Ranking Industrial Investment Opportunities of The Country and Determining Importance With Multivariate Decision Approach

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Abstract: It is necessary to recognize commercial specialty for correct policymaking in order to direct rare economic resources to efficient sections and encourage export for access to economic development and forms basis of growth planning. For this purpose, it is necessary to recognize competitive and commercial advantages of the country in order to direct rare capital resources. Having real image of economic condition of industry of the country with use of quantitative and scientific indices not only optimizes investment in the country equipment but also guarantees their short term and long term effectiveness. The present article calculates industries indices with help of ranking indices and emphasis on revealed comparative advantage (RCA) with use of three digit codes and then ranks the said industries in taxonomy method. Result of the research shows that there are three industries groups in the country which include the first group with production advantage and commercial advantage, the second group with production advantage without commercial advantage and the third group with commercial advantage and without production advantage.

Key words: absolute advantage, relative advantage, revealed comparative advantage and ranking investment opportunities.

INTRODUCTION

Access to more production with regard to limited resources is one of the most important economic goals of each society. In many countries in the world, resources, equipments and talents not only are varied and limited, but also spatial distribution of these resources inside these countries doesn’t follow integrated and homogenous pattern. Iran is among these countries. Different resources of our country have special natural equipments, broadness and climatic variety and different capabilities of manpower. These differences refer to this fact that national and regional planning authorities of the country should pay serious attention to subject of capabilities and capacities of the region in different activities in policymaking for national economic development and regional economies and direct region investments for development and expansion of activities which have suitable opportunity for production of goods and services (Balassa, 2005).

On the other hand, globalization trend and necessity of attendance in global markets direct us to this fact that not only capabilities and equipments of the region should be considered in production of goods or services (region production specialty) for prioritizing investments and allocation of resources, but also commercial allocation of the region should be considered in that activity (Sanoobar, 2008).

With regard to production and commercial activities of the country in different economic sections, this article studies what are abilities and capabilities of the advanced techniques in the field of industry, if there is difference between priorities resulting from research and industries organization of the country. Main goal of this article is to orient investments in efficient and suitable activities by determining fields of investment in industries section.

Theoretical Fundamentals:

Economic integrity or commercial release has considerable effects on spatial positions of the economic activities. Difference in relative advantage between the companies not only specified specialized places in levels between countries, but also led to formation of these specialized positions inside the countries (Widgren, 2005). At time of modeling interregional relations, experts of regional sciences use international commercial model. In any way, what is important for application of such methods to issues of interstate production and commerce is that most of international commerce theories are based on this hypothesis that production factors between the countries are not moving. Although this hypothesis is probable in international field, it should be justified in the country. Most economists assume that lack of economic balances in long term will be removed due to motion

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and specialty of production factors. However, there is solid evidence for rejecting this claim. For example, Moroney and Walker (1966) showed that production factors are not completely moving and in case that there is complete motion, price of factors among regions will be balanced (Irvani, 2002). Berets in 2001, Scoli in 1969, Kualhu, Ghali in 1975 proved that there are many interregional differences wages. One can express that major reason for continual differences of wages between different regions in the country is imperfect motion of labor force. When this imperfect motion of labor force is combined with nature of special industry capital in short term, hypothesis of immovability of production factors in long term will not be unreasonable (Dalal and Williams, 1990).

International free trade will maximize global welfare. This is the belief which was mentioned by Adam Smith, father of economics and then attracted many advocates. According to Smith, any country is specialized in production of the goods for which it has more efficiency and this specialty cause’s production surplus to local consumption of such goods allows exchanging them with other goods which are produced in other countries and the said country has less efficiency in their production. This is the starting point of exchange and trade between nations and production of the exchanged goods increases in the countries which have absolute advantage and additional production is distributed between the trading countries. Benefits resulting from trade are obtained from specialty in production and international trade. For this reason, wealth of the nations which is provided on the basis of specialty of the countries is increased leading to welfare of the countries (Tamizi, 2001).

**Fundamentals of Ranking Investment Opportunities:**

In order to determine abilities and rank different economic activities, different patterns have been provided. One of the most important patterns is method of determining relative advantages. Although relative advantages in international economy and national economy are indispensible and this method can be accountable but it can determine relative regional advantages (Mobini et al, 2008).

There are two major methods for determining and measuring relative advantage which include commercial specialty and production specialty measurement methods.

