

## Chapter 2

# Functions and Types of Transfer Prices

**Abstract** Transfer prices as the internal price of products created within the company have two main functions: profit allocation (in order to assess divisional profits and for performance measurement) and coordination (to come to decisions that are in the best interest of the company as a whole). Various types of transfer prices exist and are examined in view of these functions in the following chapters of this book: market-based, cost-based and negotiated transfer prices.

**Keywords** Management control • Decentralised organisation • Cost allocation • Profit centre • Synergies • Coordination • Asymmetrically distributed information • Conflicting objectives

### 2.1 Introduction

**Transfer prices** are values for inter-company products (intermediate products and services) that are purchased from (independent) company divisions, i.e. the **transfer price** is the internal price of products created within the company. One of the main functions of transfer prices is the coordination of the management of both the selling and the buying divisions. **Cost allocations** are a special form of transfer prices. They are transfer prices based on the cost of the producing company division and the sum of the allocated costs equal the costs incurred. Thus, if a higher amount is allocated to one division, another division will face lower amounts allocated.

The major presupposition for the need for transfer prices and cost allocations is a **decentralised organisation** with divisional managers **responsible** for performance measures of the division, typically the divisional profit or the divisional costs. Along with **budgeting systems** and **profit measures**, transfer prices are the most important instruments for **management control of divisional managers**.

Typically, divisions are organised as profit or investment centres within a company or legally independent subsidiaries. However, they can also be, for example, cost centres. In a profit centre, the divisional manager can decide about all

operational business decisions and, therefore, is fully responsible for the profit of his division and is judged by it. Furthermore, it is supposed that divisional managers make their decisions to maximise their divisional profit. In the case of a cost centre, the revenues are assumed as being constant.

Production division are frequently organised as cost centres rather than profit centres. A **profit centre organisation**, however, can be meaningful when certain output characteristics are not directly measurable; an example is product quality (which often becomes obvious after sales). The profit centre organisation can induce important incentives (for example, by using the contribution margin of the sales division as the transfer price).

The idea of transfer price determinations is derived from the following considerations: transfer prices are based on the fiction of a “**market**” within the company. The divisions are supposed to act like independent companies, and this has the advantage that the decision delegation to subordinated employees and managers should lead to entrepreneurial conduct. The ability to coordinate is expected by the internal (fictitious) market; however, the external market is expelled by the internal organisation of the company. Therefore, the integration of all divisions within one single company must lead to advantages compared to independent companies, because the integration also causes costs. Apart from missing the adjusting effect of the external market, costs of the coordination (including those caused by the use of transfer prices) appear. Without coordination, the advantages of integration would hardly work, and then independent companies would be better. Empirical studies confirm this. It is to be noted, of course, that integration for tax reasons can certainly count (an example is the enabling of an immediate loss of compensation if such was not possible with legal independence). **Advantages of integration** lie, for example, in improved capacity utilisation, the decrease of quality tests, in lower marketing costs by utilisation of the company reputation or by improved access to identical market segments, in better coordination of product developments as well as the use and concealment of knowledge and expertise. Such advantages generally come from a lowering of the transaction costs. These are less technical circumstances than the better use of information or the improvement of the bargaining position. These effects appear when and because markets are not perfect. Now, decentralisation and transfer prices again bring the market into the company. The problem is finding a transfer price that combines as many advantages as possible in relation to its disadvantages. It is obvious that transfer prices must always be seen in **connection** with the **company’s organisation**.

## 2.2 Functions of Transfer Prices

The most essential functions of transfer prices (for internal use) are:

1. **Profit allocation** in order to assess divisional profits and for performance measurement,
2. **Coordination, influence and guidance** of the divisions,

3. **Calculation and cost accounting** for decisions and for price justification,
4. **External regulatory purposes**, especially for balance sheet and income statements and
5. **Simplification** (transfer price is applied as normalised budget measure).

