# A Principle for Action

# 4

*To think is easy. To act is hard. But the hardest thing in the world is to act in accordance with your thinking.*
Johann Wolfgang von Goethe (1749–1832)

**Opening Vignette**

Alois and Meret had gone to the 40th birthday party of Meret's boss. She worked in investment banking and prided herself on her logical and rational way of thinking. It must have been a case of opposites attract, because Alois was quite different. A university lecturer in the history of art, he was, by his own admission, only half as logical as Meret, but, as he liked to say, twice as creative and able to think "outside the box" (a term Meret hated). He had told her on innumerable occasions that real artists didn't think like computers, but dealt with emotions and feelings. She always responded that while there was a place for emotions in private life, there was no place for them in the world of finance. Meret always held that the best decisions were the ones you thought through, not those were you just used your "gut instinct". "People aren't like that," Alois would say, "they're not algorithms!".

After a while, an entertainer was introduced and he announced that they would be playing a game. It consisted of the following: each guest must write a number between 0 and a 100 on a piece of paper. The notes would be collected and the average of the numbers then determined. The entertainer explained, "Whoever is closest to two-thirds of the average with her or his number has won. What number are you going to write pick?"

"Easy" said Meret to Alois. "The average must be 50 because each guest can choose any number! Half will chose above 50 and half below 50. So two-thirds of 50 is 33—that's what I'll choose!"

"Hold on a second," Alois warned her. "If everyone is as rational as you, they'll all think about putting 33 and two-thirds of that is 22. But then again, everyone will think like that, won't they? That is if they're rational as you say they are."



P. Eichhorn, I. Towers, *Principles of Management*, Springer Texts in Business and Economics, https://doi.org/10.1007/978-3-319-70902-4_4

"Hmm, I suppose so," replied Meret. "Then that means the average should go down towards zero." Both entered their number, neither telling the other which number they had chosen. Ten minutes later the entertainer came in with the result. "And the winning number is……!" Neither Meret nor Alois came close to winning. "But," Alois said, a little arrogantly to Meret's ears, "we were both wrong, so I'm right about people not being rational. Aren't I?"

## 4.1 Metaeconomic Foundations

### 4.1.1 The Principle of Rationality

Economic action is often considered to be equivalent to rational action. Some people go so far as to identify rationality as an economic principle and the rationally behaving individual with the *homo oeconomicus*. Carl Menger (1840–1921) was one of the first to use the term *metaeconomics*. It represented a new kind of economics, one which relies very heavily on mathematical models and as a consequence is purely rational. This notion must be dismissed: economic action can be rational but also irrational, as recent developments in behavioural economics indicate.

Rationality can be subdivided into **economic and metaeconomic rationality**. These two forms of rationality can be alternative to each other, or complementary, or, in a few cases, unconnected. The most common form of relation between the two is the alternative, or trade-off. What is economically rational can be irrational from the point of view of art, democracy, education, health, justice, politics or technology. For instance, an individual entrepreneur may find it entirely rational to export weapons to North Korea, but this is arguably irrational from a political standpoint. Another example: it is metaeconomically rational to buy cheap food, but irrational if it effects one's health.

Conversely, action inspired by metaeconomic rationality can be against economic rationality as is the case in the following example: state universities in Germany do not charge fees, so from the metaeconomic view it is rational to study at one in order to save money. However, these savings are irrational from view of a student who can learn better in a private university with smaller classes and so would get better results (with the assumption, of course, that she can afford the tuition fees).

Even if actions are deemed economically rational, we need to think about whether this rationality applies just to a single economic actor or to the economy as a whole. Since rationality is ultimately indivisible, we must reconcile perceptions and insights from metaeconomics with economic logic.

### 4.1.2 Goals and Objectives

When we consider the rationality of a set of actions, we also need to think about the goals of these actions and how they can be best achieved. We can take the case of a

mountaineer: the **meaning** of their actions lies in their sporting performance and in the feeling of isolation and freedom, their **goal** is the top of the mountain, their **objective** or **purpose** is to climb the mountain and their **means** are their skills and equipment. There is an obvious functional relation between means and end.

A goal is a desired situation; having an objective implies the goal-oriented deployment of means. The relation of means to end is a question of efficiency, and it can be shown as in Eq. (4.1):

$$Efficiency = \frac{Goal}{Means} or \frac{Objective}{Means} or \frac{Target}{Means} \tag{4.1}$$

**Equation 4.1** Efficiency

Our mountain climber behaves appropriately if they choose the best combination from a number of alternatives, which include a more direct or less direct route on the mountain on the one hand, and heavier or lighter equipment on the other hand—their choice could be heavy equipment and a less direct route, which would take longer and so they might need to camp. The alternative of light equipment and a more direct route implies a speedier ascent.

