# Romania Industrial Competitiveness and China-Romania Cooperation

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*Abstract: The paper applies the model of Revealed Comparative Advantages (RCA) developed by Bela Balassa, uses data from UN COMTRADE database, and calculates RCA index for 7 broad industry sectors and 28 industries (at more detailed level) for both Romania and China. Based on the RCA indices, the paper further analysis what are the industries with more advantages in Romania and in China. Starting from the results of the comparative analysis, the article tries to derive some conclusions for future China-Romania cooperation.*

*Keywords: Romania, Revealed Comparative Advantage (RCA); China-Romania cooperation*

## 1. Introduction

A country's factor endowment structure determines the relative labor productivity of the domestic industry, which reflects the level of industrial competitiveness (Ricardo, 1951). Therefore, it is necessary to carry out the analysis of the industrial structure at a broader level looking at the factor endowments (Ohlin, 1933), in order to highlight the current industrial competitiveness of Romania. For the assessment of Romania's industry and industrial competitiveness, we have used the Revealed Comparative Advantage (RCA) approach (Balassa, 1965). The analysis of industrial sector has been conducted first at a broader level (7 categories), and then move to a more detailed level, combining 28 industrial sectors and 9 service sectors.

## 2. Analysis of competitiveness of broad industry sectors

### 2.1. Overview of gross industrial export

The mainstream domestic and foreign researches have always viewed the relative export level of the industry as a measure of industrial competitiveness. Therefore, it is necessary to make a comparative quantitative analysis of the various industries' export developments of in Romania, the EU and China, and to highlight the Romanian industrial characteristics. Fig.1 shows the statistical chart of the gross industrial export in Romania, the EU and China over the 2003-2014 period.

**Fig. 1   Statistical chart of exports of the industrial sector (hundred million USD)**
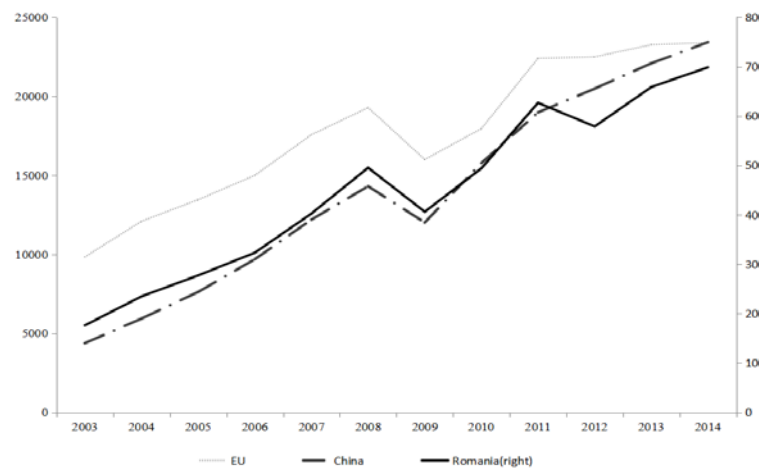


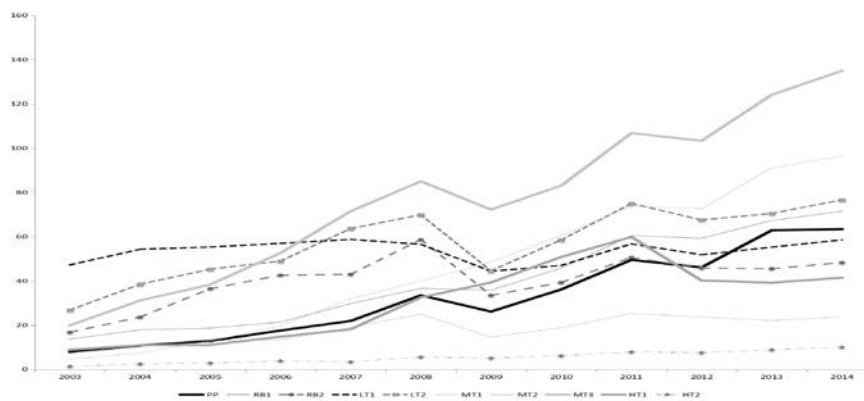Source: computed based on UN Comtrade database..

