

The 5th Korea-Iran Cooperation Forum

Economic and Trade Cooperation Opportunity between Iran and Korea

September 5, 2017

Jae-Wook JUNG, Ph.D.
(jwjung@kiep.go.kr)

Associate Research Fellow

KIEP Africa and the Middle East Team

Korea
Institute for International
Economic
Policy

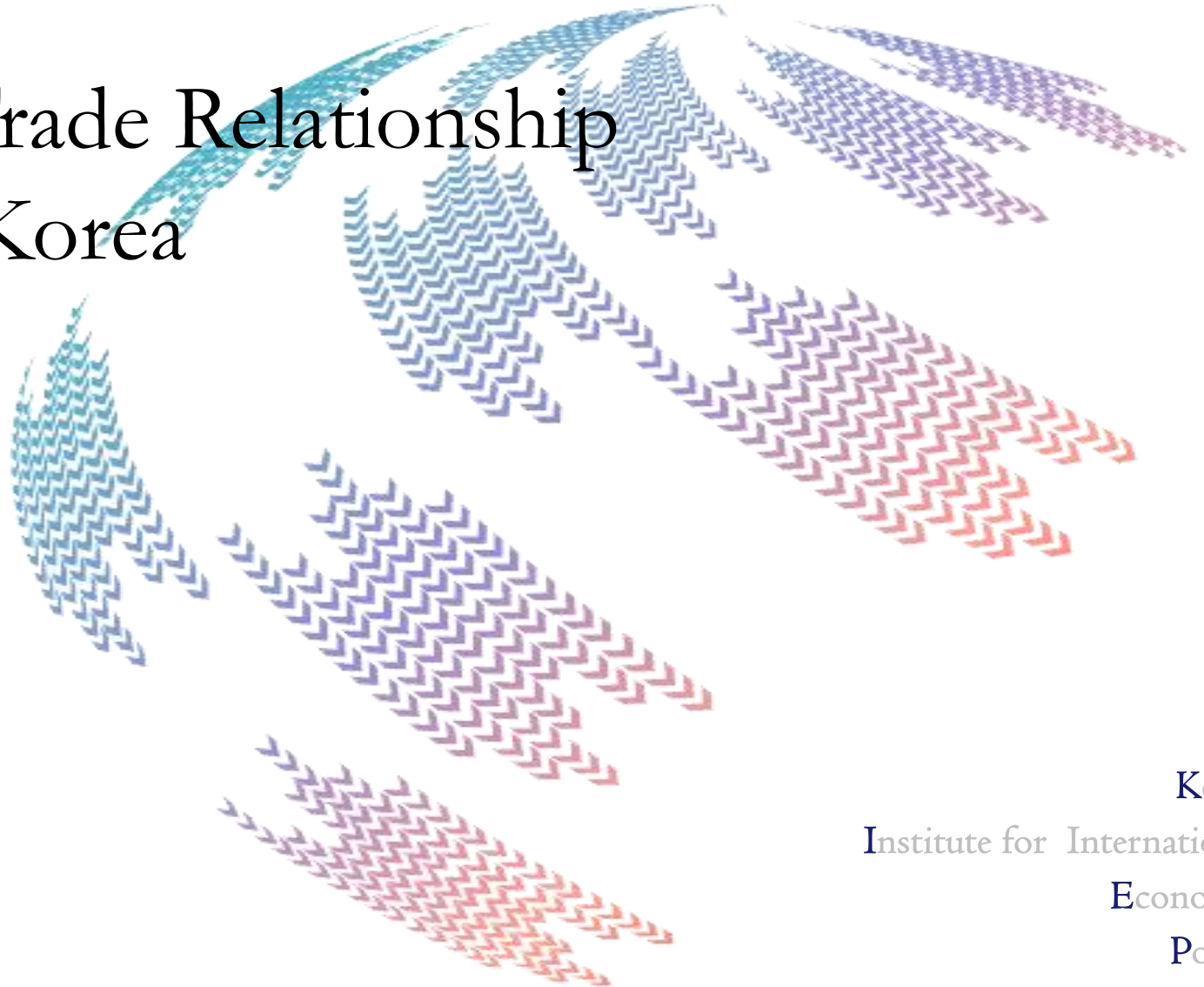


Contents

- I. Economic and Trade Relationship between Iran and Korea
- II. Trade Dynamics after the Sanction lifted
- III. Potential Area of Cooperation based on RCA Analysis
- IV. Potential Area of Cooperation based on Product Space Analysis
- V. Policy Suggestions for a Sustainable Partnership between Iran and Korea