This example also illustrates that there are different types of efficiency. A professional mountaineer may very well choose differently from an amateur climber, and a mountain guide might prefer another combination of route and resources, more oriented to the wishes and abilities of his customers. Simplifying somewhat, we can identify **an economic and a metaeconomic purpose**. The mountain guide pursues an economic purpose, the amateur climber pursues a metaeconomic purpose, possibly health or recreational, and the keen climber pursues one or the other purpose, or possibly both at the same time. The choice of means and the choice of route can be made on the basis of economic or non-economic criteria.

There are different kinds of efficiency—technical, political and economic. When ends and means are determined by (mainly) economic considerations, we have a case of **economic efficiency**. Another definition of economic efficiency is the relation between target figures and performance, for instance the comparison between planned and actual output; we discuss this more in Chap. 7.

Economic efficiency does not necessarily imply that the goal to which actions are leading is an economic goal. The goal of conquering a mountain may be purely motivated by the feeling of joy that mountain climbing brings, or it may be the result of the desire to earn an income, or it may be a combination of both. Turning to businesses, **performance or substantive goals** can be set against **financial or formal goals**; the former can be of an economic, cultural, charitable or ecological nature, while the latter consist of numbers such as rate of return, profit margin and costs. Here are some examples:

- An industrial company produces office equipment with a very high level of quality (substantive goals) and pursues a profitability rate of 10% (financial goal).
- A theatre puts on a play (substantive goal) and must cover its costs (financial goal).
- A municipal office is responsible for procurement (substantive goal) and can spend no more than 1 million euros (financial goal).

When non-economic goals influence economic goals, we are again made aware of the problems of the metaeconomic approach.

Mutually connected and dependent goals are elements of the overall system of goals of individual economic agents or multiple economic agents. The interdependencies and relative importance of the intermediate and final objectives (i.e. short term, medium term and long term) of an economic entity are similarly complex, as are their relationships with the different possible sets of means (we discuss goals in more detail in Chap. 5). To understand these relationships, we must recognise **the centrality of means and ends to the achievement of goals**. Is the use of inputs reasonable in terms of meeting predefined objectives or are there other possibilities for achieving these objectives? A question we have not yet asked is: are the goals themselves reasonable? Our focus has been on discussing the relationship between means and ends, but not on whether the means or the ends are in themselves desirable or sensible.

As indicated above, **behavioural economics** is concerned with non-rationality in economic decision-making. Like its related discipline, it questions the assumptions of metaeconomics and the *homo oeconomicus*, who is taken to be completely rational. Using insights from psychology and neuroscience, behavioural economists focus on three main topics:

- the fact that people make 95% of their decisions using heuristics, which are mental shortcuts such as "the more expensive the wine, the better it is",
- the use of framing to construct a reality (see Chap. 1's discussion of perception and thought processes), and
- the existence of market anomalies, where prices exist that seem to contradict the hypothesis of efficient markets.

The opening vignette in this chapter is an example of how irrationality can exist in decision making, a concept that is also not unknown to marketers.

## 4.2 Basic Principles of Economic Efficiency

### 4.2.1 The Principle of Maximum Result

Purposeful actions imply the best possible relationship between means and ends (inputs and outputs) and this can be achieved by **keeping one of them fixed and varying the other**. Changing them both at the same time is logically impossible, as

the following example illustrates. An athlete cannot sprint over a long distance. We can give her a specified time (the input) and then measure the distance she has covered within this allotted time—this is the output. Alternatively, we could set the output (a distance—for example 100 m) and measure the time (the input) she needs to cover it.

The principle of maximum result means achieving the greatest possible output (the purpose) with a given input. Since the purpose is often identified as a goal, and the goal placed in an economic category, we often refer to the principle of maximum result in terms such as goal orientation, benefit orientation, output orientation, revenue orientation and so on. A favourable relationship between means and purpose does not in itself represent a final goal, but is at most an initial or intermediate goal, or in other words, a **basic condition** for the achievement of a goal. For instance: a taxi driver has many costs (fuel, loan payments on the vehicle, licence fees) and so aims to have the maximum number of trips to generate revenues.

The principle of maximum result is shown in Eq. (4.2).

$$Max! = \frac{Output}{Input} \tag{4.2}$$

**Equation 4.2** Principle of maximum result

### 4.2.2 The Principle of Minimum Means

We follow the principle of minimum means when we try to reach a given end (goal, purpose) with the lowest possible input—e.g. how few workers and machines does a factory need to produce 10,000 T-shirts a day? Using economic categories, the principle of minimum means leads to resource oriented, input oriented, expense oriented or cost oriented approaches. It is difficult to think only in terms of economic efficiency when we look at this principle, because not only direct costs need to be considered. It is important to decide what other internal costs need to be included, nor should external costs be forgotten, such as the effect on the social and natural environment and on the various stakeholders. A complete analysis of economic efficiency has to compare all benefits and costs of any actions.

The principle of minimum means can be expressed as shown in Eq. (4.3).

$$Min! = \frac{Input}{Output} \tag{4.3}$$

**Equation 4.3** Principle of minimum means

In general, it is impossible to say whether the principle of maximum return or the principle of minimum means is a better way to achieve goals. This depends on the way the goal is set and the **accompanying conditions** for the assessment of efficiency. As far as economic efficiency is concerned, it is immaterial which of these principles is followed.