In terms of gross export value of the industrial sector, Romania, the EU and China registered an upward trend, with a drop in 2009, due to the world financial crisis and the debt crisis in Europe, but in recent years, with the smooth recovery of the world economy, the industrial exports reach the highest level in history. The gross exports of Romania, the EU and China have increased from USD 17.618, USD 983.918, USD 438.227 billion respectively, in 2003, to USD 69.877, USD 2339.709 and USD 2342.343 billion dollars, in 2014, with the average annual growth rates of 13.34%, 8.19% and 16.46% respectively. The industrial sector export growth rate of Romania is slightly lower than China's, but significantly higher than that of the overall EU, indicating that its industrial competitiveness within the EU is gradually emerging. In recent years, with the rapid development of some industries in Romania, the competitiveness has improved, and its export of the industrial sector shows a catch-up trend, growing as compared to the previous year by 13.77% in 2013 and by 6.06% in 2014 (compared to 3.38%, respectively 0.57% for the EU, for the same years).

## 2.2. Analysis of the export structure by broad industry sectors

The industrial structure is classified and analyzed through the difference in the industrial production factors and technical content. According to the production factors and technology content (Lall, 2006), the industries are classified into: **primary industry** (**PP**), **resource-intensive industry** (agriculture and forestry, **RB1**; other resource-intensive industries, **RB2**), **labour-intensive industry** (textile industry, **LT1**; other labour-intensive industries, **LT2**), **capital - intensive industry** (motor vehicle, **MT1**; processing industry, **MT2**; engineering industry, **MT3**), **technology-intensive industry** (electronics and electrical industry, **HT1**; other high-tech industries, **HT2**).

Fig.2 illustrates the industrial export structure of the Romanian industry in this broader classification. The Romanian industrial exports are more widely distributed, but they are mainly focused on capital-intensive and labour-intensive industries. Among them, the export scale of capital-intensive industry represented by China's technical engineering products is the largest (USD13.491 billion in 2014), followed by the motor vehicles (USD 9.632 billion in 2014) and other labour-intensive products (USD 7.662 billion in 2014). The growth of China's export of technical engineering products is the fastest (USD 13.491 billion in 2014), but the export scale of technology-intensive industry and China's technology processing industry is relatively small (USD 1.001 billion and USD 2.371 billion in 2014).
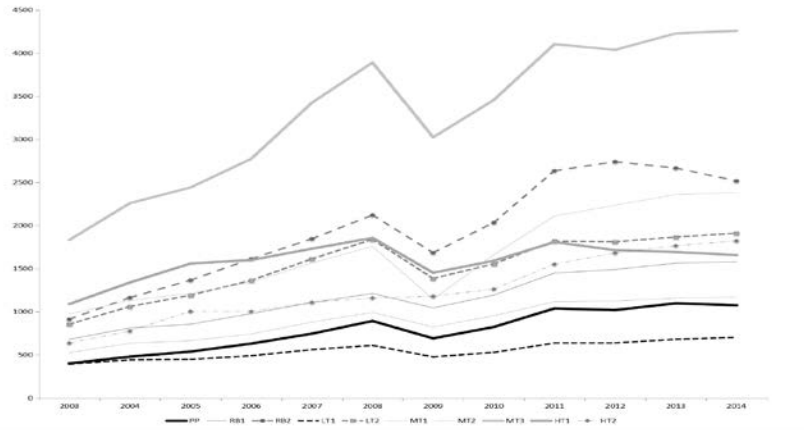
**Fig. 2  Romania's export structure, by broad industry sectors (hundred million USD)**



Source: computed using UN Comtrade database.

