

The process and basic steps in setting regulated tariffs: an overview

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Content of the presentation

- Financial analysis of regulated activities
- Annual Financial Statement (accounting report)
- Financial ratios
- Main principles of tariff regulation
- 0. step: Building the market model
- 1. step: Calculating the revenue requirement
- 2. step: Forecasting the quantities
- 3. step: Adjustments during the price regulation period

Financial analysis of regulated activities

Within the task „price regulation” or „tariff setting” one of the most important regulatory duty is the **financial analysis** of the regulated firms (activities).

It has three main goals:

- Collection of information (input data) for tariff-setting.
- Control and feedback of existing tariffs (support of „on the run” price regulation: X-factor, profit cap, individual cost review etc.).
- Possession of up-to-date data for ongoing issues (debates with firms, questions of politicians and/or consumers, publications).

Annual Financial Statement

Basic data source for financial analysis is the **Financial Statement (annual report)** of the regulated companies.

Parts of Financial Statement are:

- **Balance sheet:** statement of the book value of the company at a particular date (end of the fiscal year).

The only statement which applies to a single point in time, instead of a period of time (also called „snapshot” of the company’s financial condition).

Classifies company’s worth in two ways: according to time of use (current or fixed assets) and way of finance (shareholders’ equity and liabilities).

$$\text{Total assets} = \text{Shareholders' Equity} + \text{Liabilities}$$

Annual Financial Statement

Balance sheet of DEMASZ as on 31 December 2005 (million HUF)

| <i>Assets</i> | 31/12/2004 | 31/12/2005 | <i>Liabilities and equity</i> | 31/12/2004 | 31/12/2005 |
|-------------------------|---------------|---------------|-------------------------------------|---------------|---------------|
| Fixed assets | 65 976 | 67 805 | Equity | 44 518 | 45 160 |
| Current assets | 7 547 | 7 588 | Provisions | 547 | 1 186 |
| inventories | 617 | 364 | Liabilities | 23 036 | 22 878 |
| account receivable | 6 147 | 6 726 | Long-term | 5 353 | 5 303 |
| securities | 62 | 2 | Short-term | 17 683 | 17 576 |
| liquid assets | 720 | 497 | | | |
| Prepaid expenses | 4 535 | 4 394 | Accrued expenses | 9 956 | 10 563 |
| TOTAL ASSETS | 78 058 | 79 787 | TOTAL LIABILITIES AND EQUITY | 78 058 | 79 787 |

Annual Financial Statement

Parts of Financial Statement are (2):

- **Income statement** (profit and loss account – P&L): records revenues and expenses over a specified period of time (usually a year).

It indicates how the revenue is transformed into the net income (result after all revenues and expenses have been accounted for).

P&L is a non-cash approach of reporting company's result.

Annual Financial Statement

First part of the DEMASZ' Income statement, year 2005, million HUF

| Revenues and expenditures | 2004 | 2005 |
|---------------------------|--------------|--------------|
| Total sales | 81 593 | 83 876 |
| Other revenues | 1 806 | 1 691 |
| Cost of material | 61 723 | 62 999 |
| Personnel expenses | 5 822 | 6 157 |
| Depreciation | 7 532 | 7 741 |
| Other expenses | 2 001 | 2 623 |
| <i>Operating profit</i> | <i>6 321</i> | <i>6 047</i> |

Annual Financial Statement

Parts of Financial Statement are (3):

- **Cash-flow (CF) statement:** refers to the amounts of cash being received and spent during a defined period of time (usually a year).

It is used to determine problems with liquidity. Shortage of cash can happen even while company is profitable (and inversely)!

Operational CF: result of the company's core business.

Investment CF: result of investments and acquisitions.

Financing CF: result of financial activities (receiving or paying loans, issuing stock, paying dividends etc.)

Annual Financial Statement

Parts of Financial Statement are (4):

- **Notes to the financial statement:** additional part of the Financial Statement to supplement the reader with more detailed information.