### 4.2.3 Planned vs. Actual Perfomance

The relation between results (output) and means (input) is not the only one through which we can think about efficiency. Another relation is that between the desired result (target) of the use of certain means and the result that the use of those means actually achieves. Equation (4.4) shows this relationship; the higher the quotient, the more effective the activity.

$$Effectiveness = \frac{Actual\ performance}{Planned\ performance} \tag{4.4}$$

**Equation 4.4** Effectiveness

If we assume that 400 units have actually been produced in a certain work process, although 500 should have been (and could have been) produced, based on a comparison with a previous period of time or with another department or with another, similar firm, the calculation is simple: $400 \div 500 = 0.8$. If all the units had been produced as planned, the quotient would be 1, and a production of 600 units results in a quotient of 1.2.

### 4.2.4 Categorisation

The principles of efficiency remain empty propositions if the numerator and denominator of the relations between purpose and means, and between target and actual performance, are not put into categories. We must go beyond **raw numbers**, and **describe the contexts** for which it is important to make information available. For example, the tax authorities want to levy taxes efficiently, a publisher measures the effectiveness of its advertising of a new (hoped-for) bestseller in terms of sales, and a student hopes to learn effectively.

The choice of categories depends on the kind of conclusion one wants to draw. In administration, aesthetics, construction, criminology, ecology, economy, engineering, literature, medicine, pedagogy and politics (just to mention a few fields) we can use very different categories. A building project, for example, can be reviewed on the basis of architectural, aesthetic, safety and economic categories. The problem consists in bringing together all the different aspects and their analyses. In the best case. a common denominator and a uniform dimension can be found—possibly through different scoring models as used in cost-benefits analysis (see Sect. 6.6.2).

We need to be aware that the **principles of efficiency** capture only one of many possible points of view. In addition to thinking about the inputs and outputs required to build a factory in a purely economic sense, its construction requires consideration of legal aspects as well as of tax implications; safety requirements must be taken into account, as well as practicality, adaptability to production processes, access to transport, ecological impact and so on. So we need to go beyond the concepts of economic efficiency and take into consideration non-economic characteristics in order to gain a general, overall perspective. To enable us to do so, we can use the concepts of efficiency and effectiveness which tell us about the contribution of the actions we take to the achievement of our goals.

**Efficiency** describes the relationship between actions and their effect, or the relation between employed means and purpose achieved. **Effectiveness** refers to the achievement of goals. Efficiency refers to the relation between input and output, and effectiveness makes it possible to describe the relation between the way things actually are (actual performance) and how we wanted things to be (the target) and to determine whether a certain output has been useful, so it measures the degree of goal-achievement. A simple example: Peter and Maria each own a house with identically sized gardens, each of which needs a new lawn. Peter chooses Louise to work in his garden and Claire works for Maria. Both get the job done to their owner's satisfaction so they can say that their efforts have been effective. However, Louise used 25% more seed than Claire and took 7 h longer: Claire's performance was more efficient than Louise's performance when we look at the inputs (time and seed) and the output (a freshly sown lawn).

By using economic categories to describe input and output we can draw conclusions about economic efficiency, but this does not tell the whole story because efficiency also depends on **outcome** and **impact**. An example from a firm: a company produces and sells cigarettes (inputs are tobacco, labour etc; the cigarettes are the output). There are positive (duty on tobacco) and negative (street cleaning costs increase) outcomes and positive (feeling of satisfaction for the smoker) and negative (health-related) impacts. A second example: at a public broadcaster economic efficiency is determined by the input—the use and cost of resources (staff, actors, studio equipment and so on)—and the output as measured by the minutes of broadcasting produced. The outcome is the quality of the programmes and, obviously related to the quality, the extent to which the goals of