EU (Fig.3) is similar to Romania. In the broader classification for the industrial sector, the export scale of China's technical engineering industry and motor vehicle industry is relatively large, the primary products are moderate and the export scale of textile industry is relatively small. However, the technology-intensive industry with the smallest scale in Romania occupies a relatively high share in EU's industrial structure.
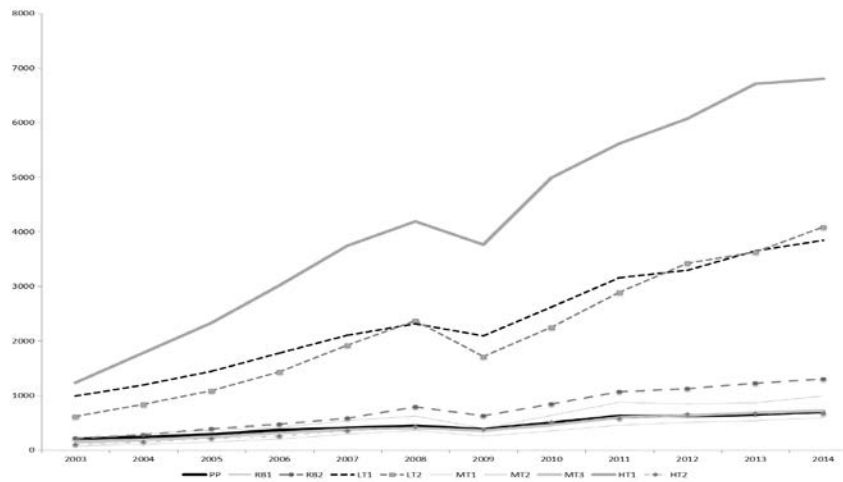
**Fig.3 EU's export structure, by broad industry sectors (hundred million USD)**



Source: computed based on the UN Comtrade database

China's export structure of industry in the broader classification (Fig.4) is widely different from that of Romania. In China, the export scale of electronics and electrical industry is the largest, while China's technical engineering industry and motor vehicle industry occupies a smaller share in the total export of the industry. It is worth mentioning that the scale of electronics and electrical industry is the smallest in the Romanian industrial structure, while the scale of China's technical engineering industry and the motor vehicle industry is the largest in the export structure of Romanian industry. From the point of view of export structure, the industries of the two countries have certain complementarities.

**Fig. 4  China's export structure, by broad industry sectors (hundred million USD)**



Data source: computed based on the UN Comtrade database

## 2.3. Analysis of comparative advantages of broad industry sectors

After investigating the industrial export structure of Romania, we continue the analysis by employing the Revealed Comparative Advantage (RCA) method in order to identify the comparative advantages of Romanian broad industry sectors vis-a-vis the EU and China. Revealed Comparative Advantage is a method used by the American economist, Balassa (1965) to measure the comparative advantages of trade in a country (area) in a certain class of goods or services, as evidenced by trade flows. In case of the analysis at industry level, RCA is represented by the ratio of the share of industry's export of the country to the share of the industry in the world trade, excluding the effect of aggregate national fluctuations and aggregate world fluctuations, which can better reflect the relative advantages after comparison with the export of a certain industry in a country and the world's average export level.

As shown in Table 1 below, according to the index of comparative advantages of Romania, the broad industry sectors with comparative advantages are ranked as following: agriculture and forestry (1.67), labour-intensive industry (LT1 and LT2 are respectively 1.76 and 1.20), motor vehicle industry (1.86), China's

technical engineering industry (1.53). The high-tech industry has the largest comparative disadvantage (HT1 and HT2 are respectively 0.44 and 0.36). The index of comparative advantage of technology-intensive industry is below 0.5, suggesting a significant comparative disadvantage of this branch. Overall, Romania has obvious competitive advantages in resources, labour and capital-intensive industries, but it lacks competitiveness in technology-intensive industry.