### *Profit Allocation*

In decentralised companies, transfer prices are necessary for the determination of the divisions' profits, when there are linked performances between the divisions. On the one hand, the transfer price is the (internal) revenue of the supplying division; on the other hand, it indicates the (internal) purchase cost of the buying division. **Divisional profit** is the basis for decisions of both divisional management and the company's upper management, which uses it for strategic activities or budget allocations. It also serves for the assessment of divisional management's performance. The profit contribution of every division thereby becomes visible, the responsibilities are clearly presented, and cost transparency and cost awareness are promoted.

The determination of divisional success requires an accurate demarcation of the success components, which can be assigned to the different divisions. When performance is to be measured divisional profits have to be allocated, thus profit allocation is an important function of transfer prices.

Yet, the demarcation is difficult for example, when two or more divisions are interwoven with each other. The **interweaving** can appear in the following cases:

- Products of one division are bought in by another division (**sequential interweaving**). *Example*: a division produces an intermediate product, which is processed further by another division, made into a final product and sold at the market.
- Divisions compete for limited resources (**resource interdependencies**) or on a common (limited) sales market (**market interdependencies**); it is a joint resources group. *Examples*: two divisions produce substitute products, or two divisions need a quality test for certain components during their production processes, which is executed by a special department that is at its capacity limit.

The success that appears as a result of common products is also named **synergetic effect**. It cannot be split or divided on the basis of the individual divisions' contributions. From a theoretical view, it is impossible to execute such a correct split-up, as the success results by common products only. Should one division be eliminated, the synergetic effect would be appropriately shortened or completely ceased. It might be possible to determine limits and ranges of such losses as a result of a division's erasure, or it might be possible to apply an average principle or to split up the effects equally. However, all these possibilities are arbitrary.

### **Quote**

Trying to defend an [...] allocation is like clapping one's hands, then trying to defend how much of the sound is attributable to each hand. (Ijiri 1967, p. 13).

### SHAPLEY value

The SHAPLEY value tries to create a “fair” split-up of synergistic effects based on a concept of the cooperative game theory. For this, all possible coalitions of the contributing divisions are considered, and it is asked which advantage appeared, if now the considered division is included. Then the SHAPLEY value arises as a weighted average value of the marginal advantages with every given coalition. Although this can be seen as a “fair” result, the SHAPLEY value also remains arbitrary, just like any other split-up.

*Example* Division B1 of a company constructed a brand name by intensive marketing activities at a cost of 1,000. The brand name has received a very positive image among consumers. B1 achieves a contribution margin of 10,000. Now, another division, B2, would like to use this brand name for one of its products. B2’s contribution margin rises with the brand name’s use by 1,000–5,000. How high are the divisional profits of B1 and B2? The use of a brand name constructed within the company is a synergistic effect. If division B2 had to construct its own brand name, this would be relatively expensive and probably less effective than the use of the already established name.

### Coordination Function

Divisional managers should work hard and make their best efforts in their division. Incentives are given to maximise their divisional profit. This can guide them to make decisions that are favourable and profitable from the perspective of their own division, but unfavourable from the view of the company as a whole. The effects of a division’s decisions on other divisions are **externalities** that are not considered by their divisional manager.

### Examples

1. The marketing department promised a customer an extremely short delivery time, and to achieve this, the production department must deviate from their optimised production programme or must delay maintenance works.
2. The optimal market treatment from the perspective of Division 1 is to start a price war with a competitor, but it contradicts the company’s strategy of following a high price strategy for all products.
3. A production division could achieve cost savings (producing a positive net present value) through an investment in the automation of the manufacturing process. However, it is forced to pass on part of the cost savings to the buying divisions by which the net present value of the cash flows from the perspective of the division will become negative. Therefore, it refrains from the investment.

