

CONCEPTS AND METHODOLOGIES REGARDING THE IMPROVEMENT OF ROMANIAN FOREIGN TRADE (II)

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Abstract: *The aim of this paper is to emphasize the possible engines that can boost Romanian foreign trade from a chronic deficit to a more balanced one. In the beginning, we present the main theories and models that tackle the subject. In this matter, the paper starts with the analysis of neo-factors, Porter, the gravitational model, the input-output model, and the terms of trade in order to see the historic thought of trade model development. Following these models, a more mathematical approach is made, using a thorough analysis at the product level. All the computations are based on the combined nomenclature with its XXII classes, being the most exact determinant of traded goods. The paper uses statistic indexes as: Hirschman concentration index, elasticity coefficient, the degree of trade openness, in order to determine the specialization effect of the Romanian classes for a period of twenty one years, starting in 1991 and ending in 2012. This is the point where former, current and future specialized engines of potential trade growth can be established. It is crucial for a country to determine its potential in an open international arena, in order to take the necessary steps to encourage or discourage productive or non-productive areas of certain industry branches. Based on the results and on the previous methodology, a mix of theory with solid mathematical analyses, gives the opportunity to draw up different sets of sustainable development formulas in order to obtain a higher concentration ratio regarding several classes from the combined nomenclature. For Romania to obtain higher gains from international trade, a more sustainable integration in the European Union, it has to stop its chronic balance of trade deficit. Looking at and analysing the potential development of a combined nomenclature class or classes will help improving Romania's chronic deficit, offering a long term prospective of sustainable development, reducing its foreign debt, improving its balance of trade accounts, and transforming its import driven economy to a more competitive export oriented economy. Achieving these standards can ensure Romania's future growth and accession to a more privileged seat in the European Union and in the international arena.*

Keywords: *sustainable development, Hirschman concentration index, terms of trade, degree of trade openness, elasticity coefficient, combined nomenclature*

JEL classification: *F10, F19*

This paper is supported by the Sectorial Operational Programme Human Resources Development (SOP HRD), financed from the European Social Fund and by the Romanian Government under the contract number SOP HRD/107/1.5/S/82514.

The neo-factor concept in the international trade

The first author who emphasized the importance of neo-factors in the strong national economy framework was Michael Posner (1961). He highlighted the benefit of the correlation between investment in education, research and development with future outputs of intensive technology, goods and products, which are commercialized on the domestic and international market at a superior price.

In this way, according to Giurgiu (2008), the countries that made the first investments would hold an absolute advantage over the partner countries in the international trade. The tendency to imitate the newest products will make their initial advantages dissipate in time.

Following the same pattern, the product life cycle of Raymond Vernon (1966) makes it in the economic theory arena. According to the author, there are three stages in the life of new goods and products. In the first stage the new goods are produced in developed countries because there the markets are mature enough. In this stage the product can suffer different changes, this product not being a standardized one. According to Cherchez (2007) and Giurgiu (2008), the potential clients for these goods are only those consumers with high incomes.

In the second stage the product becomes standardized, the companies that produce it obtain economies of scale and economies from the efficiency curve, the price tends to get lower and exports to other developed countries start to rise. A tendency in the second stage targets the expansion of production facilities in the vicinity of the main markets, so that the product is no longer produced in the country of origin.

The last stage implies that the product has transformed from a pinion one into an ordinary one, being entirely produced in the poor developed and developing countries, the developed countries using imports in order to procure the products that they need.

According to Cherchez (2007), using the notion of technological gap, Vernon eliminated the premise of the H-O model, stating that the technology used in the production of goods process should be similar. In this equation besides the technological gap comes up the demand gap, because time passes until the demand is familiarized with the new product. From these 2 premises it results that the net gap is majored according to the author as a difference between the technological gap and the demand gap.

The same idea was developed by another theorist, Michael Krugman (1974) who states that the technological monopoly registered by innovative entities can suffer from the erosion of international transfer of technology.

The structure of human resource has a major significance in the thought of these authors, offering a possibility for development to those nations that invest in the preparation and training of this important work resource.

