Comparison between the results obtained from old and new activity classification in identifying key sectors of Iran economic

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Due to the rapid growth of technology, regional and international developments, the classification of international economic activities in certain time periods while maintaining the connection with the previous version, the revised and new versions are offered.

This review can be effects on the quality and results of research in various fields to improve the economy.
Providing classification in more detailed, moving the subsections between different levels of classification, the importance of new economic activities, adding new activities, could be make change in various fields of economic research.

This reformation in classification which is according to revision of International Standard Classification of Economic Activities even could effects on input-output table that is one of the important instruments to planning in every country.
The Input-output table has a significant place for planning and economic analysis as an instrument of economic. The importance of input-output table and its applications is very high which is now less country can be found that has not at least once attempted to provide it.

The input-output table shows the structure of production and consumption economy, in additional it is a tool that provides the most detailed possible interrelationships between economic sectors.
There are many considerations in preparing the Input-Output table such as table size and type of classification considered.

As the system of national accounts, the classification for input-output table in the Sections, ISIC and the classification for goods, CPC suggested.
Therefore, in the preparation of the 2001 input-output table of Iran for sections classification is based on the third edition of ISIC, (ISIC, REV.3) and the classification for products is based on the first version of the CPC that approved by the twenty-ninth session united nations statistical commission in 1997 (CPC.V.1.0). Moreover, in the preparation of input-output table of 2011 classification of ISIC, Rev 4 used.
As the input-output table is showing deal between different economic sections, directly is under the influence of economic activities, and any changes in this classification can effects on input-output table’s data.
In this article we identified the economic key sectors of Iran by using of input-output table that first time classified by ISIC, Rev.2 and second time classified by ISIC, Rev.3 to show that how the presentation of new revision of ISIC lead to different results in compared with old classification.

In the other words, we will show that the revision of classification can influence the input-output table that used in identifying the economic key sectors which in turn used in social and economic planning.
Methodology

In this paper for determining of economic key sectors, the backward and forward linkage that obtained from eigenvector method has been used. The new method of Eigenvector is based on Perron-Frobenius theory that has been used for positive Irreducible matrix. In this method left and right Eigenvector assigned to the maximum Eigenvalue.
• These vectors are the criteria for comparison of backward and forward linkage between sectors of economy.

• The reason for using of eigenvector method is that more researchers believe that in using of this method durability of sectors are considered.
Findings
Economic key sectors based on input-output table that classified by ISIC, Rev, 2

In this section, economic key sectors of Iran has identified based on input-output table that classified once by revision 2 and once again by revision 3.1 (ISIC, 3.1).

In identifying economic key sectors, when are used of input-output table that is classified by ISIC, Rev.2, the number of 15 and 8 sectors, respectively have normalized backward and forward linkage bigger than unit.
Also, the number of 5 sectors have both normalized backward and forward linkage bigger than unite that these sectors are considered as key sectors. These sectors concluded “Manufacture of wood and products of wood”, “Manufacture of paper and paper products”, “Manufacture of basic metals”, “Manufacture of machinery and equipment, tools and metal products” and “Electricity”. (table1). In fact, these sectors have higher durability in supply chin relative to other sectors.
This means that conduction of resources to these sectors can stimulate the economy and cause to economic growth.

<table>
<thead>
<tr>
<th>Row</th>
<th>Sectors</th>
<th>Backward linkage</th>
<th>Forward linkage</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Manufacture of wood and products of wood</td>
<td>2.82</td>
<td>27.85</td>
</tr>
<tr>
<td>10</td>
<td>Manufacture of printing and publishing, paper and paper products</td>
<td>3.41</td>
<td>7.92</td>
</tr>
<tr>
<td>13</td>
<td>Manufacture of basic metals</td>
<td>2.87</td>
<td>4.32</td>
</tr>
<tr>
<td>14</td>
<td>Manufacture of machinery and equipment, tools and metal products</td>
<td>9.33</td>
<td>1.53</td>
</tr>
</tbody>
</table>

**Table (1): economic key sectors of Iran based on input-output table-ISIC Rev, 2**
Economic key sectors based on input-output table that classified by ISIC, Rev, 3.1

In previous section the economic key sectors of Iran determined by data of 2011 based on input-output table with classification of ISIC, Rev, 2. In this section, same processes have performed with ISIC, Rev, 3.1. The results clearly shows that in this case number 6 and 14 sectors, respectively have normalized backward and forward linkage bigger than unit.
Also, the number of four sectors have both normalized backward and forward linkage bigger than unite that these sectors are considered as key sectors.

These sectors concluded “Manufacture of paper and paper products”, “Manufacture of machinery and equipment n.e.c.”, “Manufacture of machinery office, accounting and calculating machinery” and “Manufacture of motor vehicles, trailers and semi-trailers”. (Table2).
<table>
<thead>
<tr>
<th>row</th>
<th>sectors</th>
<th>Backward linkage</th>
<th>Forward linkage</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Manufacture of paper and paper products</td>
<td>1.41</td>
<td>12.90</td>
</tr>
<tr>
<td>21</td>
<td>Manufacture of machinery and equipment n.e.c.</td>
<td>2.1</td>
<td>1.64</td>
</tr>
<tr>
<td>22</td>
<td>Manufacture of machinery office, accounting and calculating machinery</td>
<td>1.02</td>
<td>1.28</td>
</tr>
<tr>
<td>26</td>
<td>Manufacture of motor vehicles, trailers and semi-trailers</td>
<td>40.5</td>
<td>3.57</td>
</tr>
</tbody>
</table>

Reference: finding of research
With Comparison of results of first and second sector together it clearly shows that the extracted key sectors from input-output table with difference versions of classification will be differ from each other.

The results show that revision of classification not only changes the rank of sectors but also the key sectors will be different from each other.
The difference in results observed in other studies could also be the basis for planning and decision is important.

Therefore, it is essential with the economic and social developments, the emergence of new businesses and technology, International Classification of economic activities will be reviewed.
Remaining issues/further research

According to affect of classification on quality of data and results of research and therefore, the affects of it on macroeconomic planning, it is suggested that in further research, investigate the effect of revision of classification on trend and structural break of time series that in providing of them the ISIC classification has been used (such as product price index).
Because it seems that in the case of structural break, it is necessary that the revision of ISIC classification be done cautious and with additional consideration.
Thank you for your attention