It includes contextual information explaining the financial numbers.

Do not throw away the Notes just because it takes a lot of time to look through! Often this is the only document which helps to understand what is behind the figures!

Annual Financial Statement

Why is Financial Statement (FS) useful for regulation?

- FS is prepared in accordance with general, by law enacted accounting rules. Thus reports of different companies are comparable.
- FS is audited by accountants.
- FS is not made expressly for the regulator, annual report can be regarded as real and reliable publication.
- Publicly available for everybody who is interested in the financial performance of the company.
- FS discloses overall picture on economic performance of the companies.

Annual Financial Statement

What are the problems with the Financial Statement?

- Within general accounting rules companies are free to evaluate their assets and liabilities (accounting policies). Thus comparability is limited.
- FS refers to the whole, usually vertically integrated company, regulated activities are not separated.
- FS is prepared and published once a year.
- Regulator's price regulation policies are not in line with companies' internal accounting policies (problem of reasonable costs and assets).

Annual Financial Statement

Solution could be...

- Financial Statement is appropriate for continuous economic monitoring, and – as a starting point – for price regulation as well.
- Legal and accounting unbundling of different businesses.
- Lack of legal unbundling obligatory accounting unbundling rules issued by the regulator (eg. accounting unbundling directive).
- More frequent data supply on economical data of regulated businesses (eg. quarterly P&L account).
- In case of stock exchange-quoted companies collecting the short reports (stock exchange rules are very strict).

Financial ratios

It is typical to use ratios to analyze Financial Statements. **Financial ratios** are formed from two or more numbers taken from the Balance sheet or the Income statement.

They are used also by debt issuers (for analysing credit risk), business insiders (for evaluating a project) or stock pickers (for analysing past, and predicting future performance).

The ratios allow for comparisons between:

- companies or departments,
- industries,
- different time periods of one company (trend analysis),
- company and the industry average.

Financial ratios

Return On Assets (ROA) = Operating profit/Total assets

An indicator how profitable a company (activity) is.

Debt to Equity ratio (D/E) = Liabilities/Equity

Shows relative proportion of equity and debt used to finance a company's assets.

Current ratio = Current assets/Current liabilities

An indication of a firm's market liquidity and ability to meet short-term debt obligations (between 1 and 1,5 is considered standard).

Quick ratio = (Current assets – Inventory)/Current liabilities

Measures the ability to use its quick assets to immediately extinguish its current liabilities. Ideally the ratio is 1:1.

Financial ratios

Lessons on financial ratios

- It is a subjective decision which ratio (and how) will be used.
- The choice between different ratios depends of the aim of the analysis.
- You must know the expected ratio value for the analyzed industry. There are not in any case valid values!
- Ratio analysis is just the first step to have a clear picture on industry (company) economic performance. After calculating the ratios, it is necessary to look behind the figures to understand what and why happened.

Main principles of tariff regulation

- **Prices should not endanger financial viability of regulated companies.** *All justified costs must be covered, including opportunity cost of capital assets.*
- **Price regulation should stimulate more efficient functioning.** *Productive and allocative efficiency are also aimed – incentive price regulation.*
- **Price regulation should be transparent and consistent.**
Simplicity of price structures can establish trust the regulation.
- **Frequent and unexpected interventions should be avoided.**
Regulators are always in an imperfectly informed position.

0. step: Building the market model

- Get to know the market – be in the picture!
- What do you want to regulate? Why? For how long?
- Create the market model and a suitable price regulation methodology!
- Discuss and put in in writing – level the playing field!
- Start to work (or have it worked by somebody) now!

1. step: Calculating the revenue requirement (1)

Revenue Requirement (RR) is revenue (profit) and cost at the same time (firms vs. consumers).

Calculating RR is usually the first step of each well-known price regulation methodology (**Rate of Return (RoR) methodology**, also known as cost-plus (or cost of service) regulation, Incentive Price Regulation methods etc).

