

Report on Dissertation
“Essays on Quality Assurance Mechanisms”
by Jan Mysliveček

Under the assumption that consumers are not able to observe the quality of goods they buy, it is necessary to have some objective mechanisms, on the basis of which the quality can be estimated. The author analyzes and compares the performance of two widely used quality assurance mechanisms. The first one consists in a certification process, i.e. the producers ask an organization (a certifier) to test their products and issue – in case that the product after having been tested meets the required quality standard – a quality certificate. The certifier collects a fee for the certification procedure he carried out. The second mechanism consists in certain self-regulation process. In this case, the producers form a club, which sets standards the products should meet and the consumer obtains information that the product meets the standards established by the corresponding club. This is usually done by providing the product with a label, which informs the consumer that the producer is a member of the corresponding club, which entitles him to provide his products with the label as a confirmation that the club's quality standards are met.

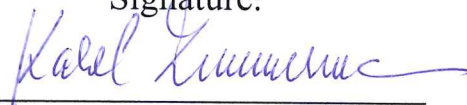
The dissertation is divided on three chapters. The first chapter is devoted to comparing the certification and self-regulation procedure from a theoretical point of view. Unlike to former partial results known from the literature, the complete theoretical analysis results in author's conclusion that under certain equilibrium assumptions the self-regulation may lead to the same standards as the certification. Since in case of self-regulation, it is necessary to investigate the labeling scheme used. This is done in Chapter 2 of the dissertation, which is a joint work with Tomáš Konečný. The study is called “Fair Trade Labeling Scheme”. The study was motivated by the situation on coffee market, where the certificate commodity is coffee and producers are farmers (mostly from developing countries). However, the formal mathematically based model proposed by the authors has evidently a wider validity and applicability. Another problem connected with the certification procedure is considered in the third chapter of the dissertation. This problem was motivated by a situation, which occurs on the markets with so called bio-products (or “organic” products). There is usually a large number of competing certifiers of such products and the consumer is unable to establish their reputation or reliability of the corresponding certificates. Using a formalized mathematical model, the author shows that such situation may not be profitable for consumers. Although the competition forces the certifiers to collect lower certification fees, which results in lower price of the corresponding bio-products, it may lead at the same time to a lower quality (or reliability) of the certification procedure. On the other hand, the author admits, that a monopolistic position of a certifier may lead to a hard and reliable certification, but undesirably high prices if the bio-products on the

market. The author proposes therefore certain compromise solution between the two extremes. This is again based on a mathematical model with a wider applicability.

I have no substantial remarks or objections to the thesis in its presented form. Some misprints were marked directly in the text. Some further remarks and comments, which may serve to improving argumentations, are attached in the list below. The remarks and comments were discussed directly with the author and taken by him into account. The presented thesis contains new results concerning the comparison of certification and self-regulation procedure in evaluating the quality of products, which may serve to improving this process in real world situations. Therefore, I conclude that the dissertation presented by Jan Mysliveček can be accepted for the PhD-defense procedure at CERGE.

Prague , October 24, 2008.

Signature:



(Karel Zimmermann)

List of remarks and comments to the dissertation.

p. 6

It should be explained why the costs expressed by function g is assumed to be convex in its variables and what q is from the mathematical point of view (a real number, integer, vector?). How can we obtain q in a concrete situation?

p. 7

It should be mentioned that U is supposed to be a utility function with certain properties, which make possible further operations with it.

p. 9

Explain why the first order condition in the 4th row from the bottom of the page gives the maximum. What represents parameter q_s from the mathematical point of view (a vector, number, integer)?

p. 41

It should be mentioned that $\pi \in [0, 1]$.

p.42

Explain how parameter k can be obtained (estimated ?, subjectively determined?).

p. 79

It might be a problem if the certifier or supervisor is in a certain sense customer of those who are supposed to be certified or supervised.

p.84

Can you explain how measure s_h is defined? In this connection it can arise a question whether it is quite correct to define the probability s as the fraction of measures $s_h / (s_h + s_l)$.

p. 85

Note that the probability q as a quality parameter was introduced as the probability of the situation that the test fails, i.e. the higher is the probability q the worse is the performance of the test.

Further, if we have $(1 - q)p - f - s_h = 0$, then $s_h = (1 - q)p - f$, i.e. s_h is expressed in money units. Is it all right that the measure s_h is equal to a certain amount of money? Can't it happen that $(1 - q)p - f$ is negative if q is close to 1?

p. 92

It seems that the formula for the partial derivative of $(s_h + s_l)$ does not correspond with (3.5), (3.6) on page 87.

p. 99

The last equality on the page is incorrect.

Why the first order condition for Π^p gives the maximum? Is this function concave with respect to f ?

