QUANTITATIVE EXPRESSION OF PROPOSED PRICE CONTROL MODEL OF CZECH POST

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1 Introduction

This paper is de facto continuation of paper "Proposal of the Effective Price Control of Czech Post." presented on the 5-th International Conference for Postgraduate Students and Young Research and Science Workers PERNER'S CONTACT 2004, where were defined basic principles of proposed price control model of Czech Post.

This paper describes specific creation of proposed model, which is in compliance with the general principles defined in above mentioned paper.

2 Proposed price control model of Czech Post

Proposed price control of Czech Post is based on price-cap control with tariff formula RPI-X, with coverage according to the result of the competitive environment test and with two years control period.

Initial is for this method of price control dismemberment of controlled services into so-called price baskets, namely:

a) letter items and valuable letter items including their complementary services,
b) parcels including their complementary services,
c) postal orders including their complementary services,
d) other obligatory services.

Each of these tariff baskets is extra monitored, and so there would not exist any cross subsidies among them, i. e. each of these price baskets fully covers his allocated costs.

Price regulation within baskets *a, b, c* has to meet these fundamentals:

- regulation has to take into account total price of the tariff basket,
- regulation has to take into account input changes,
- price changes will be realized in ahead defined dates.

Tariff baskets and their price-caps

As a matter of fact National regulation authority (below NRA) defines for each basket individual price-cap based on estimated revenues from it. So the Czech Post management has full competency to set prices for particular weight step of items (based on its marketing experience) and their interrelated services in particular basket. There is possibility to define one fixed price (if needed), for example for letter item up to 20 g. So the management won`t be allowed to ensure for itself as high revenue from the most common weight step (20 g) of particular basket, that the management won`t be forced to do any active price policy in other weight steps of particular tariff basket.

Price regulation within tariff basket *d* will be enforced only if needed and the form will be the maximum prices.

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Each of tariff baskets *a, b, c* involve all particular services and the frequency of individual services in the basket responds the real frequency during the period of one year.

Calculation principles of price-cap and periodicity of its setting

It is necessary to calculate the level of price-cap for the expected reality in the half of the period, when the price-cap is in force, i.e. there is necessity to estimate (based on the development in the past) rate of inflation and further relevant characteristics similarly as the price-cap would be defined in the half of the period. That way the Czech Post has the benefit in the first half of the control period when it profits from the difference between the inflation and the value of other characteristics at the beginning of the period and halfway, whereas in the second half of the period the Czech Post is emasculated. So the motivation of this price-cap method lies in the fact, that there is a scope for the management of Czech Post to mobilize its activities (Czech Post has higher revenues without any effort in the first half of the period) to do some rationalization actions, to increase labour productivity (etc.) in order to be able to get profit in the second half of the period too. So it means that the acquired company`s profit even creates the scope for the price reduction.

This method doesn`t exclude cancellation of already set price-cap in case of extreme inflation accumulation and set the new one within the same principles.

Calculation of the price-cap

The base is to set initial price-cap of tariff basket P_0 on the basis of Czech Post cost calculation of individual services included in relevant basket. At first it is useful to do an audit by independent auditorial company, which would investigate both objective affiliation of common costs to individual regulated and unregulated services and justifiability of showed costs. The audit should assure fair-minded setting of above mentioned initial price-cap.

At two year intervals will be this initial price-cap P_0 of individual tariff baskets verified by tariff formula (1).

The new total price of individual tariff basket (there is a basket of letter items as a model in this paper) within the Czech Republic postal sector is established this way:

$$P_1 = P_0 * (I_i - X) \tag{1}$$

where

$$I_i = (a_{sc} * I_{sc}) + (a_{cops} * I_{cops}) + (a_{cpv} * I_{cpv}) + (a_{ct} * I_{ct}) + (a_{cvnd} * I_{cvnd}) + (a_{cpo} * I_{cpo}) + a_0 \tag{2}$$

P_0 – original price of tariff basket,

P_1 – new price of tariff basket,

X – decision-making factor – range from 0 to 0,04,

I_i – input inflation index,

I_{sc} – customer price index,

I_{cops} – other business services price index,

I_{cpv} – industrial producer price index,

I_{ct} – telecommunication price index,

I_{cvnd} – domestic freight transport price index,

I_{cpo} – insurance price index,

a_{sc} – take of personal costs on total costs,

a_{cops} – take of costs on other business services on total costs,

a_{cpv} – take of costs of purchase from industrial producer on total costs,

a_{ct} – take of costs of telecommunication services purchase on total costs,

a_{cvnd} – take of costs of transport services purchase from external companies on total costs,

a_{cpo} – take of costs of car and property insurance on total costs,

a_0 – take of costs exempt from inflation on total costs.

NRA fix the level of decision-making factor X in particular on bases of judgment of investment necessary and possibility of its funding by productivity increase. Its (factor X) allowed range should be between 0 and 4 % (for two years period), which is in compliance with the range of analogical factor used in formula for telecommunication sector. This factor motivates company to increase demand for its services, which is crucial for setting prices in the postal sector.

Price increase means transmission of inflation impact to relevant inputs, which is evident from equation 1 and 2. Inflation impact is specified by way of weighted average of inflation index of individual cost group.

Construction of input inflation index I_i goes out from the thought take a development of relevant costs of Czech Post into account, which has crucial impact on resulting price of regulated postal services.

Dynamic and transparent relevant costs monitoring is ensured by linking individual cost groups to accessible price indices, i.e. to suitable price indices monitored by Czech statistical office (next CSO).