The main idea is that revenues of the regulated companies have to cover their operating expenses, taxes and depreciation, and have to ensure a fair rate of return (profit) on assets utilized.

1. step: Calculating the revenue requirement (2)

Typical formula of RR is the following:

$$\mathbf{RR = O + D + T + r * B}$$

where

RR = Revenue Requirement

O = Operating Expenses

D = Depreciation

T = Taxes

r = allowed rate of return

B = rate base (or regulatory asset base – RAB)

For calculating RR, all elements of the formula have to be collected by the regulator (detailed cost and asset reviews).

2. step: Forecasting the quantities (1)

After having „the numerator”, we need „the denominator”!

(average) tariff (price) = revenue/quantity

„Aggravating circumstances”:

- fix and variable cost elements
- future wheater conditions
- generation portfolio, cross-border trade
- structure of consumption (uniform vs. regional tariffs)
- historic data and growth (decrease) expectations
- information asymmetry

2. step: Forecasting the quantities (2)

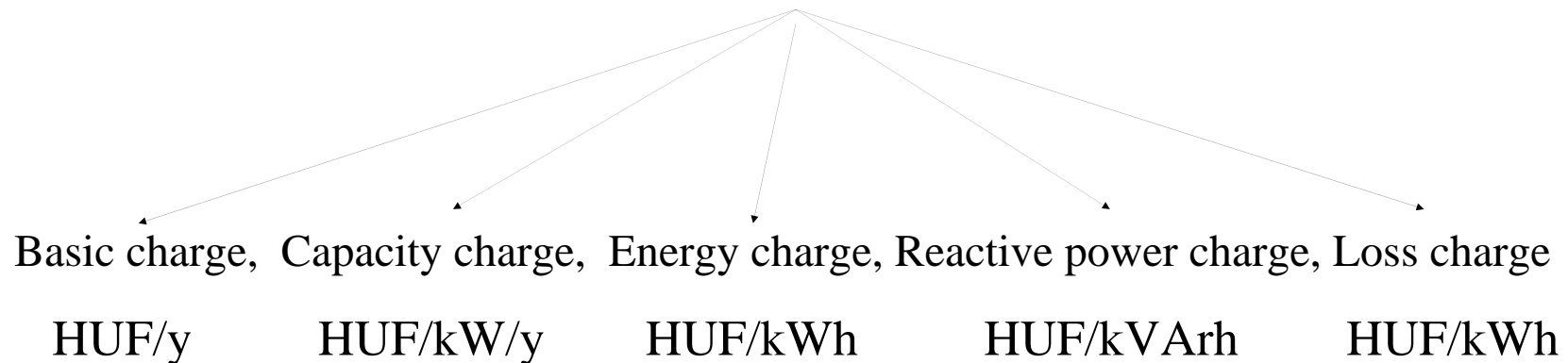
Example: Allocation of distribution costs to voltage levels

| Cost centre | HVL cost proportion | HVL/MVL cost proportion | MVL cost proportion | LVL cost proportion |
|-----------------------------------------|---------------------|-------------------------|---------------------|---------------------|
| | 8% | 18% | 24% | 50% |
| Distribution of electricity flowing out | 60% | 71% | 76% | 100% |
| | 22% | 26% | 24% | |
| | 3% | 3% | | |
| | 15% | | | |
| | | | | |
| Cost bearer | 1,3% | 0,9% | 12,6% | 85,2% |

2. step: Forecasting the quantities (3)

Example: Distribution tariff structure (Hungary)

Distribution charges (given voltage level)



3. step: Adjustments

- Starting tariffs
- Length of the price regulation period (regulatory lag)
- „Normal” adjustments (no surprise for market players)
 - Quality incentives
 - Sharing the benefits
 - Pass-through elements
- „On the run” corrections (surprise and future impact)
 - Individual cost reviews (new investments)
 - Something went wrong (TOP contracts, social tariffs etc)

**AND NOW YOU CAN START AGAIN WITH A NEW PRICE
REGULATION PERIOD!**

Thank you for your attention!

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