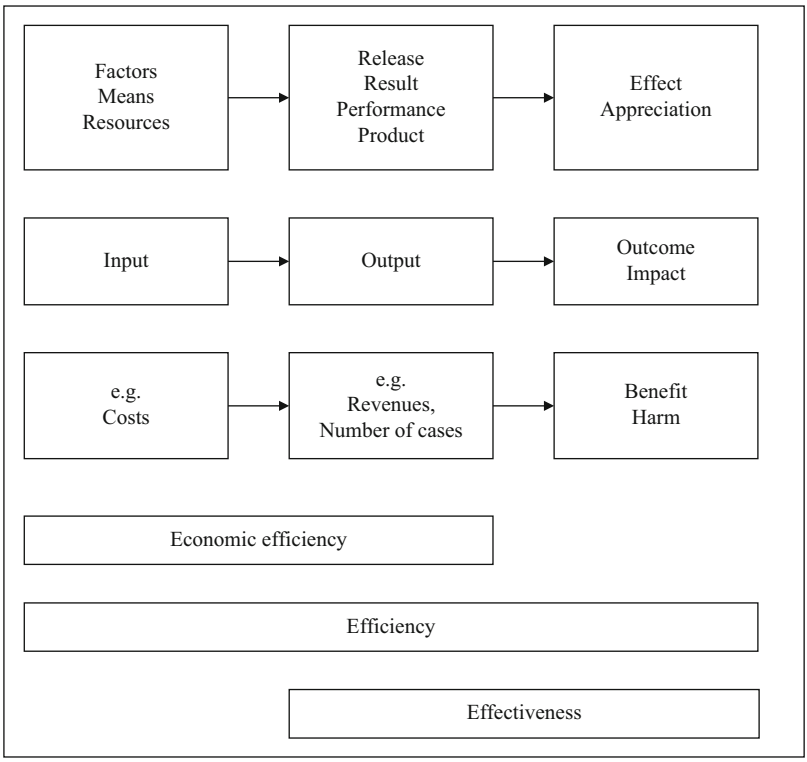


**Fig. 4.1** Economic efficiency, efficiency and effectiveness

the programme makers have been met. The impact is the acceptance of the programme by the general public and its satisfaction with it.

The concepts of efficiency and effectiveness often have only economic connotations when used in everyday language, and sometimes even when experts talk about them. But as we have shown, efficiency and effectiveness include, but also go beyond, economic aspects, as Fig. 4.1 illustrates.

We should not confuse the terms economic efficiency and profitability. **Profitability** is the return on invested equity and/or debt capital and describes the rate at which capital grows (or shrinks, in case of negative profitability) when it is invested for a certain period. It can be calculated as a percentage, as shown in Eq. (4.5).

$$Return\ on\ capital = \frac{Profit}{Capital} \times 100 \tag{4.5}$$

**Equation 4.5** Profitability

**Economic efficiency** is an input-output relationship to which we can attach monetary values and which can be measured as shown in Eq. (4.6).

$$Economic\ efficiency = \frac{Operational\ income}{Operational\ expenses} \times 100 \tag{4.6}$$

**Equation 4.6** Economic efficiency

Combining economic efficiency and profitability generates four possible states:

- economically efficient and profitable (e.g. a farm works economically and is profitable),
- economically efficient and unprofitable (e.g. an advertising agency is well managed, but still makes a loss due to a downturn in the economy),
- economically inefficient and profitable (e.g. a plumber who runs his own company is not good at managing his resources, but has enough jobs to still make a profit), and
- economically inefficient and unprofitable (e.g. a trading concern has too many staff, negotiates bad deals, and so makes a loss).

We can also calculate **return on sales**, which is the relationship between profit and sales revenues, as shown in Eq. (4.7).

$$Return\ on\ sales = \frac{Profit}{Sales\ revenues} \times 100 \tag{4.7}$$

**Equation 4.7** Return on sales

It is important that we think about economic efficiency in broad terms, because any statements that we may make depend on the goals that have been set, and these themselves depend on the system in which the economic activity is taking place. The goal of improving economic efficiency is generally based on the idea that competition forces the lowering of costs, so that profit grows accordingly (assuming that revenues stay the same). This relationship holds in the situation where companies are competing to make a profit, i.e. in capitalism. But different systems are possible, such as one based on the principle of solidarity. In this case goals would be based on satisfying the needs of the commons or other groups as economically efficiently as possible, meaning that economic activity would not be centred on money but on meeting specific—non-monetary—objectives.

## 4.3 The Economy of Needs

### 4.3.1 The Principle of Solidarity

Underlying the principle of solidarity is the concept that a community or group is striving for **social equity**. The reasons can be ethical, religious, humanitarian, political, social or given by the state; they can even lie in market failure or in the desire to reduce risks (for which reason solidarity funds, social insurance and pension funds exist). The members of a community or group that is based on this principle make contributions (which may be equal or based on their means) which are used to meet their needs. It may be that everyone's needs are met in exactly the same way (no differences between people or institutions) or there may be differences in the way needs are met, based on specific individual or institutional characteristics.

In principle, then, four cases are possible:

1. Contributions are equal on a per capita or per institution basis, and all are treated the same concerning the employment of resources.
2. There are differences between people and institutions in terms of contributions made and the employment of resources to serve them.
3. Contributions are equal (as in 1) but there are differences in how the resources are allocated (as in 2).
4. Contributions are not raised equally (as in 2) but the resources are allocated equally (as in 1).

Differences in contributions and in allocation of resources can be based on criteria like ethical or social standards, or economic standards such as performance.

Social insurance and pension funds are normally based on a system of proportional contribution and their resources are employed based on need. On the other hand, the system of income tax is based on progressive contributions, which require the financially better-off to contribute a higher proportion of their means to the financing of the activities of the state.

### 4.3.2 The Priority of Substantive Goals

A common feature of all economic agents that are bound to the principle of solidarity is the priority of meeting their substantive goals (as opposed to their formal goals, which are secondary but nevertheless must exist in a money-based economic system). Substantive goals in a system based on the principle of solidarity centre around meeting the needs of the community for accommodation, education, infrastructure, recreation and so on **without a making a profit or wanting to make a profit**.