In commercial specialty measurement method, economic actual capabilities (after trade) are identified with use of revealed comparative index (RCA1) and in production specialty measurement method, potential and actual capabilities (before trade) are identified at the same time. Revealed comparative advantage method was used for the first time by Lines in order to estimate export performance of the countries and the related goods (Commercial Studies and Research Institute, 2007).

**Comparative Advantage Measurement Method Before Trade (Production Specialty):**

In order to determine comparative advantage before trade, there are many methods in which only one index has been used in order to assess and rank sections. Such methods have this problem that only one or two indices are used for ranking the activities and are less reliable. For this reason, it is proper to rank them with use of suitable indices which include more dimensions of the studied subject (Pirasteh, 2004).

In order to determine priority of investment in industry section of the country, production vantage of different activities of the country is studied with use of varied and different indices which play important role in decisions of these investors and on the basis of this index and with use of factor analysis and numerical taxonomy techniques, priorities of investment in major economic sections of the country are introduced and then investment ranking is specified in industries of the country in terms of commercial advantage with use of symmetric revealed comparative advantage (Vollrath, 1999).

In this study, at first production specialty is identified with use of indices and then commercial specialty is measured with use of symmetric revealed comparative advantage and finally actual and potential capabilities have been separately introduced by comparing these two methods.

**Comparative Efficiency Index:**

The related index is calculated by ratio of value added to output value of that industry and all over the country. This index is calculated by ratio of value added to value of the product or output of that activity in the country and all over the country:

\[
I_t = \frac{\frac{V_{it}}{\text{out}_{it}}}{\frac{V_{it}}{\text{out}_{it}}}
\]

\[V_{it}, \text{out}_{it}:\text{value added number created by activity } i \text{ in the region } j \text{ and the country } t \]

\[\text{out}_{it}, \text{out}_{it}:\text{value of output created by activity } I \text{ in the region } j \text{ and the country } t \]

Results of this index are calculated for the industrial activity of the country on the basis of three-digit codes ISIC (Pirasteh, 2002).
Investment Actual Tendencies Index:
This index shows tendency of the investors to investment in industrial activities. With regard to the fact that capital is one of the most important production factors and has effect on economic growth and industrial activities on the basis of theories, this index is defined as follows: (Tehran Province Plan and Budget Organization, 1997).

\[
I_3 = \frac{\text{Sum of total activity investments value } i}{\text{value of activity investment value of activity investment}} \div \frac{\text{Total value of the country industries investments}}{\text{industry investment value } i}
\]

Aggregation Economies Index:
On the basis of this index, development and aggregation of a definite economic activity in a country show optimization and development of that industry with regard to coordination of units for preparing raw material and are obtained by each economic activity to the entire economic section total value added ratio in the country:

\[
I_3 = \frac{V_i}{\sum_{i=1}^{n} V_i}
\]

Depreciation Compensation Coefficient Index:
It indicates relationship between value added in industrial activity and value of the investments in that activity.

\[
I_6 = \frac{\text{Sum of industry value added } i}{\text{value of industry investment } I} \div \frac{\text{Country industry value added } i}{\text{industry total investment value}}
\]

Labor Force Productivity Index (Efficiency Index):
In this study, labor force productivity index which is one of the major economic indices will be used in order to study productivity and efficiency of production factors (such as labor force) and this is defined as:

\[
I_7 = \frac{(V_{i\text{ }} / L_{i\text{ }})}{(V_{i\text{ }} / L_{i\text{ }})}
\]

\[
L_{i\text{ }j}, L_{i\text{ }t} : \text{the number of the industry employees } i \text{ in region } j \text{ and the entire country } t
\]

\[
V_{i\text{ }j}, V_{i\text{ }t} : \text{value added created by industry } i \text{ in region } j \text{ and the entire country } t
\]

Ratio of The Specialized Employees In Each Industry to Total Employees of That Industry:
In order to determine technology levels of the studied industries, different indices were introduced and here, ratio of specialized employees of each industry to total number of the employees in the same industry has been used:

\[
I_9 = \frac{(L_{i\text{ }j} / L_{i\text{ }j})}{(L_{i\text{ }j} / L_{i\text{ }j})}
\]

\[
L_{i\text{ }j}, L_{i\text{ }t} : \text{the number of industry specialized employees } i \text{ in the region } j \text{ and the entire country } t
\]

Employees Per Capita Production:
This index is defined as ratio of product or outputs to the number of employees and is regarded as a criterion for measurement of labor force productivity.

\[
I_{11} = \frac{(Out_{i\text{ }j} / L_{i\text{ }j})}{(Out_{i\text{ }j} / L_{i\text{ }j})}
\]

Index of Dependency on Local Raw Material:
In case that stability in production and export of product is considered by the industries owners and policy makers, index of dependency on local raw material will be important because reliance on foreign material may
endanger the production process in spite of foreign currency limitations of the country. Here, this index is introduced as share percentage of local raw material to total consumables of each industry.

