

METHODS FOR QUANTIFYING THE COMPETITIVENESS OF EMERGING COUNTRIES IN TERMS OF PATERNALISTIC POLICIES

DANA CODRUȚA DUDĂ DĂIANU
“Aurel Vlaicu” University of Arad
cddaianu@yahoo.com

MARIA PIROI
Bucharest University of Economic Studies
m.piroi@groupconsulting.com

Abstract:

Aiming at paternalistic policies within the international economic relations as a factor of sustainable development of emerging economies by establishing new cooperation relations, exchange of experience and rising the population's standard of living through their impact at the social-economic development of emerging countries, we notice that a small number of researchers have tackled the given aspect of world economy, most of them focusing their attention on studying the problems from the protectionist perspective.

The purpose of the paper is the research and the perfection of the mechanism of paternalistic policies of emerging countries within the international economic cooperation, identification of ways of improving the production activities and of the domestic external economic relations.

Key words: *competitiveness, paternalistic policies, emerging countries*

JED Classification: O11, P47

Introduction

A rigorous definition of competitiveness is difficult or, probably, even impossible; this definition cannot be worded in a concise manner due to the various components – on a short, medium, long term – incumbent on it and to the numberless indicators by means of which it can be emphasized. In addition, competitive, successful firms themselves have different degrees of competitiveness and the sources of competitiveness are not always the same (Daniliuc C, 2013). A wide diversity of points of view and of perspectives from which competitiveness is approached is reflected in a rich literature, leaving behind the works of scholars such as: Krugman P.(2009), Lang L.(1994) from whom the following are worth mentioning: economic competitiveness expresses a complex and dynamic state and has various sources and facets; in essence, competitive firms are those where potential competitive advantages have turned into real ones; when in a certain area (industry or the relevant market) there are many competitive national firms, the respective country is deemed internationally competitive as well; competitiveness (internal and international) and the competitive advantage are originally microeconomic concepts and realities on which macroeconomic competitiveness and the national competitive advantage rest (Krugman P., Maurice O., 1994) in the last resort and in synthesis. The latter are conditioned by the state of the firm (company) system and of the macroeconomic business environment.

Hence, in synthesis, competitiveness is the capacity to cope with competition, being linked to a competition environment which is also given by the possibility to obtain performances as a result of the participation on the market (supplies, outlet, financial-monetary, work force etc.). In current language, being competitive means being at least as good as others. A firm is competitive when, due to the benefits it enjoys

(production factors, managerial and marketing capacities, financial, technical and creativity resources and so on), it obtains a sustainable advantage towards its competitors (as regards the cost, diversity, quality and renewal of the supply), ensuring normal dividends for its shareholders, resources for adequate self-funding and remuneration of the work force, correlated with productivity. In essence, competitiveness is linked to the firm's own, internal conditions, which express all the components and functions defining it. In a broader sense, competitiveness resides in the firm's capacity to face competition through merchandise appealing to the customers (through price, quality and diversity) while the economic performances remunerate the participants depending on the marginal productivity of the production factor they own. The latter is possible to the extent where the company has a competition advantage and whose assertion (on the national or international market) is rooted in the company's internal conditions which the competition environment may favor or inhibit.

From this perspective, we propose, in order to estimate competitiveness at micro level (as support for the macro one) to calculate the current competitiveness index (ICC), based mainly on estimates contained in opinion questionnaires and surveys answered by representative persons carrying out their activity in national companies, government officials, large exporters and representatives of multinational companies operating in the respective countries. When building the ICC, economists start from the premise that the efficiency in a company, synthesized in the productivity of all production factors involved, depends on: the complexity of operations and the company's strategies; the capacity to innovate and economic performances; the quality of the business environment (including that of the competition environment). From a financial point of view, company efficiency is synthesized in the mass and rate of profit which are dependent upon these circumstances. The issue of a national economy's competitiveness is extremely debatable in economic theory and practice. Leaving aside the numberless debates and the diversity of the criteria used, we consider that an economy is competitive if it increases its market share (especially the share of own exports in the international ones) thanks to its prices which have a slightly more favorable evolution compared to those of its competitors (so, it has a competitiveness, price and implicitly lower inflation) and through the quality, diversity and promptness of the merchandise offered.