Needs must be met in the most economically efficient way, meaning that everything related to meeting needs should be done for as low a cost as possible,

from raising funds, through producing the necessary goods and services to delivering them. Economic efficiency in meeting needs has met with little interest in the disciplines of business administration and economics, nor in businesses and governments. Relevant research is overdue, given the **range of problems** concerning the determination of needs, the procurement of factors to meet them, the costs of these factors, the management of quality, issues related to financing and the perspectives of those whose needs are being met.

## 4.4 The Economy of Returns

### 4.4.1 The Principle of Competition

The counterpart of meeting needs according to the principle of solidarity is the effort to secure returns in competition with other economic entities. The principle of competition does not require that issues of social equity are taken into consideration; it is rather about the **assertion of interests** against those of competitors. We can distinguish between monetary and non-monetary interests and between economic and non-economic competition. Of the greatest importance in a market economy with free competition are the maximisation of economic returns and product-price competition.

In the case of competition in sports, between political parties or political associations in elections, when building one's career, between cities aiming to attract companies, between artists and scientists for reputation, etc. competition takes place in the **social sphere**. In all these cases the decisive factor is not profitability, but rather extra-economic motives and considerations.

As mentioned above, free competition is not necessarily a feature of the market economy because **limited competition** is also possible. State interventions—spurred by market failures (including negative externalities and information gaps)—can take the form of the direct regulation of state-owned or private enterprises, or also the form of setting the conditions under which whole sectors of the economy must operate, such as happens in the energy sector in most countries, including Germany and the UK, and in the transport, mail and telecommunications sectors. In the former case, the need to carry out public tasks or requirements to provide services are set by the state. In the latter case, the state takes measures that can include limitations to market entry, incentives for innovation, regulations regarding product quantity, quality and prices, safety standards and the extent of liability. Despite these interventions of the state in the market, competition does take place, although it is limited. It takes the form of competition between groups, competition between substitute products, competition on the basis of price and as competition where conditions have been imposed, such as having to pay compensation and offering free use by certain groups or at particular times. Forms of limited competition can be observed in the areas of infrastructure, especially in the energy, transport, mail and telecommunications sectors.

What is important in a regime of free or limited competition, is that the **same conditions** apply to all competitors, i.e. all have the same starting point and all are treated equally.

### 4.4.2 The Priority of Financial Goals

Financial goals are the priority for most participants in a market economy and consequently they drive the actions of market participants. The financial goal of companies is generating profit and of households generating a surplus of income over expenditure. Theoretical economic models assume that enterprises have the goal of **profit maximisation**, although in the real world most of them aim at a return on employed capital that may be variously described as adequate, satisfactory, average or typical. In reality, profitability competes with other goals such as liquidity and simply staying in business. The maximisation of the return on investment is often linked to an increased risk of insolvency—see Chap. 6 for more on this topic.

Actions that are based on financial and commercial goals are of necessity linked to meeting the needs of other economic agents. This process is an indirect one; needs can only be met if they take the form of **demand**, which comes into existence when needs are complemented by purchasing power.

## 4.5 The Economy of Self-Interest

### 4.5.1 The Principle of Equivalence

The concepts *economy of needs* and *economy of returns* refer to the goal-oriented behaviour of economic entities and the concepts *economy of self-interest* and *economy of common interest* refer to the orientation of the goals. The principle of equivalence of **performance and consideration** (counter-performance) applies in the economy of self-interest. In a money-based economy a consideration is (usually) paid in return for work, service, the right to use facilities or goods, and for the lending of money. In order to survive, economic agents are forced to ensure that the flows of goods or services in one direction and payments in the opposite direction are more or less **equivalent**. For instance, a company whose products are very expensive in comparison to those of competitors will probably go out of business because the flows are not equivalent—customers are paying too much for what they are getting.

The flow of goods and services in one direction and the flow of payments in the other direction do not necessarily take place simultaneously. There is no delay when cash is paid and the bought product handed over straight away; when firms, associations and administrations buy, it is usually on credit. Firms can bridge a short-term gap through careful management of liquidity and of cash flow, at the same time making sure that all transactions are booked in the correct accounting

period. The principle of equivalence still applies in the case where there is a longer gap between delivery and payment, as when a company borrows a large sum from the bank for immediate use, but pays the loan back over a period of 5 years.

There are problems if money is losing its value at a rapid rate (i.e there is a high rate of inflation), is hard to get hold of or is expensive, because in these cases there is no real equivalence between the flow of goods and services and the flow of payments. In such a situation the flows tend to dry up, or, in extreme cases, a form of **barter economy** emerges, as it did in Germany during the 1920s, when there was a fifteen-fold increase in prices between June and December 1922, and the price of a loaf of bread which cost 250 marks in January 1923 rose to 200,000 million marks by November in the same year.