**Table 1. Revealed comparative advantages (RCA) of broad industry sectors in Romania**

|  | PP | RB1 | RB2 | LT1 | LT2 | MT1 | MT2 | MT3 | HT1 | HT2 |
|---|---|---|---|---|---|---|---|---|---|---|
| **2003** | 0.36 | **1.16** | 1.27 | **4.70** | **1.72** | **0.28** | 0.81 | 0.83 | 0.33 | 0.21 |
| **2004** | 0.37 | **1.19** | 1.23 | **4.38** | **1.81** | **0.35** | 0.90 | 0.97 | 0.30 | 0.28 |
| **2005** | 0.34 | **1.10** | 1.46 | **3.98** | **1.81** | **0.54** | 0.89 | **1.04** | 0.26 | 0.28 |
| **2006** | 0.35 | **1.14** | 1.43 | **3.69** | **1.69** | **0.75** | 0.85 | **1.25** | 0.30 | 0.31 |
| **2007** | 0.37 | **1.24** | 1.13 | **3.12** | **1.69** | **0.95** | 0.93 | **1.33** | 0.32 | 0.23 |
| **2008** | 0.41 | **1.28** | 1.13 | **2.68** | **1.53** | **1.08** | 0.97 | **1.32** | 0.52 | 0.31 |
| **2009** | 0.44 | **1.40** | 0.86 | **2.31** | **1.23** | **1.82** | 0.73 | **1.37** | 0.70 | 0.33 |
| **2010** | 0.47 | **1.55** | 0.76 | **2.10** | **1.39** | **1.76** | 0.76 | **1.33** | 0.74 | 0.34 |
| **2011** | 0.48 | **1.59** | 0.71 | **2.04** | **1.40** | **1.72** | 0.79 | **1.37** | 0.76 | 0.36 |
| **2012** | 0.48 | **1.71** | 0.70 | **2.07** | **1.34** | **1.78** | 0.82 | **1.44** | 0.54 | 0.35 |
| **2013** | 0.58 | **1.70** | 0.61 | **1.84** | **1.25** | **1.96** | 0.69 | **1.55** | 0.46 | 0.36 |
| **2014** | 0.65 | **1.67** | 0.64 | **1.76** | **1.20** | **1.86** | 0.69 | **1.53** | 0.44 | 0.36 |

Source: computed using UN Comtrade database.

Note: The RCA values in bold indicate "comparative advantages".

As shown in Table 2 below, the list of industrial sectors with comparative advantages in EU includes not only agriculture, forestry and capital-intensive industries, for which Romania has also comparative advantages, but it also includes high-tech industry, for which Romania has a disadvantage (HT2, 1.95).

**Table 2  Revealed comparative advantages (RCA) of broad industry sectors in the EU**

|  | PP | RB1 | RB2 | LT1 | LT2 | MT1 | MT2 | MT3 | HT1 | HT2 |
|---|---|---|---|---|---|---|---|---|---|---|
| **2003** | 0.33 | **1.04** | **1.23** | 0.70 | 0.98 | **1.07** | **1.04** | 1.37 | 0.71 | **1.69** |
| **2004** | 0.31 | **1.05** | **1.18** | 0.69 | 0.97 | **1.05** | **1.00** | 1.37 | 0.72 | **1.69** |
| **2005** | 0.29 | **1.04** | **1.12** | 0.66 | 0.98 | **1.05** | **0.96** | 1.36 | 0.76 | **2.01** |
| **2006** | 0.27 | **1.12** | **1.17** | 0.68 | 1.02 | **1.10** | **1.01** | 1.42 | 0.71 | **1.78** |
| **2007** | 0.29 | **1.06** | **1.11** | 0.68 | 0.98 | **1.07** | **0.99** | 1.46 | 0.71 | **1.67** |
| **2008** | 0.28 | **1.09** | **1.05** | 0.74 | 1.03 | **1.22** | **0.99** | 1.56 | 0.76 | **1.67** |
| **2009** | 0.30 | **1.04** | **1.10** | 0.63 | 0.97 | **1.09** | **1.05** | 1.46 | 0.66 | **1.92** |
| **2010** | 0.30 | **1.11** | **1.09** | 0.65 | 1.01 | **1.33** | **1.06** | 1.52 | 0.64 | **1.91** |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **2011** | 0.28 | **1.07** | **1.04** | 0.64 | 0.95 | **1.37** | **0.97** | **1.47** | 0.64 | **1.99** |
| **2012** | 0.28 | **1.11** | **1.08** | 0.65 | 0.93 | **1.41** | **1.00** | **1.45** | 0.60 | **2.01** |
| **2013** | 0.29 | **1.12** | **1.02** | 0.64 | 0.94 | **1.44** | **1.03** | **1.49** | 0.56 | **2.02** |
| **2014** | 0.33 | **1.10** | **0.99** | 0.63 | 0.89 | **1.37** | **1.02** | **1.45** | 0.52 | **1.95** |

Source: computed using UN Comtrade database.