The quality and the price of the merchandise are integral part of its competitiveness. The problem of establishing the quality of a product, of a service is constantly considered by manufacturers, consumers, scientific researchers. Generally, quality cannot always be established by consumers. In such cases, the quality of the merchandise and of the service is established by experts equipped with the respective techniques, with a wealth of experience, with technical, technological, medical knowledge etc. The quality of the merchandise and of the service can also be established with the aid of statistical methods (Maximilian S., 2009), with the aid of likelihood methods, by means of sophisticated methods of processing the data obtained from experts, by using technological methods of producing goods and services. When the quality of products, goods, services, merchandise plays a more and more important role in the consumers' lives, in the most diverse scientific, economic, commercial investigations etc. a method of quantifying quality accessible to a large number of experts is needed. The quality of the merchandise and of its prices becomes crucial in the competition processes on domestic and international markets.

Materials and methods

The quantification of the quality of a product, of a service may be performed with the aid of a string of qualities' "ratings". The quality of a product, a food product for instance, is characterized by a vector. Each component of this vector, in a

dependence relation to the respective weight, has a positive or negative impact on the quality level. The impact, as a resultant of qualitative factors, may be estimated by theoretically and scientifically equipped experts. The estimates of quality by experts shall not coincide. The issue of processing the experts' estimates of the product, service quality steps in (Daniliuc A. 2013).

To this end, we draft the ratings' function according to i criterion:

$$f(r_i) = \frac{r_i}{\sum_{i=1}^n r_i},$$

where, r_i – the rating of i product, service according to criterion $i = 1, 2, \dots, n$.

For each criterion we draft the function of the respective criterion's weight

$$\beta_i = C - f(r_i) = C - \frac{r_i}{\sum_{i=1}^n r_i}.$$

We condition the sum of all weights, which is

$$\sum_{i=1}^n \beta_i = n - 1, \text{ sau } \sum_{i=1}^n \left(C - \frac{r_i}{\sum_{i=1}^n r_i} \right) = n - 1; \quad nC - \frac{\sum_{i=1}^n r_i}{\sum_{i=1}^n r_i} = n - 1,$$

where $C=1$, The weights' function shall have.

$$\beta_i = 1 - \frac{1}{n(n+1)} \cdot r_i, \quad i = 1, 2, \dots, n.$$

Table 1. Rating weight of i criterion, $i = 1, 2, \dots, n$

Quality criterion	1	2	...	i	...	n
Criterion's rating	r_1	r_2	...	r_i	...	r_n
Criterion's weight	β_1	β_2	...	β_i	...	β_n

The expert of each i criterion, $i = 1, 2, \dots, n$ assigns a rating to it, based on which the respective weight is calculated (table 1.).

We assume that the quality of the product, service is established according to 5 criteria.

The formula for establishing the weights of each criterion according to the rating established by the expert shall be $1 - \frac{1}{15} \cdot r_i$, $\beta_i = \frac{15}{15} - \frac{r_i}{15}$ for $r_i=1;2;3;4;5$, β_i shall be respectively $\frac{14}{15}, \frac{13}{15}, \frac{12}{15}, \frac{11}{15}, \frac{10}{15}$.

The quality of the product, service is limited according to n criteria by m experts (table 2.). The quantitative expression of the product, service quality by experts is very debatable. In this context, the number (scale) expressing quality according to i criterion, $i = 1, 2, \dots, n$ can be substituted with a function which establishes the quality level in a dependence relation to the criterion's rating namely $\beta_i = K(i - 1) + \beta_1$.

We establish the value of K constant from the following condition

$$\sum_{i=1}^n \beta_i = \sum_{i=1}^n (K(i - 1) + \beta_1) = \frac{n(n - 1)}{2}$$

$$K \cdot \frac{n(n-1)}{2} + n\beta_1 = \frac{n(n-1)}{2}$$

$$(n-1)K + 2\beta_1 = n-1 \text{ wherefrom } K = 1 - \frac{2\beta_1}{n-1}$$

The function of i criterion's weight shall be:

$$\beta_i = \left(1 - \frac{2\beta_1}{n-1}\right)(i-1) + \beta_1, \quad i = 1, 2, \dots, n;$$

or

$$\beta_i = (i-1) + \beta_1 \cdot \frac{n-1-2(i-1)}{(n-1)}, \quad i = 1, 2, \dots, n$$

Establishing the quality level of a product, service is a problem even for the most experimented and equipped experts. In this context, the methods proposed in table 2 are a priority: the expert cannot establish the quality level, but this is not necessary; the expert has to put the products in a certain order, in decreasing order for instance, according to the quality level: the expert puts on the first place the product which, according to him, is the best; on the second place he puts the following product etc. The order in which the expert puts the products is the rating.