**Share Of Person And Rights In Value Added:**
Person’s share and rights index can indicate distribution of income among personnel and employers and productivity of that activity. While this index can reflect type of the technology used in a special industry. After calculating general specialized indices, each one of the sections, top activities will be specified for investment in each one of the sections with use of numerical taxonomy analysis and main components method.

**Data Analysis Method:**
One of the most important methods for ranking economic activities of different regions is numerical taxonomy analysis method in case that varied indices relating to the subject are used. This method is able to divide a set to less or more homogenous subsets by combining a set of the indices relating to subject and specify the different sections of economic activities of a region (or district ) and determine position of the studied options among members of the set which is important in planning.

In spite of positive specifications, this method faces some limitations for example it has bias in proportion to the indices which are correlated with each other. In the present article, factor analysis method and method of analysis to main components have been used.

Factor analysis method results from statistical multivariate techniques with which one can create m main factor from n index to be observed so that selective factors are independent of each other and there is no linear correlation between them after performing different stages. Of the other positive points in application of this method are ability to reduce data volume and the fact that a weight based on that index is determined in the related method for each one of the indices. For this reason and in order to remove limitations of numerical taxonomy method, we tried to use all positive points of these methods by combining two factor analysis and numerical taxonomy methods and to provide reliable and acceptable results. For this purpose, primary data matrix was made with use of gathered statistical information and with help of selective indices of the research and calculated though factor analysis method and analysis to main components. Factor analysis method output has been regarded as numerical taxonomy method input and different sections of economic activities are ranked after performing different stages of this method. It is worth noting that KMO and Bartlet test was used and the said index with number 0.8 showed factor analysis feasibility.

**Numerical Taxonomy Analysis:**
Although we can mention that some part of the economy of a region or an activity among other activities of a region has more advantage and more developed, however, quantitative measurement of enjoyment or priority of activity of a region is not simple because it is a multidimensional process and the more the dimensions, the more accurate and desirable results will be given. Due to nature of advantage and enjoyment concepts or due to lack of statistics and accessible and reliable information, it is hardly possible to measure these concepts. When we intend to perform this work with a numerical index, ranking will be a simple work because it is enough to rank different activities on the basis of ascending or descending trend of the related index. But if we want to include more factors and dimensions for ranking, we should perform ranking with help of the indices which consider the most aspects of the hypothesis and this is not as simple as the past one.

However, if we want to obtain a single index as combined index which indicates a criterion for determination of enjoyment degree or advantage of economic activities of a region, we will not analyze them as one dimension and provide more comprehensive analysis of the subject matter because results obtained from these analyses will be close to reality. For this reason, primary matrix is made with use of the selective indices and on the basis of economic activities in order to present more comprehensive model and to have access to more accurate results which cover more percentage of dimensions and properties of the economic activities of this region.

Performance of this method includes six stages:

**Stage 1:**
making data matrix: columns of this matrix indicate different matrices and its rows indicate economic activities.

**Stage 2:**
making standard matrix: because most of the indices which are studied have different scales and this prevents from performing algebraic operations on indices. In order to solve this problem and delete different scales and replace single scale, each one of the matrix elements $X_{ij}$(data matrix ) changes variable and $X_{ij}$ is turned into $Z_{ij}$ which is standards matrix.
Stage 3: calculation of combined distances between activities (in terms of indices value): in this stage of taxonomy method, combined distances between different economic activities are calculated and finally matrix of distances is made.

\[ j = 1, 2, ..., P \]
\[ d_{ab} = \sqrt{\sum_{j=1}^{P} (Z_{aj} - Z_{bj})^2} \]

\[ Z_{aj} \]: distance between economic activity a and jth index
\[ Z_{bj} \]: distance between economic activity b and jth index
A and b indicate two economic activities and \( d_{ab} \) indicates combined distance between both activities and j is the number of indices.

Stage 4: determining the shortest distances and drawing optimum diagram: for separating activities to homogenous and heterogeneous activities

In this stage, the shortest distance in each row is selected in order to determine range and upper limit \( (d^+) \) and lower limit \( (d^-) \) of this homogenous distance are calculated with use of the following relations:

\[ \bar{d} = \sum_{i=1}^{n} d_i / n \]
\[ S_d = \sqrt{\sum_{i=1}^{P} (d_i - \bar{d})^2} / n \]
\[ \bar{d} = \bar{d} - 2S_d \]
\[ d^+ = \bar{d} + 2S_d \]

The activities which the minimum distance between two limits (\( d^- \) and \( d^+ \)) are regarded as homogenous activities and included in one group.