The transfer prices can now be used to **influence** decentralised decisions. Assume that the divisional manager is responsible for short-term decisions. The head office announces a transfer price (or a transfer price scheme) to the manager for inter-company transfer of intermediate products. The decision behaviour of the manager can be steered by influencing the divisional profit through the transfer price. A higher transfer price in tendency reduces the amounts bought-in by the purchasing division, to choose another production procedure, or to accept a one-off special order less easily. A higher transfer price can change the producing division's production programme or the production amounts. Examples of such behavioural control effects will be given later in this chapter.

**Coordination function** is the term used throughout this book. A similar concept is sometimes described as "goal congruence" and suboptimal decision as "incongruent decisions". We prefer the abstract term of "coordination (function)" as the goals of different divisions usually will not be 100 % identical and the perspective on goals only seems too limited. Coordination, in contrast, indicates the main function and stresses the linkage to behaviour guidance and **management control**, for example of the divisional managers' decisions by the head office of a company.

### *Other Functions*

Transfer prices fulfil a number of other functions besides profit allocation and coordination, for example **calculation** for the determination of factors used in central decision-making when several divisions are involved or in affiliated group companies. The cost accounting system of such companies traces the relevant costs between different, legally independent divisions, used for price calculations. The determination of **costs of goods produced** for external regulatory purposes or rectifications of prices against third parties are other functions of transfer prices.

From a company perspective, a predominant issue is the optimisation of **taxes** and related payments. Transfer prices of multi-national corporations are often influenced by such considerations. These effects are ignored in this book, as profit allocation in that sense equals the manipulation and the allocation of profits to regions and countries that minimise tax payments for the company. As the title, "Transfer Prices and Management Accounting", suggests this book takes the approach of management accounting, i.e. the **managerial use of accounting information for decision-making** respectively with emphasis on the **decision-influencing** aspect. The OECD publishes guidelines for transfer prices in order to limit manipulation and applies the so-called arm's length principle. We ignore this perspective and relate our line of argumentation to the **management accounting view** and its **direct relationship to decisions**, in the described way, i.e. we focus on **coordination** and **profit allocation** in the described sense.

### Empirical results

The “*Transfer Pricing 2003 Global Survey*” by *Ernst and Young* (2003) questioned 641 financial managers of internationally active parent companies and 200 managers of subsidiaries from 22 countries about their transfer pricing policies, with tax versus management targets playing an important role. 80 % of the group companies preferred uniform transfer prices for both tax related and management related decisions. 40 % of the parent companies responded that management aspects were more important than fiscal issues, and for 25 % of the mother companies, the support of the company strategy were the exclusive driver of the transfer price policy.

In a similar study by *Deloitte* (2006), there were 240 companies with consolidated annual sales in excess of €500 million located in Germany. The four most important objectives of a transfer price system were shown as internal profit allocation, the support of the group strategy, the optimisation of company taxation and the control system for resource allocation. The companies confessed that not all objectives could be pursued simultaneously, and the top performer focused on the internal control (and, therefore, less on fiscal) aspects than the other companies.

In a questionnaire of Swiss companies, Pfaff and Stefani (2006) found that the majority of companies used uniform transfer prices for both external and internal functions. Market and full cost-based systems were predominant, and the companies seemed to classify the importance of synergistic effects for internal control as less important.

Transfer prices between legally independent company divisions are of special importance. In **commercial law** transfer prices are important when the participation ratios of mother company and daughter company are not identical (for example, if the daughter company has minority shareholders); then the **profit allocation function** is the focus of attention: the achieved profit should be divided “fairly” and “righteously” between the divisions to avoid discriminating against the minority partner. Effects caused by **tax law** can be seen similarly, as the total amount of taxes due can largely depend on the profit allocation, most obvious with transnational sales. The OECD has legislated directives for internationally uniform transfer price methods that are recommended. A “correct” division of the profit earned in connection with several divisions, nevertheless cannot succeed unambiguously and without doubts, and therefore companies have a certain leeway.