If countries want to hold their leader position they will have to make permanent investments in education, research and development so that the gap between them and the competing countries to be kept, or in a best case scenario to become even larger.

The concept of national competitive advantage

One of the recent theories regarding international trade is the one based on Michael Porter's (1985) theory regarding the national competitive advantages, which combines the neo-factors with the concept of utilizing the natural resources and the labour work force. In the middle of his theory is the "Porters diamond", a structure

that combines a series of essential elements so that a country can impose its supremacy in international trade. His study focused on the industry of production of the first 10 most industrialized countries in the world.

The author identifies 4 essential attributes for a company to be able to register competitive advantages, these being the following: production factor endowments as human resources road rail aerial and sea port infrastructure, educational infrastructure, climate, natural resources, etc.

Porter takes into account the structure of industrial branches, analyzing the structure of related industries. The author states the fact that the industrial production cannot become a competitive one at the national and international level, unless there is interdependence between industrial activities at branch level. According to Giurgiu (2008), as for example, the United States' position is mentioned in the Information Technology sector, which has its core functions focused on semiconductors production, and the success of Switzerland in the pharmaceutical industry because it focuses is on developing its base, which is the chemical industry.

The third attribute's focus is on the conditions regarding demand formation. It is an important asset in Porter's view, arguing that a pretentious demand will force the company's policy into making permanent investments in research and development, so that their products will incorporate a higher technological degree and a superior quality. The last attribute emphasized by the author is the one referring to strategy, structure and competition among companies at national level. According to Porter, the steepest the competition among the companies at national level, the bigger the permanent investments in research and development will have to be in order to maintain or to gain new market share.

In this model there are 2 more factors represented by the economic policy and the interventionism of the government on one hand, and chance on the other hand. Usually, the state interventionism in economy can offer a better climate for sustainable development. Also the state policy regarding acquisitions can influence the progress of certain industry branches. The investment in education represents another method by which the state can influence the activity of companies and national economy level.

The concept of chance in Porter's theory highlights the advantages that a company can register the moment when it discovers new processes or resources through its research and development programs or by finding new natural resources unavailable at regional or international level, chances that can offer a competitive advantage over its main rivals.

Terms of trade index

In order to hold a clear picture of the potential of the Romanian transports on the international markets the current paper emphasizes the analysis and interpretation of some index utilized in the measurement of international trade efficiency.

The first index used in the analysis of the international trade of one country with another or with an economic block, is the terms of trade. According to Stoian, Puiu, Motiu, (1973), the terms of trade represent "the relationship between the export and import prices respectively the buying power of one good in exchange to another, of some exported goods in exchange to the same imported goods, of export in its hole compare with the import".

According to Bari (2005), Cerchez (2007), Giurgiu (2008), this index can determine the value of necessary goods that need to be exported so that a country can import the same value of goods, according to the formula

$$I_{TT} = \frac{\text{export price index}}{\text{import price index}} \times 100$$

According to Genereux (2000), the formula states that the ratio between the export price index and the import price index records that $ITS > 100\%$, then it means the international trade offers an advantage to the exporting country because the value of the imports has reduced seems its base value. If from this ratio results that $ITS < 100\%$, the terms of trade of the analysed country suffers on behalf of international trade, because the country needs a supplementary quantity of exported goods in order to import the same quantity of goods from abroad.

According to Begu (1999), the terms of trade indices are derivatives from the statistical index that are subjected to the following premises:

- the economic functions are differently fulfilled by the export and import operations;
- the import operation implies the realisation of payments, while the export operation implies revenues.