Flows of goods and services and of payments are in the majority of cases essentially simultaneous, whether we are talking about trading currencies, purchasing goods, the payment of rents, paying for labour and so on. The principle of equivalence also applies to **public charges** as they relate to the provision of a public service, such as treating sewage. An interesting case is offered by the payment for services provided by hospitals: if the full cost of each hospital stay is paid—including the costs of financing the infrastructure, for example—the principle of equivalence applies fully. But when payments simply cover running costs, we have a case of **partial equivalence**. A further example is the payments made by homeowners for road construction—they do not pay the full costs of the work needed to build a road to their home. Similarly, the small administrative fees levied for a government service are not equivalent to the services received, nor are, of course, taxes, whose payment does not imply receiving goods or services of equal value in return.

#### 4.5.1.1 The Goal of Cost Coverage

The economy of self-interest presumes that economic agents **finance their own consumption of resources in the long run**, implying that revenues must at least cover costs. Cost coverage for firms only involves sales revenues from commercial activity, i.e. the result of normal operations, and is not the same as the coverage of expenses or expenditures because these can involve the use of non-operating income or revenues. Some economic agents are bound to the principle of equivalence, like housing cooperatives, public hospitals, old people's homes, pension funds, mutual insurances, public utilities, and other non-profit economic agents. Other economic agents strive for a surplus after costs have been covered, of course, and when this happens the interests of owners, managers, employees, and other stakeholders can be taken into account.

***Covering costs*** is a somewhat empty phrase for a firm, being a grey zone together with the profit goal. The extent to which it can be said that costs have been covered is not fixed, because it depends on many factors, such as the recipient of the cost information (internal external parties or, such as rating agencies, banks, customers or negotiation partners), on how costs are defined (on the basis of cost or financial accounting), on which values are used (purchase price or replacement price), on how costs are accounted for in the cost accounting system (full or direct

costs), on planning methods (simple extrapolation or detailed forecasts) and on which period of time costs are assessed (short term break-even point, margin contribution, asset preservation for long-term viability).

The **range of possible variations in cost coverage** can be well illustrated by the example of depreciation and amortisation, which depend on the concept of cost used as well as on the capital structure, reinvestment effects, the maintenance of capital and much more. These topics are covered in more detail in Chaps. 6 and 7.

## 4.6 The Economy of Common Interest

### 4.6.1 The Principle of Alimentation

The terms economy of common interest and social economy originally referred to common property, the property of a cooperative or of the state, but today these terms cover all those economic agents that act in the common interest, i.e. primarily for third parties, not themselves. They cover functions in the fields of health, society, justice, the environment, culture, science, politics and administration and they follow the principle of alimentation, meaning they provide **goods and services free of charge**. This is possible through unpaid volunteer work, donations, compulsory contributions, fees and taxes, as well as internal support. In the latter case, for example, a money-making part of an organisation can support the charitable work of another part of the organisation, as is often seen in the corporate social responsibility programmes of companies.

Besides such pure forms of alimentation, we actually find in practice mainly **mixed forms**. Services are not supplied completely free of charge, so that those who use them have to finance part of their costs. Students, for instance, pay reduced prices for room and board to the student services of the university, which are in turn subsidised by the state. Or, the revenues of a local authority department that produces a surplus may subsidise the transport department (a cross-subsidy). The principle of equivalence applies to the users of these services, rather than the principle of alimentation.

### 4.6.2 Striving for Common Welfare

The principle of alimentation corresponds to working towards the common welfare, i.e. the common good, where the goal is to contribute to social, economic and ecological welfare. The economic agents involved in this—be they private or public—do not aim to make money from their goods and services, but provide them free of charge or at a low price. Financing is based on similar principles: it is voluntary in the case of private economic agents like associations, churches, foundations and unions, but compulsory with public ones, like city, regional and state public authorities.

## 4.7 The Individual Economy

### 4.7.1 The Institutional Principle

The economic efficiency of individual economic agents and of a whole economy are two different concepts, so carrying out an economic analysis of a single economic agent is different to a macroeconomic analysis. The institutional principle helps us to more clearly define the objects of economic study and analysis—in our case, economic agents—and this helps us to win insights. How do we recognise an economic agent? As we discussed in Chap. 3, critical in this respect are the factors of production used, the degree of autonomy in decision making and taking action. This led us to identify households, firms, associations and administrations as the core types of economic agent, all of which can—and should—be managed so that they act in an economically efficient and effective way.

### 4.7.2 The Creation of Added Value

Individual economic entities—private households, foundations, firms, private or public associations, public authorities—have different sets of goals, but one thing unites them: they can only survive by adapting to the environment. Ensuring survival is a long-term goal, and this is achieved when an economic entity adds it own contribution to the value of the factors it acquires from its external environment, and it adds value if its contribution means that it **produces more output than the input it uses**. The outputs can serve the economic agent's own needs or those of others, they can be measurable or not, paid for or free of charge, produced now or later. Added value does not necessarily imply a monetary value, for it can be intangible, such as an increase in the number of jobs, increased safety, better energy conservation, a higher frequency in the provision of a service, increased health and ecological protection. It is at the same time evident that these social and ecological values and goals also always have an economic component.