Quality is expressed through these ratings. The increase in the number of experts contributes to the increase in the trustworthiness of the quality established by them. A product is good not because it is "good", but because it was put in the quality string on the 1st, 2nd ... place. This is a relative estimation of quality.

Table 2. The arithmetic mean of the weight of quality's criteria

Quality criterion	1	2	...	i	...	n
The rating, the weight of quality criterion offered by expert 1	r ₁₁ β ₁₁	r ₁₂ β ₁₂	...	r _{1i} β _{1i}	...	r _{1n} β _{1n}
The rating, the weight of quality criterion offered by expert 2	r ₂₁ β ₂₁	r ₂₂ β ₂₂	...	r _{2i} β _{2i}	...	r _{2n} β _{2n}
...
The rating, the weight of quality criterion offered by expert j	r _{j1}	r _{j2}	...	r _{ji}	...	r _{jn}
...
The rating, the weight of quality criterion offered by expert m	r _{m1}	r _{m2}	...	r _{m1}	...	r _{mn}
...
Arithmetic mean of the criterion's weight	$1 - \frac{\frac{1}{m} \sum_{j=1}^m r_{j1}}{n(n+1)}$ 2	$1 - \frac{\frac{1}{m} \sum_{j=1}^m r_{j2}}{n(n+1)}$ 2	...	$1 - \frac{\frac{1}{m} \sum_{j=1}^m r_{ji}}{n(n+1)}$ 2	...	$1 - \frac{\frac{1}{m} \sum_{j=1}^m r_{jn}}{n(n+1)}$ 2

Results and discussion

For agricultural producers, not only the quantitative aspect is important, but also labor productivity, cutting production costs as well as the quality of products (Popa, H.L., 2011). Success in the processes of selling products is broadly influenced by two parameters: prices and quality. The competitiveness of the firm depends on the

competitiveness of the firm's products and not the other way round. Generally, under market conditions the buyer cannot establish the quality of the respective merchandise. Thus, the buyer resorts to correlating the quality of the respective product with the firm's "brand".

So, the competitiveness of the merchandise influences the competitiveness of the firms and the other way round. The agricultural producer carries out or not its productive activity depending on the market demand and supply for the respective product. To this end, decisions are based (must be based) on the following algorithm: the farmer uses his own, current, available piece of information; in addition, he studies the information on the market; he identifies the potential product; he tests the product's importance from the point of view of the prospective consumer; the final identification of the competitive product; the identified product is subjected to reiterated analysis; he compares the price, the quality of the domestic product with the respective parameters of the similar product which is imported; the identified product is subjected to analysis: it is competitive or not; if the case is "affirmative", the farmer shall carry out the respective activity; if the case is "negative", the farmer chooses another product which shall be subjected to the chain analysis.

An important role in the producer's calculations is played by the "competitiveness" category. In this context, there is a need to quantify the level of domestic merchandise, services competitiveness compared to similar merchandise which is imported. Merchandise and service competitiveness depends on the price (P) level, quality (C) level. Let's examine the competitiveness of merchandise, services on the external market, where we can find domestic as well as imported merchandise and services. We write down the prices of the domestic, imported merchandise respectively by the level of qualities – by P_{ia} ; P_i , C_{ia} , C_i . The competitiveness of domestic merchandise and services on the domestic market is in inverse dependence with the prices of domestic merchandise and services and in direct dependence with the quality level thereof. In other words, domestic merchandise and services are competitive on the domestic market if their prices are lower than the prices of similar imported merchandise and if their qualities are higher.