Cerchez (2007) shows that the gross term of trade is calculated according to the formula as the share between the average export price index and the average import price index:

$$Irsb = \frac{I_{P_0}^E}{I_{P_0}^I} \cdot 100 = \frac{\frac{\sum q_1 p_{0E}}{\sum q_0 p_0}}{\frac{\sum q_1 p_{0I}}{\sum q_0 p_0}} \cdot 100$$

$Irsb$ - gross terms of trade;

$I_{P_0}^E$ - the average export price index base period;

$I_{P_0}^I$ - the average import price index base period;

q_1 - the quantity of goods exported or imported in the current period

q_0 - the quantity of goods exported or imported in the base period

P_0 export or import prices in the base period

The same author highlights the aspect according that the net terms of trade is calculated based on the formula as a ratio between the average export price index and the average import price index.

$$Irsn = \frac{I_{P_1}^E}{I_{P_1}^I} \cdot 100 = \frac{\frac{\sum q_1 p_{1E}}{\sum q_1 p_0}}{\frac{\sum q_1 p_{1I}}{\sum q_1 p_0}} \cdot 100$$

$Irsn$ - net term of trade

$I_{P_1}^E$ - the average export price index current period

$I_{P_1}^I$ - the average import price index current period

P_1 - export or import prices in the current period

P_0 - export or import prices in the base period

q_1 - the quantity of goods exported or imported in the current period

q_0 - the quantity of goods exported or imported in the base period

If we analyse the economic literature according to Cerchez (2007), Giurgiu (2008), the net terms of trade offers the best result when it majors the efficiency of a country's international trade relations. According to Giurgiu (2008), "it can be considered as an index of the external purchasing power, achieved by a nation through exports. If the important goods are in average more expensive than the exported goods, exchange conditions are unfavourable: in order to procure goods from abroad, the analysed country needs to produce and sell a higher number of goods and services".

Based on the studies carried out by Begu (1999), Cerchez (2007), Giurgiu (2008), there are other statistical indexes like the price scissors, which is used to determine the regression in the case of net terms of trade, based on the following formula:

$$FP = (1 - IRSN) \cdot 100$$

Also the authors analyse the impact, the revenue terms of trade also known as the index of the export purchasing power and the factor index of the terms of trade.

The index of the export purchasing power, according to the following formula, is obtained as the multiplier between the average export price index and the net terms of trade:

$$Ivrs = (I_p^E \cdot Irsn) \cdot 100 = \frac{\sum q_1 p_1}{\sum q_1 p_0} \cdot \frac{\frac{\sum q_1 p_{1E}}{\sum q_1 p_0}}{\frac{\sum q_1 p_{1I}}{\sum q_1 p_0}} \cdot 100$$

Another index used in the measurement of the purchasing power is the factorial index of terms of trade, which according to the following formula represents the multiplier between the net terms of trade and the labour productivity index.

$$IFRS = IRSN \times I^W$$

When the time comes to analyse the results and we see that $IFRS > 100\%$, it is considered a positive evolution of the calculated index. According to the formula the results can be achieved due to a positive evolution of either terms, or only one of them, but with a more significant growth, so that the final result should be interpreted as a favour of the one.

Based on the information stipulated by Giurgiu (2008), in the factorial analysis of terms of trade you can utilise other equations such as: the degree of exports in the internal production and the degree of exports in the internal consumption. The first part you can obtain it as a share between total exports or those of the industrial branches and total internal production or industrial branches. The second part is obtained as the ratio between total exports or those of the industrial branches and total internal consumption or that of the industrial branches.

Table no.1: The evolution of the export / import price index and Romania's terms of trade during 2001-2011

Year	Export price index (Ipe)	Import price index (Ipi)	Annual rate Ipe	Annual rate Ipi	Net terms of trade (%)	Revenue index from the terms of trade
2001	97,16	97,51	-	-	99,64	96,81
2002	96,61	96,31	-0,56%	-1,23%	100,31	96,92
2003	101,84	102,92	5,41%	6,87%	98,94	100,76
2004	110,73	112,22	8,73%	9,03%	98,67	109,26
2005	120,58	122,39	8,89%	9,06%	98,52	118,79
2006	127,10	130,21	5,41%	6,39%	97,62	124,07
2007	135,89	138,27	6,91%	6,19%	98,28	133,55
2008	153,09	155,92	12,66%	12,76%	98,19	150,32
2009	146,62	145,41	-4,23%	-6,74%	100,84	147,85
2010	152,57	152,57	4,05%	4,93%	100,00	152,56
2011	167,37	170,35	9,70%	11,65%	98,25	164,45

Source: UNCTAD, <http://unctadstat.unctad.org/ReportFolders/reportFolders.aspx> and author's computations.