## 4.8 The Aggregate Economy

### 4.8.1 The Principle of Aggregation

The overall economy emerges from the pooling of the individual economic entities within it. Until relatively recently, the overall economy was identified with the national economy, but today issues of national economics have declined in absolute importance compared to those of the global economy and regional economies. Economic agents of similar type form **institutional aggregates** and economic activities of similar type form **functional aggregates**. For example, the highest level of aggregation in national accounts is of all enterprises, all private

households and all public bodies, and in these accounts we find total production, income, assets, credit and foreign exchange transactions, imports and exports and so on.

### 4.8.2 The Growth of Wealth

The goal of the economy as a whole is to increase prosperity; in an extreme case this could take the form of the maximisation of prosperity. The starting point for this is **quantitative growth of the national product**, but this should mean that everyone benefits from the growth, not just an elite. As many social groups as possible, then, should benefit from the growth of the national product according to their contribution, but also on the basis of political decisions that are taken about the distribution of wealth.

Qualitative considerations are becoming ever more important in the context of the economic efficiency of an economy, and economic activity is measured increasingly by its **contribution to the quality of life**. This can be measured indirectly by looking at numbers which allow us to draw conclusions about qualitative aspects of prosperity and related goals. Examples of these social indicators include the rate of unemployment, the index of vocational qualifications, the ratio of teachers to pupils, infant mortality, life expectancy, crime, carbon dioxide emissions, income distribution and so on. The development of a differentiated, informative and normative system of goals for these measures is an ongoing challenge for researchers. The OECD (Organisation for Economic Cooperation and Development) has developed a Better Life Index which ranks countries on the basis of material living conditions (housing, income, jobs) and quality of life (community, education, environment, governance, health, life satisfaction, safety and work-life balance). The top countries in 2017 are Norway, Australia and Denmark, while South Africa, Mexico and Turkey form the bottom three of the (so far only) forty countries analysed.

So we move away from a narrow perspective to a broader one, from **wealth** to **welfare**. We should, strictly speaking, differentiate between economic and social prosperity. **Aggregate economic welfare** considers economic circumstances; welfare economics and cost benefit analyses deal with the effects of individual economic activities on aggregate economic welfare and seek to evaluate them with the support of quantitative and qualitative economic categories. **Aggregate social welfare** goes further and includes goals in the areas of health, the environment, culture, society, law, politics and other extra-economic fields. At present neither theory nor practice provide methods for the measurement of these goals, let alone their expression in monetary terms.

Figure 4.2 provides an overview of what has been discussed in the chapter.

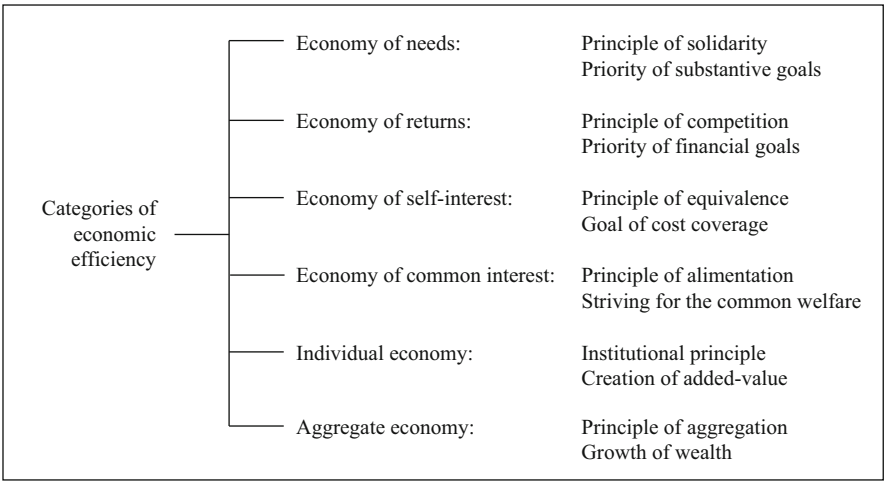


**Fig. 4.2** Categories of economic efficiency

## 4.9 Examples and Exercises

### 4.9.1 Economic Efficiency

**Situation**
SAV GmbH is a small bakery company which produces baguettes and rolls for hotels in the Berlin area. Karina Müller has just been appointed general manager and one of her first actions has been to investigate the economic efficiency of the company. She finds out from the head baker that according to the recipes they use, 500 g flour produces ten rolls, and that the flour they use costs 1.00 €/kg (other costs are negligible). The selling price of one roll is 0.05€. They normally produce 4000 rolls per day.

**Problem I**
Karina looks at last week's figures and notices that SAV sold 20,000 rolls and that had been 1000 kg of flour had been taken from storage to produce them. What conclusions can she draw from this?