While the activities of which the minimum combined distance is more than (\( d^- \)) or less than (\( d^+ \)) are known as heterogeneous economic activities. Therefore, all information relating to such activities (heterogeneous) is excluded from the primary standard matrix.
Stage 5:
ranking homogenous options in terms of tested criteria: In this stage, ideal value is calculated in standardized indices matrix and for all indices and then development model is calculated through the following relations:

\[
C_i = \sqrt{\sum_{j=1}^{P} (Z_{ij} - Z_{oi})^2} \quad i = 1,2,\ldots,n
\]

\[
j = 1,2,\ldots,P
\]

- \(C_i\): enjoyment model (or deal activity)
- \(Z_{ij}\): jth standardized index for ith option
- \(Z_{oi}\): ideal quantity for ith standardized index max criteria

The smaller the \(C_i\) of development model (ideal activity) indicating more comparative advantage and the larger the \(C_i\), it means non enjoyment of ith option.

Stage 6:
calculating degree of enjoyment or comparative advantage of homogenous options and prioritization of economic activities: It is necessary to note that the above criterion has no limited range and its comparability has no suitable accuracy for numerical taxonomy method. Therefore, combined index called advantage or enjoyment degree is introduced which has more limited range than development model \(C_i\) has and is between zero and one so that this index makes study more easier and accurate. If we show advantage or enjoyment degree of ith option with \(f_i\), \(f_i\) will be calculated from the following relation:

\[
f_i = \frac{C_i}{C^*}
\]

Where \(C^*\) is upper limit of development model and is calculated from the following relation:

\[
C^* = \bar{C}_i + 2S_{ci}
\]

So that \(\bar{C}_i\) is average of development model for ith option and \(S_{ci}\) is their standard deviation:

\[
\bar{C}_i = \frac{1}{n} \sum_{i=1}^{n} C_i
\]

\[
S_{ci} = \sqrt{\frac{1}{n} \sum_{i=1}^{n} (C_i - \bar{C}_i)^2}
\]

In the final stage, results are ordered from large to small after deducting number 1 from all \(f_i\) calculated for different economic activities. \((F_i = 1-f_i)\) in which the largest \(F_i\) has the highest enjoyment and the smallest \(F_i\) has the least enjoyment or comparative advantage.

Results Obtained From Country Industries Ranking:
In order to identify and divide homogenous and heterogeneous industries and with regard to formation of homogenous distances, factor analysis method was performed through several stages. Finally, after division of homogenous and heterogeneous industries, advantaged homogenous industries have been classified during the related years with use of a comparison, ranking and in four priority groups from one to four and basis of this classification is use of aggregated comparative frequency of different industries enjoyment degrees. On this basis, rows 1 to 26 are regarded as the first priority, rows 13 to 26 are regarded as the second priority, rows 27 to 38 are regarded as the third priority and rows 39 to 58 are regarded as the fourth priority of the country industries. As specified in table 1, industries relating to production and repair of all hydraulic vehicles, essential chemicals, optical and photography and nonmetal minerals production industries which have not been classified and iron and steel stock material, tobacco –cigar, spinning, weaving and textiles completion, paper, rubber products except for shoes, office and calculating devices, motor vehicles production industries are regarded as 12 industries with the country production advantage.
with emphasis on foreign and large markets can reinforce industrial comparative advantages or create new of the country industries in addition to decrease of production costs. In fact, planning for industrial development production in real sense and use of scale economies cause to increase scope of production and competing power of the country industries in addition to decrease of production costs. In fact, planning for industrial development with emphasis on foreign and large markets can reinforce industrial comparative advantages or create new advantages.