Note: The RCA values in bold indicate "comparative advantages"

**Table 3: Revealed comparative advantages (RCA) of broad industry sectors in China**

| | PP | RB1 | RB2 | LT1 | LT2 | MT1 | MT2 | MT3 | HT1 | HT2 |
|---|---|---|---|---|---|---|---|---|---|---|
| **2003** | 0.38 | 0.49 | 0.65 | **3.95** | **1.58** | 0.17 | 0.84 | 0.24 | **1.81** | 0.56 |
| **2004** | 0.31 | 0.49 | 0.58 | **3.80** | **1.56** | 0.20 | 0.96 | 0.23 | **1.94** | 0.64 |
| **2005** | 0.27 | 0.51 | 0.56 | **3.77** | **1.58** | 0.22 | 0.92 | 0.24 | **2.01** | 0.75 |
| **2006** | 0.25 | 0.55 | 0.53 | **3.84** | **1.65** | 0.25 | 0.88 | 0.25 | **2.06** | 0.69 |
| **2007** | 0.23 | 0.52 | 0.50 | **3.69** | **1.68** | 0.29 | 0.87 | 0.23 | **2.20** | 0.77 |
| **2008** | 0.18 | 0.49 | 0.53 | **3.79** | **1.79** | 0.33 | 0.84 | 0.22 | **2.32** | 0.82 |
| **2009** | 0.22 | 0.47 | 0.54 | **3.69** | **1.60** | 0.32 | 0.67 | 0.23 | **2.26** | 0.82 |
| **2010** | 0.20 | 0.48 | 0.51 | **3.67** | **1.67** | 0.32 | 0.80 | 0.23 | **2.27** | 0.88 |
| **2011** | 0.20 | 0.52 | 0.50 | **3.75** | **1.78** | 0.35 | 0.90 | 0.25 | **2.35** | 0.87 |
| **2012** | 0.18 | 0.52 | 0.48 | **3.71** | **1.92** | 0.35 | 0.82 | 0.25 | **2.31** | 0.86 |
| **2013** | 0.18 | 0.51 | 0.49 | **3.62** | **1.92** | 0.34 | 0.81 | 0.25 | **2.34** | 0.80 |
| **2014** | 0.21 | 0.50 | 0.51 | **3.44** | **1.91** | 0.34 | 0.86 | 0.24 | **2.15** | 0.71 |

Source: computed using UN Comtrade database.

Note: The RCA values in bold indicate "comparative advantages"

As shown in Table 3 above, China has a comparative advantage in the labour-intensive industry and the electronics and electrical industry (HT1, 2.15). Economic and trade cooperation between Romania and China can effectively compensate Romania's disadvantage of electronics and electrical industry, while the advantages of Romania's agriculture and forestry industry and capital-intensive industry can make up for China's deficiencies in the field, thus achieving mutually beneficial development.

# 3. Analysis of industrial competitiveness at detailed level

## 3.1. Industrial competitiveness of 28 industrial sectors

In this section, the analysis is using the Revealed Comparative Advantage indices for Romania, the EU and China, computed using the UN Comtrade database, according to the classification by 28 industrial sectors.

As shown in Table 4, Romania's industries with core competitiveness are characterized by capital-intensive or resource-intensive elements, which are, respectively, tobacco processing, wood processing and bamboo and rattan grass, rubber, furniture, leather fur and down feather, clothing and other fiber products. In addition, Romania has comparative advantages in the textiles, chemical fiber, ferrous metal smelting and

rolling, metal products, general machinery, transportation equipment and electrical machinery and equipment, with stronger industrial competitiveness.

However, the disadvantages of some labour-intensive or technology-intensive industries in Romania are also very prominent. It is the case mainly of stationery and sporting, non-metallic minerals, professional equipment, instrumentation and stationery & office machinery and beverages. In addition, Romania has a very weak competitiveness in plastics industry, non-ferrous metal smelting and rolling processing industry, paper and paper products industry and food processing industry.