So, the function of the competitiveness level, as argument, shall have the ratios $\frac{P_i}{P_{ia}}$ – whenever the price of the imported merchandise (service) i , $i = 1, 2, \dots, m$ is higher than the price of the domestic merchandise; $\frac{C_{ia}}{C_i}$ - whenever the quality of the domestic merchandise is higher than the quality of the imported merchandise and services. The function of competitiveness depends on the above mentioned ratios. The modification of prices P_{ia} , P_i , the level of qualities C_{ia} and C_i generate the modifications of competitiveness function. In order to quantitatively estimate these modifications, we shall use a simple method of dividing the whole (competitiveness) into parts. The parts $\frac{P_i}{P_{ia}}$ and $\frac{C_{ia}}{C_i}$ shall be interpreted as legs of a rectangular triangle with hypotenuse

$$\sqrt{\left(\frac{P_i}{P_{ia}}\right)^2 + \left(\frac{C_{ia}}{C_i}\right)^2}$$

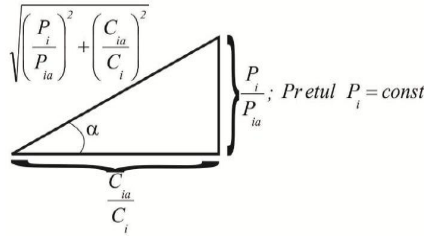


Fig. 1. Interpretation of the competitiveness level

Competitiveness can be expressed by function

$$f_i(P_{ia}, C_i, C_{ia}) = \sqrt{\left(\frac{P_i}{P_{ia}}\right)^2 + \left(\frac{C_{ia}}{C_i}\right)^2};$$

The contribution of $\frac{P_i}{P_{ia}}$ ratio to the increase (decrease) of the competitiveness of the domestic merchandise

$i, i = 1, 2, \dots, m$ represents

$$\varphi_i = \frac{\frac{P_i}{P_{ia}}}{\sqrt{\left(\frac{P_i}{P_{ia}}\right)^2 + \left(\frac{C_{ia}}{C_i}\right)^2}} \quad i = 1, 2, \dots, m; \text{ the contribution of } \frac{C_{ia}}{C_i} \text{ ratio}$$

$$\Psi_i = \frac{\frac{C_{ia}}{C_i}}{\sqrt{\left(\frac{P_i}{P_{ia}}\right)^2 + \left(\frac{C_{ia}}{C_i}\right)^2}} \quad i = 1, 2, \dots, m$$

Competitiveness can be quantified with the function $f(P_{ia}, C_{ia}, C_i)$. The increase or the decrease of arguments P_{ia}, C_{ia}, C_i generates certain modifications.

At 1% decrease of the quality of domestic merchandise (C_{ia}), competitiveness shall increase by:

$$\frac{\left(\frac{C_{ia}}{C_i}\right)^2}{\left(\frac{P_i}{P_{ia}}\right)^2 + \left(\frac{C_{ia}}{C_i}\right)^2} \cdot 100\%$$

Establishing the resilience of the function of domestic merchandise and service competitiveness on the domestic market allows the domestic producer to be able to channel his efforts in a rational manner: upon quantitative increase; upon qualitative increase; upon mixed increases, in such a way that the products of domestic merchandise can be competitive on the domestic market. In the context of an open economy, this aspect is extremely important for the national economy.

It must be emphasized that, if the quality of products, goods, services and merchandise plays a more and more important role in consumers' life, more and more attention is paid to various investigations: scientific, economic, commercial etc. A method of quantifying quality accessible to a large number of experts is needed. Success

in the processes of selling products is broadly influenced by two parameters: prices and quality. Domestic merchandise and services are competitive on the domestic market if their prices are lower than the prices of similar imported merchandise and their qualities are higher.

The market strengthens economy, freeing it from unprofitable and uncompetitive producers, stimulates progress, the efficacy of production, the high level of manufactured production, competitiveness (Zoiçaș-Ienciu A. 2006).

Conclusions

In the given compartment, the author proposed the example of the method of calculating the size of the support granted and the efficient allotment thereof, based on which were proposed the full results of the optimum allotment of financial means between agricultural areas, which, in the author's opinion, can be useful to the leadership of emerging countries for solving a great deal of problems with respect to the optimum allotment of financial means between the respective areas of agriculture. It was also proposed to establish the resilience of the function of domestic merchandise and service competitiveness on the domestic market.