**Table 1:** priorities of investment in the country industry section on the basis of ISIC three-digit codes.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Aggregated comparative frequency</th>
<th>Development degree</th>
<th>Rank</th>
<th>Aggregated comparative frequency</th>
<th>Development degree</th>
<th>Activity</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.51327</td>
<td>0.34994</td>
<td>27</td>
<td>0.026326</td>
<td>0.546796</td>
<td>production and repair of all hydraulic vehicles</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>0.5008</td>
<td>0.340964</td>
<td>28</td>
<td>0.052226</td>
<td>0.537843</td>
<td>Production of essential chemicals</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>0.546873</td>
<td>0.348873</td>
<td>29</td>
<td>0.076229</td>
<td>0.508058</td>
<td>Production of optical and photography tools</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>0.563629</td>
<td>0.347888</td>
<td>30</td>
<td>0.097266</td>
<td>0.434827</td>
<td>Production of nonmetal mineral products which have not been classified in another place</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>0.580259</td>
<td>0.345306</td>
<td>31</td>
<td>0.117475</td>
<td>0.419701</td>
<td>Production of iron and steel stock material</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>0.596730</td>
<td>0.342223</td>
<td>32</td>
<td>0.136926</td>
<td>0.40398</td>
<td>Production of construction metal products , reservoirs , battery and steam generators</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>0.613189</td>
<td>0.341742</td>
<td>33</td>
<td>0.155948</td>
<td>0.395062</td>
<td>Production of products from tobacco -cigar</td>
<td>7</td>
</tr>
<tr>
<td>8</td>
<td>0.629520</td>
<td>0.33929</td>
<td>34</td>
<td>0.174912</td>
<td>0.393847</td>
<td>Spinning , weaving and textiles completion</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>0.645767</td>
<td>0.337313</td>
<td>35</td>
<td>0.193846</td>
<td>0.393221</td>
<td>Production of paper</td>
<td>9</td>
</tr>
<tr>
<td>10</td>
<td>0.661890</td>
<td>0.335026</td>
<td>36</td>
<td>0.212648</td>
<td>0.390485</td>
<td>Production of rubber products except for shoes</td>
<td>10</td>
</tr>
<tr>
<td>11</td>
<td>0.677988</td>
<td>0.334135</td>
<td>37</td>
<td>0.231401</td>
<td>0.389481</td>
<td>Production of office and calculating machinery</td>
<td>11</td>
</tr>
<tr>
<td>12</td>
<td>0.693992</td>
<td>0.332375</td>
<td>38</td>
<td>0.249989</td>
<td>0.386043</td>
<td>Production of motor vehicles</td>
<td>12</td>
</tr>
<tr>
<td>13</td>
<td>0.709999</td>
<td>0.332311</td>
<td>39</td>
<td>0.268425</td>
<td>0.382866</td>
<td>Production of coke furnace products</td>
<td>13</td>
</tr>
<tr>
<td>14</td>
<td>0.725955</td>
<td>0.331518</td>
<td>40</td>
<td>0.286516</td>
<td>0.375733</td>
<td>Publication</td>
<td>14</td>
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<tr>
<td>15</td>
<td>0.741797</td>
<td>0.329012</td>
<td>41</td>
<td>0.304529</td>
<td>0.374107</td>
<td>Production of clothes except for fur clothes</td>
<td>15</td>
</tr>
<tr>
<td>16</td>
<td>0.757612</td>
<td>0.328458</td>
<td>42</td>
<td>0.322527</td>
<td>0.373772</td>
<td>Production of products from wood , cork and straw material</td>
<td>16</td>
</tr>
<tr>
<td>17</td>
<td>0.773360</td>
<td>0.327239</td>
<td>43</td>
<td>0.340498</td>
<td>0.373238</td>
<td>Production of essential precious metals and non-iron essential metals</td>
<td>17</td>
</tr>
<tr>
<td>18</td>
<td>0.789042</td>
<td>0.325495</td>
<td>44</td>
<td>0.358363</td>
<td>0.371024</td>
<td>Production of other metal fabric products and metalwork services activities</td>
<td>18</td>
</tr>
<tr>
<td>19</td>
<td>0.804615</td>
<td>0.323423</td>
<td>45</td>
<td>0.376198</td>
<td>0.3704</td>
<td>Production of machinery with general application</td>
<td>19</td>
</tr>
<tr>
<td>20</td>
<td>0.820115</td>
<td>0.321929</td>
<td>46</td>
<td>0.393906</td>
<td>0.367779</td>
<td>Production of telecommunication and computer communication devices</td>
<td>20</td>
</tr>
<tr>
<td>21</td>
<td>0.835552</td>
<td>0.320598</td>
<td>47</td>
<td>0.411463</td>
<td>0.36463</td>
<td>Processing of nuclear fuels</td>
<td>21</td>
</tr>
<tr>
<td>22</td>
<td>0.850951</td>
<td>0.319906</td>
<td>48</td>
<td>0.428565</td>
<td>0.355166</td>
<td>Production of television and television receivers , recorder and video and affiliated goods</td>
<td>22</td>
</tr>
<tr>
<td>23</td>
<td>0.86628</td>
<td>0.318351</td>
<td>49</td>
<td>0.445559</td>
<td>0.352939</td>
<td>Processing and painting fur</td>
<td>23</td>
</tr>
<tr>
<td>24</td>
<td>0.881459</td>
<td>0.315253</td>
<td>50</td>
<td>0.462546</td>
<td>0.352787</td>
<td>Publication of the recorded media</td>
<td>24</td>
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<td>25</td>
<td>0.896590</td>
<td>0.314313</td>
<td>51</td>
<td>0.479509</td>
<td>0.352302</td>
<td>Production of other chemicals products</td>
<td>25</td>
</tr>
<tr>
<td>26</td>
<td>0.92662</td>
<td>0.311544</td>
<td>52</td>
<td>0.491619</td>
<td>0.31206</td>
<td>Production of artificial fibers</td>
<td>52</td>
</tr>
<tr>
<td>27</td>
<td>0.956315</td>
<td>0.308308</td>
<td>53</td>
<td>0.513947</td>
<td>0.308418</td>
<td>Production of electrical lamps and lights</td>
<td>54</td>
</tr>
<tr>
<td>28</td>
<td>0.985867</td>
<td>0.305509</td>
<td>54</td>
<td>0.571156</td>
<td>0.308219</td>
<td>Metal casting</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>55</td>
<td>1.000013</td>
<td>0.293802</td>
<td>Production of all kinds of cloth and knitwear and crochets</td>
<td>58</td>
</tr>
</tbody>
</table>