**Table 4: Revealed comparative advantages (RCA) of 28 industrial sectors in Romania**

| S/N | Industry | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Food processing | 0.27 | 0.30 | 0.29 | 0.28 | 0.28 | 0.31 | 0.44 | 0.49 | 0.53 | 0.54 | 0.53 | 0.51 |
| 2 | Beverages | 0.27 | 0.24 | 0.23 | 0.28 | 0.32 | 0.47 | 0.30 | 0.30 | 0.30 | 0.30 | 0.29 | 0.29 |
| 3 | Tobacco processing | 0.21 | 0.05 | 0.08 | 0.21 | *2.89* | *5.17* | *6.67* | *6.36* | *6.33* | *5.96* | *5.95* | *7.40* |
| 4 | Textile industry | **1.02** | **1.05** | **1.15** | **1.34** | **1.32** | **1.25** | **1.22** | **1.17** | **1.14** | **1.19** | **1.13** | **1.10** |
| 5 | Clothing and fiber products manufacturing | *7.66* | *7.25* | *6.28* | *5.31* | *4.21* | *3.56* | *2.86* | *2.58* | *2.48* | *2.60* | *2.23* | *2.10* |
| 6 | Leather fur and down feather | *7.04* | *6.15* | *5.67* | *5.45* | *4.67* | *4.02* | *3.48* | *3.13* | *3.01* | *2.78* | *2.48* | *2.35* |
| 7 | Wood processing, bamboo and rattan grass | *3.34* | *3.49* | *3.34* | *3.42* | *3.41* | *3.44* | *3.71* | *4.12* | *4.04* | *4.77* | *4.98* | *4.65* |
| 8 | Furniture | *4.37* | *4.43* | *4.23* | *4.13* | *4.05* | *3.74* | *3.73* | *3.55* | *3.56* | *3.43* | *3.48* | *3.60* |
| 9 | Paper and paper products | 0.98 | 0.94 | 0.79 | 0.77 | 0.76 | 0.65 | 0.63 | 0.65 | 0.61 | 0.72 | 0.71 | 0.75 |
| 10 | Recorded media in the printing industry | 0.19 | 0.30 | 0.30 | 0.30 | 0.31 | 0.29 | 0.33 | 0.37 | 0.44 | 0.59 | 0.57 | 0.55 |
| 11 | the stationery and sporting goods | 0.75 | 0.60 | 0.51 | 0.43 | 0.49 | 0.52 | 0.48 | 0.49 | 0.45 | 0.44 | 0.36 | 0.33 |
| 12 | Petroleum processing and coking industry | 2.28 | 1.97 | 2.57 | 2.18 | 1.63 | 1.52 | 1.16 | 0.94 | 0.87 | 0.83 | 0.77 | 0.92 |
| 13 | Chemical raw materials and chemicals | 0.61 | 0.71 | 0.73 | 0.73 | 0.70 | 0.73 | 0.46 | 0.51 | 0.56 | 0.56 | 0.44 | 0.42 |
| 14 | Pharmaceutical | 0.05 | 0.05 | 0.06 | 0.06 | 0.11 | 0.18 | 0.37 | 0.52 | 0.59 | 0.71 | 0.66 | 0.54 |
| 15 | Chemical fiber | 0.14 | 0.19 | 0.18 | 0.32 | **1.03** | **1.26** | **1.53** | **1.66** | **1.79** | **1.92** | **1.70** | **1.64** |
| 16 | Rubber | *2.22* | *2.30* | *2.47* | *2.59* | *3.27* | *3.66* | *3.81* | *3.95* | *4.07* | *4.27* | *4.33* | *4.34* |
| 17 | Plastic | 0.31 | 0.35 | 0.42 | 0.54 | 0.51 | 0.55 | 0.54 | 0.61 | 0.67 | 0.71 | 0.75 | 0.77 |
| 18 | Non - metallic minerals | 0.68 | 0.56 | 0.46 | 0.47 | 0.40 | 0.30 | 0.27 | 0.27 | 0.26 | 0.29 | 0.24 | 0.24 |
| 19 | Ferrous metal smelting and rolling | **3.03** | **3.09** | **2.95** | **2.46** | **2.35** | **1.98** | **1.51** | **1.86** | **1.87** | **1.76** | **1.48** | **1.41** |
| 20 | Nonferrous metal smelting and rolling | 1.16 | 1.14 | 1.07 | 1.02 | 1.04 | 0.95 | 0.65 | 0.65 | 0.68 | 0.79 | 0.78 | 0.74 |
| 21 | Metalwork | 0.94 | 0.97 | **1.07** | **1.23** | **1.34** | **1.31** | **1.21** | **1.36** | **1.42** | **1.41** | **1.30** | **1.27** |
| 22 | Ordinary machinery | 0.69 | 0.88 | 0.84 | 1.00 | **1.13** | **1.06** | **1.05** | **1.07** | **1.13** | **1.17** | **1.30** | **1.28** |
| 23 | Professional equipment | 0.31 | 0.31 | 0.35 | 0.40 | 0.39 | 0.45 | 0.43 | 0.34 | 0.31 | 0.36 | 0.36 | 0.42 |
| 24 | Transportation equipment | 0.48 | 0.55 | 0.71 | 0.92 | **1.07** | **1.20** | **1.82** | **1.62** | **1.56** | **1.60** | **1.79** | **1.66** |
| 25 | Electrical machinery and equipment | 0.81 | 0.92 | **1.07** | **1.24** | **1.35** | **1.51** | **1.41** | **1.34** | **1.49** | **1.53** | **1.43** | **1.48** |
| 26 | Electronic and communication equipment | 0.38 | 0.32 | 0.20 | 0.17 | 0.21 | 0.52 | 0.95 | 1.17 | 1.18 | 0.66 | 0.54 | 0.49 |
| 27 | Instrumentation and stationery & office machinery | 0.13 | 0.12 | 0.20 | 0.32 | 0.28 | 0.40 | 0.39 | 0.39 | 0.42 | 0.40 | 0.39 | 0.42 |
| 28 | Others | 0.13 | 0.11 | 0.17 | 0.09 | 0.40 | 0.40 | 0.39 | 0.38 | 0.40 | 0.61 | 0.81 | 0.64 |

