hand, and cost of goods sold and net operating profit after taxes, on the other:

$$\begin{aligned} \text{Other expenses} &= 800,000,000 \text{ €} - 560,000,000 \text{ €} - 28,000,000 \text{ €} \\ &= 212,000,000 \text{ €} \end{aligned}$$

By means of formulas 4 and 5, the tied-up funds of cost of goods sold and of other expenses per Euro of sales can be determined as:

$$\text{Tied-up funds manufacturing costs} = \frac{108.2 \text{ days}}{131 \text{ days}} \cdot \frac{560,000,000}{800,000,000} = 0.58$$

$$\text{Tied-up funds other expenses} = \frac{65.5 \text{ days}}{131 \text{ days}} \cdot \frac{212,000,000}{800,000,000} = 0.13$$

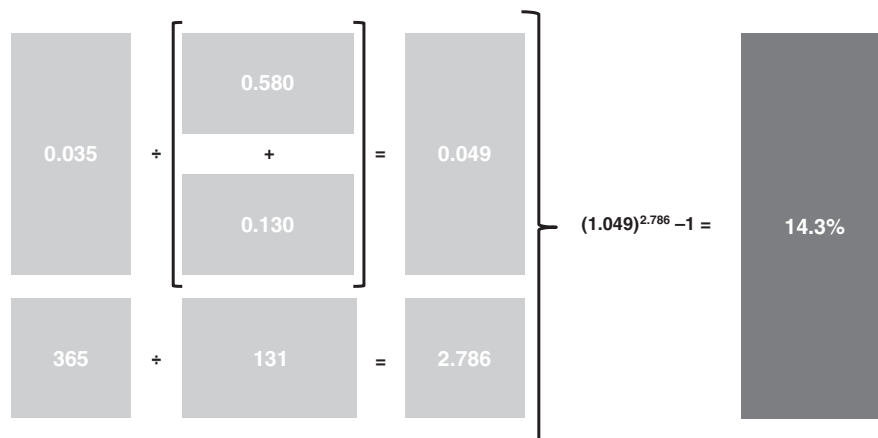


Fig. 2.4 Example of the calculation of annualized SFGR

The profit margin amounts to 3.5%. Based on Fig. 2.4, an SFGR of 0.049 results. With 2.79 OCCs annually, the company can consequently realize a growth rate of 14.3% by its own efforts. Figure 2.4 shows a summary of the calculation steps of the example. This is retaken up in Chap. 6 to show the effects on the SFGR owing to measures introduced by the purchasing department for optimizing working capital.

2.3 Possibilities for the Optimization of the Self-Financeable Growth Rate

The SFGR can be increased by influencing its determinants. Potential measures can be classified into the following categories:

- Shortening the OCC, e.g. by lowering the period of inventory lockup, lowering the accounts receivable payment terms or increasing the accounts payable payment terms.
- Reducing cost of goods sold and other expenses, e.g. discounts.
- Increasing net sales, e.g. through lower sales prices because of reduced purchase prices.

From the viewpoint of supply chain management, the period of inventory lockup can be reduced, for example, by the measures described in Chap. 3 in the forecast-to-fulfill process. A reduction in cost of goods sold can be realized through the measures indicated in the purchase-to-pay process. The following chapter shows measures for strengthening the internal financing power using cash-to-cash cycle optimization. Chapter 6 illustrates a case study to determine the capability of corporate growth regarding internal financing by means of the SFGR.

Ways Out of the Working Capital Trap
Empowering Self-Financing Growth Through Modern
Supply Management

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