**Study of Comparative Advantage of Rca Index Industries:**

It is necessary for the industrial investment to rank industries of the country for investment on the basis of production specialty index under special conditions of the country even with regard to strong industrial substructure in some industries but it is not enough condition. Attention to new and larger markets for industrial production in real sense and use of scale economies cause to increase scope of production and competing power of the country industries in addition to decrease of production costs. In fact, planning for industrial development with emphasis on foreign and large markets can reinforce industrial comparative advantages or create new advantages.
Attention to new and larger markets requires correct and accurate information about demand in this market. The substitute criterion which can fulfill this need well is symmetric revealed comparative advantage (RCA). In fact, symmetric revealed comparative advantage shows foreign demand of different products and can be basis for ability of a country to export different products. The said index which is called BALASSA index is obtained from ratio of specified product share (export) of a country to another country or a region to another region (Widgren, 2005).

$$RCA^i_a = \frac{X^i_a}{X^c}$$

In this index, m indicates combined export of 74 items of the produced products, I indicates each one of the developed countries which include Belgium, Canada, France, Italy, Japan, Luxemburg, Netherlands, Switzerland, England, United States of America and West Germany. C indicates return of the above country as single country. Therefore, variables of the above index can be defined as follows:

- RCA : revealed comparative advantage index i for the exported product a
- $X^i_a$: total value of exporting product a for country i
- $X^c$: total value of exporting 74 items of the products of the industrial country
- $X^m$: total value of exporting 74 items of the products of 11 industrial countries (Balassa, 1965).

Results of this index are given in table 2. As shown in this table, there are 58 industrial groups with export. Among these industrial groups, groups such as production and repair of all hydraulic vehicles, production of medical tools and measurement, control, testing and navigation tools and other purposes except optical tools, production of refined oil products, production of product from wood and cork and straw, products from tobacco, production of cloths except fur clothes have commercial specialty. On the other hand, one can declare that the country has comparative advantage for export of these products and can give products of these industrial groups to other countries in the world with lower expenses in comparison to other foreign competitors.

Conclusion:

Study of industrial structure of the country shows that most of the industries which have been reinforced during term of study and their growth speed has been higher. At present, they are regarded as basic industries of the country and their share in creation of value added is higher. These industries can be divided into two groups:

- The first group relates to the industries of which spatial coefficient is more than 1.5. These industries include production and processing and protection of meat, fruit, vegetables, oils and fats against degradation, production of products from tobacco, cigar, production of clothes except for fur clothes, production of shoes, production of paper, production of iron and steel stock material, production of other fabric products and metalwork service activities, production of nonmetal mineral products not classified in another place, production of medical tools and measurement, control, testing and navigation tools and other purposes except optical tools, recycle of wastes and metal scraps etc. The second group relates to the industries of which spatial coefficient is more than 1 and less than 1.5 and includes production of all kinds of clothes and Production of all kinds of clothe and knitwear and crochets, processing and painting fur, production of coke furnace products, Production of wristwatches and other watches).