Source: computed using UN Comtrade database.

Note: The RCA values in bold indicate the industries with "comparative advantages"; those in bold and italic indicate that the "comparative advantages" of the industry are more prominent; regular fonts for RCA values is used for the disadvantaged industries.

## 3.2. Analysis of horizontal comparison on industrial competitiveness at detailed level

With the rank of competitiveness of the industrial sector in Romania as a reference, the rank of industries in EU and China are shown in Table 5.

**Table 5: Comparison of competitiveness rank of 28 industrial sectors in Romania, the EU and China**

| Industry | Romanian rank | EU's rank | Chinese Rank |
|---|---|---|---|
| Tobacco processing | 1 | 12 | 28 |
| Wood processing and bamboo rattan grass | 2 | 14 | 8 |
| Rubber | 3 | 18 | 13 |
| Furniture | 4 | 15 | 5 |
| Leather fur and down feather | 5 | 19 | 3 |
| Clothing and other textile products | 6 | 26 | 1 |
| Transportation equipment | 7 | 6 | 23 |
| Chemical fiber | 8 | 27 | 14 |
| Electrical machinery and equipment | 9 | 23 | 7 |
| Ferrous metal smelting and rolling processing | 10 | 20 | 12 |
| General machinery | 11 | 4 | 16 |
| Metalwork | 12 | 8 | 9 |
| Textile | 13 | 25 | 4 |
| Petroleum processing and coking | 14 | 13 | 25 |
| Plastics | 15 | 17 | 11 |
| Paper and paper products | 16 | 9 | 22 |
| Non-ferrous metal smelting and rolling processing | 17 | 22 | 21 |
| Others | 18 | 5 | 17 |
| Printing and reproduction of recorded media | 19 | 10 | 20 |
| Medical | 20 | 2 | 27 |
| Food processing | 21 | 21 | 24 |
| Electronic and communication equipment | 22 | 28 | 2 |
| Professional equipment | 23 | 3 | 18 |
| Chemical materials and chemical product | 24 | 7 | 19 |
| Instrumentation and stationery & office machinery | 25 | 16 | 10 |
| Stationery and sporting goods | 26 | 24 | 6 |
| Beverages | 27 | 1 | 26 |
| Non-metallic minerals | 28 | 11 | 15 |

Source: computed using UN Comtrade database.