According to table no.1, the statistical data has been taken from UNCTAD, the base year, in computing the index, has been selected for the year 2000, and the reference

currency has been selected the dollar. According to the above data the net terms of trade registers a cyclical evolution, but mainly under the level of 100%. This fact indicates an unfavourable situation for our country. Only in the years 2002, 2009 and 2010 Romania registers values that exceed 100%, a fact that implies that our country in 8 out of the 11 analysed years has recorded an increase in the price of imports, being necessary to produce more in order to balance the result.

The evolution registered in the period 2009, 2010 is the result of only the economic crisis, which has significantly reduced the volume of imported goods in Romania. A positive evolution that needs to be mentioned is that of the export and import price index. Both of the indexes have registered an upward trend and not a disproportionate one.

According to Giurgiu (2008), after analysing the export and import price index, it has been noticed a decrease of export prices and an increase of import prices, a fact signed by an increase of external balance of trade deficit. In this analysis the base year that the index has been reported to was the year 1990.

The coverage degree index

There are other indexes used in computing the efficiency of commercial flows like the coverage degree index. This index can offer important details regarding the analysis of international trade flows on which the government can adopt important majors in order to recover and improve its commercial policy.

In this case the coverage degree index is represented according to the formula by the ratio between the export value index and the import value index.

$$IGA = \frac{I^V(X)}{I^V(M)} = \frac{GA_{t_1}}{GA_{t_0}}$$

Based on these computations it can be observed the quarterly, semestral and annual evolutions of the coverage degree index. Achieving a balance between the imports and exports represents the primary goal of any commercial policy, the slippages from these goals having serious consequences at the level of the national economy.

When we try to compute the balance of the commercial flows you can use the formula of the relative coverage degree as a ratio between the exports value and imports value.

$$GA = \frac{\text{export value (FOB)}}{\text{import value (CIF)}} \times 100$$

After resolving the computations if it is obtained a result that points $GA > 100\%$ it means a positive effect in the international trade flows, meaning that the country will register an external trade balance surplus. If the result shows that $GA < 100\%$, it means that the country will register an external trade balance deficit.

Table no.2: The evolution of the openness degree index and the coverage degree index of Romania during 1991-2011

Year	The openness degree index	Share of exports in the GDP	Share of imports in the GDP	External trade balance	The global coverage degree index	The coverage degree index with the EU
1991	30,47%	12,89%	17,58%	-4,69%	68,86%	93,52%
1992	41,81%	17,16%	24,65%	-7,49%	69,93%	59,34%
1993	37,14%	15,88%	21,26%	-5,38%	74,57%	68,12%
1994	28,40%	13,15%	15,25%	-2,10%	86,52%	95,31%
1995	39,63%	17,23%	22,40%	-5,17%	76,95%	83,05%
1996	44,10%	18,26%	25,84%	-7,58%	70,69%	81,95%
1997	49,48%	21,16%	28,32%	-7,16%	74,74%	81,19%
1998	42,54%	17,57%	24,97%	-7,40%	70,36%	78,78%
1999	50,31%	22,41%	27,90%	-5,49%	80,36%	89,06%
2000	68,73%	30,43%	38,30%	-7,87%	79,44%	89,61%
2001	74,93%	31,66%	43,27%	-11,61%	73,19%	86,31%
2002	73,26%	32,03%	41,23%	-9,20%	77,68%	89,40%
2003	61,87%	26,24%	35,63%	-9,39%	73,65%	86,41%
2004	59,90%	25,08%	34,82%	-9,74%	72,05%	80,93%
2005	55,62%	22,58%	33,04%	-10,46%	68,33%	74,28%
2006	63,12%	24,50%	38,62%	-14,12%	63,44%	64,63%
2007	71,72%	26,23%	45,49%	-19,26%	57,66%	58,30%
2008	65,67%	24,55%	41,12%	-16,57%	59,69%	60,79%
2009	58,48%	25,04%	33,44%	-8,40%	74,68%	75,87%
2010	70,20%	31,13%	39,07%	-7,94%	79,68%	79,34%
2011	73,11%	32,97%	40,14%	-7,17%	82,16%	80,43%

Source: author computations

The computations in table no 2 are based on the ratio between the value of Romanian exports in the FOB conditions and the external imports in the CIF conditions, all of them expressed in euro currency. As the table shows, both the global coverage degree and the EU coverage degree do not achieve 100%. In the entire analyzed period, the coverage degree registers values below 80%, a fact that is reflected in the external trade balance.