So, agricultural technologies and machinery from the Republic of Moldova can be refurbished with performing, modern technologies, can be the technologies from the "landfill" of strongly industrialized countries, can be refurbished with efficient technologies, drafted within the agricultural sciences in the country. In this context, the following problem steps in: to establish the moment for refurbishing old machinery into new ones depending on the amount of the potential profit, which might be obtained during the entire period of functioning of the machinery. Each refurbishment contributes to the increase of the profit. The farmer's problem: to refurbish agricultural machinery with new, but expensive machinery, or with other cheaper machinery which was operated in other households, for instance old machinery, imported from EU member states.

In emerging countries a lot more attention should be paid to the development of domestic production and services, to contribute to attracting investments and not in only one direction – the agricultural sector, since it can affect the general situation of the national economic activity.

The government of emerging countries must draft efficient paternalistic policies, relying on world experience regarding sustainable economic growth, which would "protect" the national economy in the following directions: the restriction of the products' imports, granting subsidies for the producer's activity, the additional taxes on imported products, the carrying out in the country of the research-development activity in order to equip the domestic producer with modern and efficient technologies;

In order to solve the domestic and external problems of the state, by mitigating the consequences of economic, financial imbalances, demographic, environment modifications, budget deficits, state debts, inefficient functioning of banking systems, the high rate of unemployment etc., it is necessary that the Governments and Ministries of emerging countries align paternalistic policies to the following directions: promoting fiscal activities, performing economic restructuring, ensuring the stability of foreign exchange rates, reducing volatility, the real estimate of the economic situations from various countries within external economic relations.

Then, when the quality of the products, goods, services, merchandise becomes a more and more important aspect in the life of consumers and of the various scientific, economic, commercial etc. investigations a method of quantifying quality accessible to a large number of experts is needed. Success in the processes of selling products is in most cases in a relation of direct dependence with two parameters: prices and quality. Domestic merchandise and services are competitive on the domestic market if their

prices are lower than the prices of the similar imported merchandise and their quality is superior.

For the farmer from emerging countries the quantitative aspect is important, as well as labor productivity, cutting production costs, but also the quality of these agricultural products. Success, in the processes of selling the products is broadly influenced by two parameters: prices and quality. The competitiveness of the firm depends on the competitiveness of the firm's products and not the other way round. Under market conditions, generally, the buyer cannot establish the quality of the respective merchandise. Thus, the buyer resorts to correlating the quality of the respective product with the firm's "brand".

It is important that the government authorities take the necessary measures concerning the ensuring of the funding of investment on a medium and long term with capital flows, for stimulating the producers' initiative and activity, ensuring that they do not lead to an artificial increase in the local currency and propagation of inflation.

References

1. Dudă-Dăianu D.C, Piroi M. (2014), *Consideration regarding the Improvement of the Financial Crisis Forecasting Models for Enterprises in Emerging Countries*, Ovidius University Annals Economic Sciences Series, vol.XIV, Issue1, Ovidius University Press
2. Daniliuc A. și al. (2013). *O modalitate de cuantificare a competitivității resurselor finale* in: Intellectus, nr.3. Chișinău: AGEPI, 2013, p. 93-99 <http://www.agepi.gov/pdf/publishing/intellectus/03-2013.pdf>.
3. Ghenea M. (2011). *Antreprenoriat.Drumul de la idei către oportunități și succes în afaceri*, Editura Universul Jurid, Bucuresti
4. Krugman P. și al. (2009). *Întoarcerea economiei declinului și criza din 2008*. Editura Economica, București.
5. Krugman P., Maurice O.(1997). *Economie Internațională*. New-York: De Boeck Universite.
6. Lang L. and al. (1994). *Corporate diversification and firm performanice*. In: Journal of Political Economy, Vol. 102/1994, p. 1248-1280.
7. Maximilian S. (2009). *Modelarea proceselor economice*, Editura Economica, Bucuresti.
8. Popa H.L. (2014). *Integrative Innovation as Core Determinant for Sustainable Progress* in Procedia-Social and Behavioral Sciences, Elsevier Publisher, Vol.12u4/2014, p.460-467.
9. Zoicaș-Ienciu A. (2006). *Investments in Emerging Markets – Vector of Globalization*, Conferința Internațională "Strategic Leadership in the Context of Globalization and Regionalization". Cluj-Napoca: Alma Mater, 2006. p. 359-367.