Note: RCA in bold indicate the industries with "comparative advantages"; the values in italic indicate the disadvantaged industries.

According to the RCA values, Romania's competitive industries are those ranked in the top 13, while the industries with the rank between 14 to 28 do not have competitive advantages and their competitiveness is getting lower and lower.

There are 13 industries with competitive advantages in Romania, including four industries with competitive advantages also in the EU, namely tobacco processing industry, transportation equipment industry, general machinery industry and metal product industry. Therefore, these industries are facing competition within the EU. However, the EU has weak competitiveness in the wood processing and bamboo rattan grass industry, rubber industry, furniture industry, leather fur and down feather industry, clothing and other fiber products industry, chemical fiber industry, electrical machinery and equipment industry, ferrous metal smelting and rolling processing industry and textile industry, while Romania still has an advantage in these nine industries. For the top 13 advantaged industries in Romania, China has three industries with weak competitive advantages, including tobacco processing industry, transportation equipment industry and general machinery industry, and these industries are ranked after China's industrial rankings. There is a need to actively carry out economic and trade cooperation between China and Romania to promote the development of these industries, which is conducive to the strengthening of the industrial structure, optimization and value chain upgrading, and it represents also the only way to enhance China's industrial competitiveness.

Among the 15 industries with relatively weak industrial competitiveness in Romania, China has stronger industrial competitiveness in five industries, namely: plastics, electronic and communication equipment, instrumentation and stationery & office machinery, stationery and sporting goods and non-metallic mineral products. These industries have capital-intensive or technology-intensive endowment, with possibility to discuss the industry connection in Sino-Romanian economic and trade cooperation.

## 4. Suggestions for enhancing the industrial cooperation between China and Romania

The sectoral analysis indicates that Romania's industries with competitive advantages could be ranked as following: tobacco processing, wood processing and bamboo rattan grass, rubber, furniture, leather fur and down feature, clothing and other fiber products, chemical fiber, electrical machinery and equipment, ferrous metal smelting and rolling processing, textiles and other (13 industrial sectors in total), whilst with weak competitiveness are concerned the oil processing and coking industry, plastics industry, electronics and communication equipment industry, instrumentation and stationery & office machinery, stationary and sporting goods industry, non-metallic mineral industry and other 15 industrial sectors.

Because China's overall industrial competitive advantages are mainly in the labour-intensive and technology-intensive industries, which are the weakness of Romania's industrial competitiveness and by contrast, Romania has clear advantages in capital-intensive and resource-intensive industries that are relatively weak in China, it is suggested that Sino-Romanian economic and trade cooperation might be carried out as "industrial connection and industrial cooperation", in order to put in practice the vision of complementing the bilateral industries, optimizing the industrial structure, improving the industrial value chain and enhancing the industrial competitiveness.

The starting point for enhancing industrial connection between China and Romania could be a mixture of two approaches:
1) "Industrial connection and industrial cooperation" is concentrated in the industries with "Romania's advantages and China's disadvantages", determining complementary effects in the industry. In accordance with the gap between advantages and disadvantages, it would be appropriate for tobacco processing industry, transportation equipment industry and general machinery industry;
2) "Industrial connection and industrial cooperation" is concentrated in the industries with "China's advantages, Romania's disadvantages", to enhance the bilateral industrial competitiveness. In accordance with the gap between advantages and disadvantages, it could be applied for plastic industry, electronics and communication equipment industry, instrumentation and stationery & office machinery, stationery and sporting goods industry and non-metallic mineral industry.

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