Ranking of the industrial activities which has been obtained on the basis of production advantage indices and with inspiration of factor analysis and numerical taxonomy analysis techniques shows that industries with strong industrial structure has higher rank in terms of production advantage indices so that 10 out of 12 investment priorities (first group priorities) are among the activities of which industrial structure has been reinforced during term of study in terms of production advantage indices.

On the other hand, study of investment priorities in terms of commercial advantage and its comparison with investment priorities in terms of production advantage shows that 9 out of 12 industrial activities in which the country has commercial advantage in the world are the activities in which the country has production advantage. With regard to the mentioned case, one can classify industrial priorities of the country into three groups: The first group includes the activities which have production advantage and commercial advantage, the second group includes the activities which have production advantage but they don’t have commercial advantage and the third group includes the activities which have commercial advantage but they don’t have production advantage. Activities relating to production and repair of all hydraulic vehicles, production of essential chemicals etc, production of refined oil products, production of nonmetal minerals not classified in another place, production of iron and steel stock material, production of products from tobacco –cigar. Spinning, weaving and completion of textiles, production of paper and production of motor vehicles are regarded as the first group which has
production advantage and commercial advantage. This industrial group in the country has strong industrial structure. With regard to the fact that capital factor in the country has many limitations under present conditions and the country faces foreign currency limitations, therefore, investment in the industries which has suitable export power in addition to the higher value added has priority.

Table 2: ECA export comparative advantage index for industries of the country on the basis of three-digit code.