If until 2004 the situation of maintaining a relative good coverage degree of imports through exports destined to the European market had been achieved, starting with 2005 the situation has deteriorated due to the elimination of the external tariff duties due to the negotiated agreement signed by Romania at the accession treaty (1993).

These facts were corroborated with a flexible monetary policy that offered a lax access to liquidity. According to Giurgiu (2008) this situation influenced the population in purchasing electronic consumer goods, auto vehicles, a fact that has led to a decrease of the coverage degree from approximately 80% in 2004 to approximately 60% in 2008. Only when the financial crises made its presence felt, the consumption was dramatically reduced, having a direct impact on the coverage degree index, improving its situation.

Conclusions

Year after year, Romania's situation regarding its chronic deficit is getting worse. From the data mentioned above, the coverage degree of imports through exports has never surpassed the barrier of 80%. This signifies that we import more than we export, and all the remaining percentage adds up at the national debt. For all the remaining percentage, Romania has borrowed money from foreign banks and international institutions. If this situation is maintained, the future generations of Romanians will have to pay the debt of this consumption boom.

The situation from 2009 and 2010 reflects the corrections suffered by a massive contraction of consumption. If this has happened only by the lack of consumption credits, by a decrease of revenues, than the Romanian government should think about introducing a progressive revenue tax in order to cut down the imports done by the people with high revenues.

Another situation that can be taken in consideration will be the reintroduction or upgrading non tariff barriers, especially excise duties, in order to diminish the 20% gap, so that the coverage degree of imports through exports should register a balanced result.

Bibliography

- Bari, I. (2005) *Globalizarea economiei*, Editura Economică, București
- Begu, S. (1999) *Statistică internațională*, Editura All Beck, București
- Cerchez, O. (2007) *Eficiența economică a comerțului exterior*, Editura Logos, București
- Ciobanu, G. and Popescu, G. (2000) *Sisteme de comerț exterior*, Presa Universitară Clujeană
- Ciupagea, C. (2000) *Economic and Econometric Models for Romania*, Editura I.E.M., București
- Drăgan, G. (2004) *Fundamentele comerțului internațional*, Editura ASE, București
- Giurgiu, A. (2008) *Comerțul intraeuropean. O nouă perspectivă asupra comerțului exterior al României*, Editura Economică, București
- Giurgiu, A. (2008) *Comerț internațional și politici comerciale*, editura Universității din Oradea, Oradea
- Pop Silaghi M.I. (2006) *România în tranziție. Comerțul exterior și creșterea economică*, Editura Economică, București
- Popescu, G. (2001) *Modele de comerț internațional*, editura Corvin
- Popescu, G. (2009) *Evoluția gândirii economice, ediția a IV-a*, Editura Ch. Beck, București
- Porter, M. (2004) *Competitive Strategy: Techniques for Analyzing Industries And Competitors*, Gardners Books

Posner, Michael (1961) *International trade and technical change*, Oxford Economic Papers

Stoian, I. and Puiu, A. and Moțiu, A (1973) *Tehnica operațiunilor de comerț exterior*, Editura Științifică, București

Căruntu, C. and Lăpăduși, M.L. (2008) *System Of Indicators Of The Profitability For Companies Operating In Foreign Trade*

Cohen, B.J. (1969) *Economica*, New Series, Vol. 36, No. 141

Săvoiu, G. and Crăciuneanu, V. and Țaicu, M. (2010) *O metodă statistică nouă de analiză a concentrării sau diversificării piețelor*, *Revista Română de Statistică*, nr.2

INSSE available on line: <http://www.insse.ro/cms/rw/pages/index.ro.do>

UNCTAD available on line: <http://unctadstat.unctad.org/ReportFolders/reportFolders.aspx>