Finally, another function of transfer prices is the **simplification** of the cost accounting system by use of **normalised measures**, frequently only to keep exogenous fluctuations of the input prices out of analysis.

### *Asymmetrically Distributed Information*

Typically, models for the determination of transfer prices implicitly assume symmetrically distributed information: the head office has all the necessary information about the divisions, and with it could solve the coordination problem itself. At the same time, a need for the profit allocation function would not exist either, as the head office possesses all information anyway. Exaggerated, it could be said that transfer prices solve a problem that does not exist at all.

In a more realistic view, information will be **distributed asymmetrically**: the respective divisional manager is better informed about his division than the head office. Several examples are shown throughout this book about **misleading control** effects that can be caused by certain transfer prices because of better information of the divisions.

Asymmetrically distributed information not only has the effect that the head office can make less precise decisions, but also leads to the fact that divisional managers cannot be **assessed** by their real performance, but rather based on surrogates only. Such a surrogate is the **divisional profit**, which was already used in the previous discussion. With it, the objective of the divisional manager differs from the objectives of the company as a whole (i.e. conflicts of interest arises).

### *Conflicting Objectives*

The different functions of transfer prices frequently are **competitive** to each other. A transfer price that fulfils one function very well can be unsuitable or even counterproductive for another function. Particularly, the conflict of objectives between the two functions **profit allocation** and **coordination** is vast. *Example*: the company likes to provide considerable leeway for price setting to the division that sells externally at the market. For this, it is seen as necessary that marginal costs are applied to intermediate products sold within the company, because in the short-term perspective they equal the only relevant cost. With linear cost functions, the selling divisions producing these intermediate products, end up with a loss in the amount of their total fixed costs potentially resulting in a high divisional loss, while the purchasing division gains the total contribution margin. For the function of profit allocation, such divisional profits are worthless and meaningless. It applies similarly to other functions, such as the tax-optimal determination of transfer prices. Such transfer prices are often very unfavourable for management control issues.

**Conflicts of objectives** are frequently found within the same function. Assume that the head office would like to limit the demand for an internally produced product. One possibility is setting a high transfer price for it, as the purchasing division would reduce demand if possible. At the same time, the head office needs undistorted measures for their own decisions, for example, the allocation of resources to the divisions, and a transfer price set too “high” is unsuitable for this.

Such conflicts of objectives can be solved in a relatively simple way, by the use of **different transfer prices**, one for every function. Every division determines two or several divisional profits, for example, one used for the manager’s assessment and another indicating the “real” profit. However, this solution frequently meets with difficulties in the reality of company practice. How could it be

explained that a divisional manager must pay marginal costs of the internal product (for coordination purposes), while his divisional profit is determined based on higher costs, with the profit used for measuring and assessing his performance? The coordination takes place just by the fact that the performance measure (divisional profit) is manipulated in a way that divisional managers autonomously make decisions in the best interests of the company as a whole. In other words: *“In some cases, the impression is given to the divisional manager that he is playing a bookkeeping game”* (Dearden 1962, quoted by Thomas 1980, p. 209). However, if the assessment is disconnected from this manipulated profit, the coordination function of the transfer price could not be reached at all.

Another problem arises: typically, the **divisional profit** is dependent upon **strategic decisions** made by the head office. The divisional manager can raise his profit if he receives higher resources. With this mechanism, the “real profit”, following the function of profit allocation, will create reactions in the co-ordination and control system. For example, the manager will align his decisions not only with the transfer price installed as part of the management control system, but also with maximising the “other” profit that will raise his profit through resource allocation. As a result, the head office cannot receive an undistorted divisional profit and must also consider these incentives. With it, the profit allocation function is absorbed to a certain extent by the management control function.

For these reasons, companies usually use only one transfer price, and it arises from balancing the effects of different transfer prices on the respective functions.