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Activity</th>
<th>Code</th>
<th>Quantity</th>
<th>Activity</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.218067</td>
<td>Production of iron and steel stock material</td>
<td>271</td>
<td>3.37302</td>
<td>Production, processing and protection of meat, fish, fruit, vegetables, oils and fats against degradation</td>
<td>151</td>
</tr>
<tr>
<td>1.751186</td>
<td>Production of essential precious metals and non-iron essential metals</td>
<td>272</td>
<td>0.021351</td>
<td>Production of dairy products</td>
<td>152</td>
</tr>
<tr>
<td>0</td>
<td>Metal casting</td>
<td>273</td>
<td>0.012267</td>
<td>Production of products from the milled grains and starch and starch products and fast food</td>
<td>153</td>
</tr>
<tr>
<td>0</td>
<td>Production of construction metal products, reservoirs, batteries and steam generators</td>
<td>281</td>
<td>0.580556</td>
<td>Production of other food products</td>
<td>154</td>
</tr>
<tr>
<td>0</td>
<td>Production of other metal fabric products and metalwork services activities</td>
<td>289</td>
<td>0.022595</td>
<td>Production of all kinds of beverage</td>
<td>155</td>
</tr>
<tr>
<td>1.294941</td>
<td>Production of machinery with general application</td>
<td>291</td>
<td>4.007401</td>
<td>Production of products from tobacco, cigar</td>
<td>156</td>
</tr>
<tr>
<td>2.025832</td>
<td>Production of machinery with special application</td>
<td>292</td>
<td>2.642227</td>
<td>Spinning, weaving and textiles completion</td>
<td>171</td>
</tr>
<tr>
<td>0.687057</td>
<td>Production of home appliances not classified in another place</td>
<td>293</td>
<td>1.195162</td>
<td>Production of other textiles</td>
<td>172</td>
</tr>
<tr>
<td>0</td>
<td>Production of office and calculating machinery</td>
<td>300</td>
<td>0.184186</td>
<td>Production of all kinds of cloth and knitwear and crochets</td>
<td>173</td>
</tr>
<tr>
<td>0.858119</td>
<td>Production of electric motors and generators and transformers</td>
<td>311</td>
<td>4.007401</td>
<td>Production of clothes except for fur clothes</td>
<td>181</td>
</tr>
<tr>
<td>1.393339</td>
<td>Production of electricity distribution and control devices</td>
<td>312</td>
<td>0</td>
<td>Processing and painting fur</td>
<td>182</td>
</tr>
<tr>
<td>1.557487</td>
<td>Production of insulated wire and cable</td>
<td>313</td>
<td>3.526558</td>
<td>Tanning and processing of leather and production of bag and baggage and tools and production of shoes</td>
<td>191</td>
</tr>
<tr>
<td>0.019259</td>
<td>Production of batteries, piles and primary batteries</td>
<td>314</td>
<td>0.517454</td>
<td>Production of shoes</td>
<td>192</td>
</tr>
<tr>
<td>0.215631</td>
<td>Production of electrical lamps and lights</td>
<td>315</td>
<td>0</td>
<td>Wood Sawing and planning</td>
<td>201</td>
</tr>
<tr>
<td>0.047375</td>
<td>Production of other electrical equipments not classified in another place</td>
<td>319</td>
<td>4.007754</td>
<td>Production of products from wood, cork and straw material</td>
<td>202</td>
</tr>
<tr>
<td>0.659321</td>
<td>Production of lamps and tube lamps and other electronic parts</td>
<td>321</td>
<td>4.007401</td>
<td>Production of paper</td>
<td>210</td>
</tr>
<tr>
<td>2.031493</td>
<td>Production of television and radio senders and telephone communication devices</td>
<td>322</td>
<td>0</td>
<td>Publication</td>
<td>221</td>
</tr>
<tr>
<td>1.363703</td>
<td>Production of television and television receivers, recorders and video and affiliated goods</td>
<td>323</td>
<td>0</td>
<td>Printing and service activities relating to printing</td>
<td>222</td>
</tr>
<tr>
<td>4.009513</td>
<td>Production of medical tools and measurement, control, testing and navigation tools and other purposes except optical tools</td>
<td>331</td>
<td>0</td>
<td>Publication of the recorded media</td>
<td>223</td>
</tr>
<tr>
<td>0</td>
<td>Production of optical and photography tools</td>
<td>332</td>
<td>0</td>
<td>Production of coke furnace products</td>
<td>231</td>
</tr>
<tr>
<td>0</td>
<td>Production of watches and other watches</td>
<td>333</td>
<td>4.007401</td>
<td>Production of refined oil products</td>
<td>232</td>
</tr>
<tr>
<td>3.62051</td>
<td>Production of motor vehicles</td>
<td>341</td>
<td>0</td>
<td>Processing of nuclear fuels</td>
<td>233</td>
</tr>
<tr>
<td>0.023698</td>
<td>Production of body, room making, for motor vehicles and production of trailer and half trailer</td>
<td>342</td>
<td>3.660677</td>
<td>Production of essential chemicals</td>
<td>241</td>
</tr>
<tr>
<td>0.387835</td>
<td>Production of parts and accessories for hydraulic vehicles</td>
<td>343</td>
<td>0.32494</td>
<td>Production of other chemical products</td>
<td>242</td>
</tr>
<tr>
<td>2.89798</td>
<td>Production and repair of all hydraulic vehicles</td>
<td>351</td>
<td>0.028597</td>
<td>Production of artificial fibers</td>
<td>243</td>
</tr>
<tr>
<td>0.237707</td>
<td>Production of other vehicles not specified in another place</td>
<td>359</td>
<td>2.656829</td>
<td>Production of rubber products except shoes</td>
<td>251</td>
</tr>
<tr>
<td>0.047233</td>
<td>Production of artifacts not classified in another place</td>
<td>367</td>
<td>1.373501</td>
<td>Production of plastic products except shoes</td>
<td>252</td>
</tr>
<tr>
<td>0</td>
<td>Recycling of wastes and metal scraps</td>
<td>371</td>
<td>0.39861</td>
<td>Production of glass and glassy products</td>
<td>261</td>
</tr>
<tr>
<td>0</td>
<td>Recycling of wastes and metal scraps</td>
<td>372</td>
<td>3.608835</td>
<td>Production of nonmetal minerals not classified in another place</td>
<td>269</td>
</tr>
</tbody>
</table>

The second group of industrial investment priorities includes the activities in which the country has production advantage in the world but they have no commercial advantage including production of construction metal products, reservoirs, batteries and steam generators, production of office and calculating machinery, production of shoes, production of other chemicals, processing and painting fur, publication of recorded media. These industries in the country have strong industrial structure and there is suitable demand in foreign markets for absorbing products of these industries. In any way, these industries in the country should be reinforced in terms of creation of value added to continue their successful attendance in global markets.

The third group of priorities of investment in industries include: production, processing and protection of meat, fruit, vegetables, oils and fats against degradation, production of electricity distribution and control devices, production of insulated wire and cable, production of rubber products except shoes, production of production of rubber products except shoes, production of...
machinery with special application. These industries have strong industrial structure in the country and have high ability to create value added; therefore, one can encourage investment in such activities and consider some facilities for export of products of these industrial groups. More simply, the country in these industries has production specialty and advantage and strong industrial structure but it has no suitable ability to export the product. In order to reinforce these industries, it is necessary to take supportive actions regarding export of their products.

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