At first we have to set the costs (respective cost groups), which have significant impact on resulting price of regulated postal services. These cost groups are set based on analysis of economic activity statement of Czech Post and price indices (monitored by CSO) judgment. Then the cost groups are linked to selected CSO monitored price indices.

Personal costs are the most important expense item, which has significant impact on resulting price (more than 60 % portion on total costs), which is evident from character of postal services. Personal costs are then linked to customer price index I_{sc}

Other costs that have crucial impact on resulting price of regulated postal services (in compliance with classification and contents of CSO price indices) are:

- costs on other business services,
- costs of purchase from industrial producer,
- costs of telecommunication services purchase,
- costs of transport services purchase from external companies,
- costs of car and property insurance,
- costs exempt from inflation.

These cost groups are linked to undermentioned price indices:

- customer price index,
- other business services price index,
- industrial producer price index,
- telecommunication price index,
- domestic freight transport price index,
- insurance price index.

The calculation of coefficients a_{sc}, a_{cops}, a_{cpv}, a_{ct}, a_{cvnd}, a_{cpo}, a_0, (coefficients reflect cost structure of Czech Post) comes out from the Czech Post last 12 months expense data (economic activity statement). The calculation of indices I_{sc}, I_{cops}, I_{cpv}, I_{ct}, I_{cvnd}, I_{cpo} respective calculation of their average values in determined period goes out from time series of individual price indices monitored by CSO.

Detailed description of these values calculating as well as real values of input inflation index I_i for hypothetical control period (from 1. 6. 2001 to 31. 5. 2003) and hypothetical control period (from 1. 1. 2004 to 31. 12. 2005) are mentioned in my dissertation (Specific aspects of management in postal sector). These hypothetical control periods were chosen

because of possibility to both compare real development of prices of the Czech Post regulated services with the price development according to proposed model (from 1. 6. 2001 to 31. 5. 2003) and set the maximum allowed price increase of tariff basket (letter items) for current period (from 1. 1. 2004 to 31. 12. 2005).

3   Conclusion

The calculated price increase of tariff basket (letter items) was evidently under the level of real price increase of these regulated services within the control period from 1. 6. 2001 to 31. 5. 2003, which just goes to show missing linkage of current Czech Post price control with costs.

There should be maximum allowed price increase of tariff basket (letter items) in proposed price control model of mine, which is given by value of input inflation index $I_i = 1,057$, respective its range (1,031 – 1,082), by properly stated factor X (for example 1 %) and possibly (in future) by relevant tax rate in the second hypothetic control period.

At the end it is evident, that proposed price control model based on the objective data input is in so far transparent as opposed to the current price control system, that the regulated company will not lie at the mercy of NRA and his political-price plans like so far.

Summary

The paper concretizes the principles of effective price control of Czech Post defined in the paper "Proposal of the Effective Price Control of Czech Post" presented on PERNER'S CONTACT 2004. This paper describes proposed model of price control outgoing from price-cap and tariff formula RPI-X and concentrates on its quantitative expression. Application of proposed model is carried out both for hypothetical period in past (in order to compare with the current control system) and for current control period in order to set relevant maximum price increase of regulated tariff basket (letter items).

LITERATURE:

[1] GARAJ, V. *Econometric simulation.* Bratislava: Economic University in Bratislava, 1992. ISBN 80-225-0458-0.

[2] GIULIETTI, M.; PRICE, C.W. *Incentive Regulation and Efficient Pricing: Empirical Evidence* [online]. Coventry: Centre for Management under Regulation, Warwick Business School, 2000, no.00/2. [cit. 2003-02-12]. Dostupné z:<http://users.wbs. warwick.ac.uk/cmur/publications/research_papers.htm#2000>. ISSN 1369-0450.

[3] KROUŽECKÝ, V;.; ŠVADLENKA L. *Marketing in postal sector.* First edition. Pardubice: University of Pardubice, 2002. 89 s. ISBN 80-7194-427-0.

Research and assessment reports:

[4] *Price Control Review for Consignia plc* [online]. Postcomm. 2001. [cit. 2003-10-28]. Dostupné z:<http://www.psc.gov.uk/index2.html>.

[5] SCHWARZ-SCHILLING, C. et. al. Pricing Schemes in Liberalized Postal Markets. In *Competition and Universal Servise in the Postal Sector.* [online] Second conference. Toulouse, December 6-7, 2001. Dostupné z: <http://www.idei.asso.fr/Commun/ Conferences/Autres%20Conf/Decembre2001/Papers/schwarz-S.pdf>.

[6] *Response to Postcomm`s consultation document "Review of Consignia plc`s Price and Service Quality Regulation".* [online]. Royal Mail, 2002. [cit. 2003-09-17]. Dostupné z: <http://www.psc.gov.uk/ index2.html>.

[7] *Response to the February 2003 Consultation Paper "Review of Royal Mail Group plc`s Price and Service Quality Regulation".* [online]. Age Concern, Postwatch, Royal Mail, 2003. [cit. 2003-09-17]. Dostupné z:<http://www.psc.gov.uk/ index2.html>.

[8] *Review of Royal Mail Group plc`s Price and Service Quality Regulation.* [online]. Postcomm, 2003. [cit. 2003-09-17]. Dostupné z: <http://www.psc.gov.uk/ index2.html>.

Legal norms:

[9] Act n. 29/2000 Sb., about postal services and changes of certain acts.

[10] Notice n. 28/2001 Sb., about basic services of postal licence holder.

[11] Act n. 526/1990 Sb. about prices as amended.

[12] Directive 97/67/EC of the European Parliament and of the Council of 15 December 1997 on common rules for the development of the internal market of Community postal services and the improvement of quality of service.

Materials of Czech Post

Czech Post annual report 1993, 1999, 2000, 2001.