Other optional solutions of the conflicts of objectives are interventions in the decision autonomy of the divisions, for example, obligations of delivery and purchase commitments or restrictions, or changes of the organisational structure or the incentive system. Other performance measures, such as productivity ratios, could replace divisional profit. Profit as a criterion has enough disadvantages by itself: profit is typically short-term based and highly aggregated. At first glance, a renunciation of the determination of separate divisional profits and the divisional managers’ assessment based on the joint profit (profit sharing) appears to be a way out of the dilemma; however, there are also a number of negative side effects. Since every divisional manager is only connected to a small part of the positive and negative success, he can prefer to reduce his individual efforts and to use them otherwise. How could motivation of decentralised decision-makers be achieved if they depend on profit figures that can only be found centrally, more or less in one account for all divisions?

## 2.3 Types of Transfer Prices

In theory and in practice, a multiplicity of transfer price types is used. They can be summarised and categorised into three major **types**:

- **Market-based** transfer prices,
- **Cost-based** transfer prices,
- **Negotiated** transfer prices.

**All three types** are often used in practice and the most frequently used type is the cost-based transfer price, followed by the market-based transfer price.

The significance and informative value of such examinations suffer from the fact that the three types of transfer prices are **not entirely free of overlap**. *Example:* A construction and engineering company applies costs as a basis for its market prices (i.e. offers) and negotiates these prices in the following way. For internally produced intermediate products that show the same characteristics it is unclear as to whether the transfer price is market-based, cost-based or negotiated. Often, companies use several types of transfer prices simultaneously.

The operations research literature also explored transfer prices from different perspectives (the interested readers of this book will find some references at the end of this book).

## 2.4 Organisational Settings

For the **practical application** of transfer prices, criteria like **simplicity** and **acceptability** play an important role in practice. What use does a very ingeniously devised transfer price system have if no user is able to understand and administrate it? For acceptability, it is essential to know whether the transfer prices lead to divisional results that are considered fair.

Therefore, apart from the choice of the type, the following **questions** need also to be answered:

- Who determines the transfer price?
- What duration does the transfer price have, and what are the circumstances when it must be decided upon anew?
- Is the transfer price chosen permanently or dependent upon production volume?

Often transfer prices are only set for key products, while all other products transferred in insignificant amounts are based on simple rules such as market prices applied.

Transfer prices cannot be assessed without consideration of the **company's organisation**. Of particular importance for the function of transfer prices is the decision scope that the divisional manager possesses. In companies certain organisational conditions, so-called **rules**, are defined for this. Among other things they are:

- Does one or every division have the choice to partially or fully buy in from the market, or is there a strict rule to buy/sell internally?
- Are there priority rules for internal sales?
- Can a division freely make an external agreement at its conditions (last call)?
- To what extent must central services be bought internally?
- May a division produce a product themselves even if another division produces the same product?
- Up to which volume can a divisional manager make investment decisions?
- Can a divisional manager select staff?
- What are the informational obligations and ways between divisions?

**Remark**

It is more difficult to work inside than externally. In the smallest impasse, a person can go up the line. Nobody wants to have the boss coming and making accusations of not cooperating. It is always difficult, so you need a financial incentive or something else, such as recognition for being a good corporate citizen (An anonymous manager quoted in Kaplan and Atkinson 1998, p. 455).

This chapter first discusses **sequential production** in vertically integrated companies. In their most simple form, there are only two divisions, a producing and a purchasing division. It becomes more difficult in cases where the producing division also manufactures other products (how are the indirect costs allocated?), and cases in which several divisions buy the internal products. **Resources and market interdependencies** are discussed afterwards; it mainly focuses on **competition** among the “purchasing” divisions for the limited resources of the producing division. The resource consumption is to be controlled, often by the head office or a service centre.

Transfer Prices and Management Accounting

Schuster, P.

2015, X, 71 p. 7 illus., Softcover

ISBN: 978-3-319-14749-9