**Solution**
She can look at the value relationship.

$$\begin{aligned}\text{Output/Input} &= 20,000\,\text{rolls} \,@\, 0.05€/\text{roll} \div 1,000\,\text{kg flour} \,@\, 1.00€/\text{kg} \\ &= 1,000€ \div 1,000€ \\ &= 1\end{aligned}$$

She can also investigate effectiveness. 20,000 rolls were produced; the recipe calls for 1000 kg of flour to be used and this is what actually happened.

**Problem II**
SAV is efficient but now she now wants to make the company more profitable by 10%. What are her options?

**Solution**

1. SAV could bake more with the same amount of flour. She rejects this possibility on the advice of the head baker as the rolls would not taste as good.
2. A second option is to reduce the amount of flour used. She rejects this for the same reason.
3. They could use cheaper, lower quality flour. This option is also rejected.
4. They could try to find a cheaper supplier.
5. They could raise the price by 10%.

They actually find a cheaper supplier, who is willing to sell them the flour for 0.90€/kg.

$$\begin{aligned}\text{Output/Input} &= 20,000\,\text{rolls} \,@\, 0.05€/\text{roll} \div 1,000\,\text{kg flour} \,@\, 0.90€/\text{kg} \\ &= 1,000€ \div 900€ \\ &= 1.11\end{aligned}$$

Karina decides that is close enough to a ten percent increase in profitability.

**Questions**

- What are the risks in increasing prices?
- What are the risks of moving to a new supplier?
- If Karina had decided to use cheaper flour, how do you think the head baker might react?
- If cheaper, lower quality flour was used, this could mean lower prices. Do you think Karina should consider entering into a new market segment?

### 4.9.2 The Economic Principle

Consider the following situations. Which principles are being demonstrated?

1. A new version of a 40 in. television uses 15% less energy than the previous one did, while the picture remains as bright and colourful.

2. A large steel producing company is selling steel on foreign markets at a price much lower than its own costs and is sustaining huge losses.
3. Karina, from the previous exercise, found a way to increase output simply by changing the workflow in the kitchen. No costs were incurred and production increased by 4%.
4. An office cleaning company finds that it can reduce the amount of cleaning materials and hygiene products it uses by 7.5% and yet clean to the same standard—customers are still satisfied.

**Solution**

1. The case demonstrates the principle of minimum means.
2. The economic principle is not being followed in this situation.
3. Here a case of the principle of maximum result.
4. The case also demonstrates the principle of minimum means.

### 4.9.3 Determining Profitability

**Situation**
Referenz is a German producer of industrial robots. The following are some basic financial data from 2016 (€ million):

| | |
|---|---|
| Sales revenues | 195 |
| Operating expenses | 150 |
| Operating profit | 45 |
| Profit (net income) | 11 |
| Equity | 45 |

What is the return on equity and return on sales? What is Referenz' economic efficiency?

**Solution**

$$\textit{Return on capital} = \frac{\textit{Profit}}{\textit{Captial}} \times 100$$
$$= 11 \text{ million euros} \div 45 \text{ million euros} \times 100$$
$$= 24.4\%$$

$$\textit{Return on sales} = \frac{\textit{Profit}}{\textit{Sales revenues}} \times 100$$
$$= 11 \text{ million euros} \div 195 \text{ million euros} \times 100$$
$$= 5.64\%$$

$$\begin{aligned} Economic\ efficiency &= \frac{Operational\ income}{Operational\ expenses} \times 100 \\ &= 45\ \text{million euros} \div 150\ \text{million euros} \times 100 \\ &= 30\% \end{aligned}$$

Such results cannot be viewed in isolation. Comparisons must be made against past performance and competitors.

### 4.9.4 MyCompany Project

As your business starts, you need to think about what your goals and objectives are, and the meaning of your actions as a cafe owner.

- What are your substantive goals?
- You will definitely have financial goals—what are they? Have they to do with growth, profit, costs?

You will also need to think about your basic approach. Maximum result or minimum means? Let's assume you'll follow the principle of maximum result.

- Does this mean that you will work your employees as hard as possible?
- Would you want to invest in a lot of machines?
- Would you use non-organic milk if it were cheaper? And if no one knew? Explain.
- Apart from economic efficiency, which non-economic characteristics are important for you? How would you measure them?
- Would you rather be economically efficient and unprofitable or economically inefficient and profitable? Why? Can you think of any situation where the first of these two options might make sense? (Hint: think about the fact that you are starting a new business.)

### 4.9.5 Self-Test Questions

– *What is the relationship between economic and metaeconomic rationality?*
– *What themes does behavioural economics investigate?*
– *What is the relationship between objective and means?*
– *How can efficiency be defined and what different types of efficiency exist?*
– *What are the principle of maximum result and the principle of minimum means?*
– *How can effectiveness be measured?*
– *What factors must be considered in order to draw conclusions about the effectiveness of measures?*
– *What is the difference between effectiveness and efficiency related to each other?*

- *What are economic efficiency, efficiency and effectiveness?*
- *How are profitability and economic efficiency connected?*
- *What is the difference between outcomes and impacts?*
- *What does the principle of solidarity say?*
- *What is of the greatest importance in a market economy?*
- *What is the principle of equivalence*?