Korea
Institute for International
Economic
Policy

I. Economic and Trade Relationship between Iran and Korea

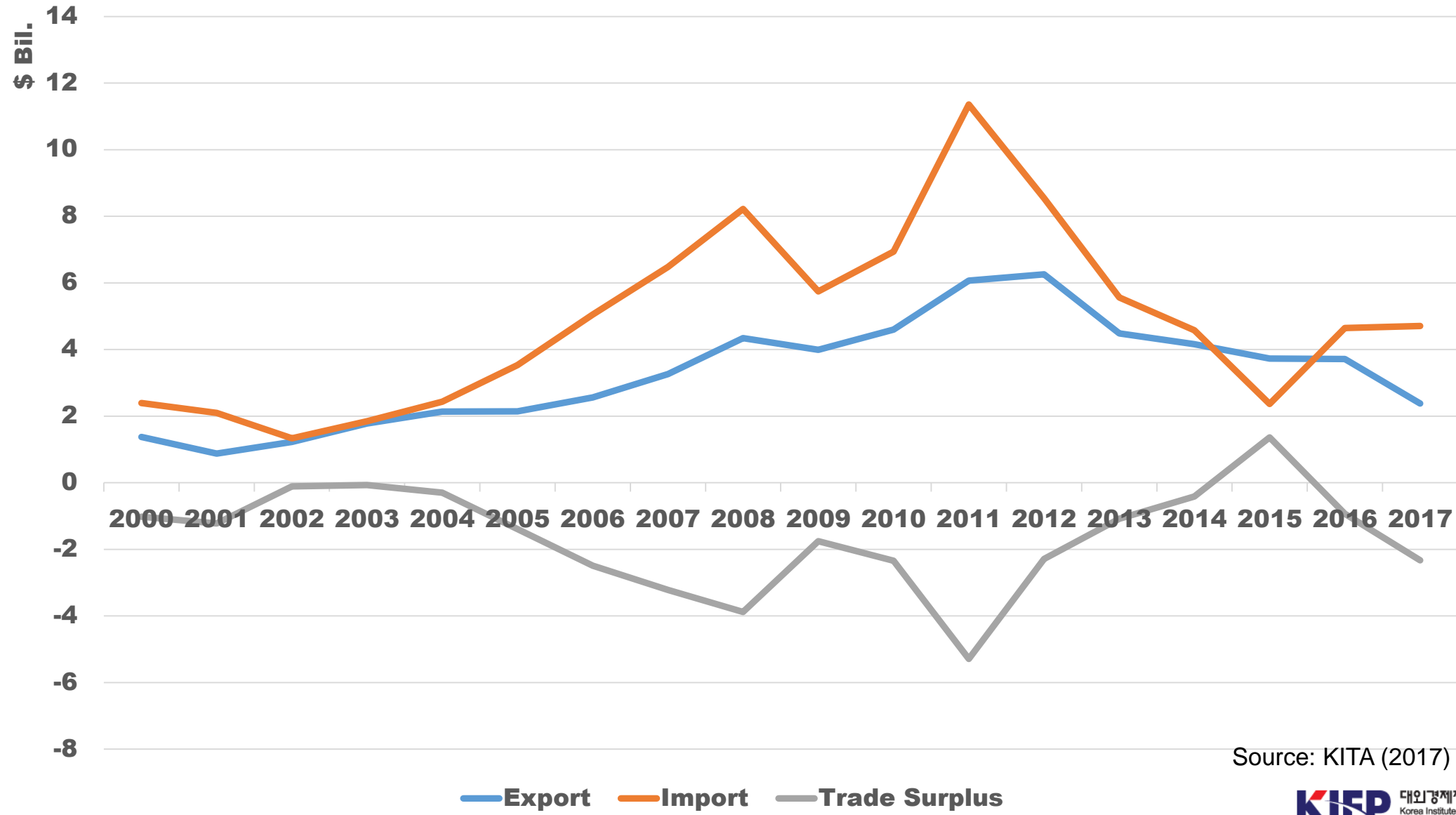


Korea
Institute for International
Economic
Policy

Economic and Trade Relationship between Iran and Korea

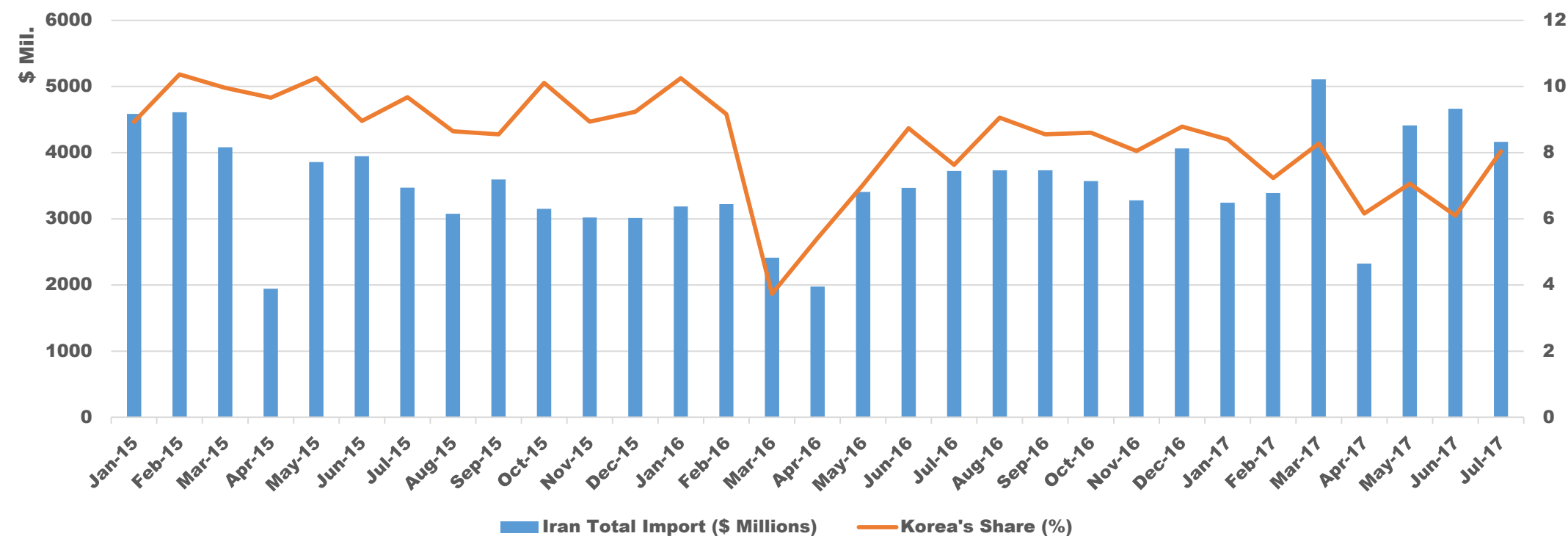
- Iran was South Korea's main crude oil provider before the sanction.
- South Korea is Iran's top-3 exporter while Iran is Korea's 4th largest importer from the Middle East (July-2017).
- Iran has been a primary construction partner of Korea in the Middle East since 1970s.

Korea's Trade with Iran



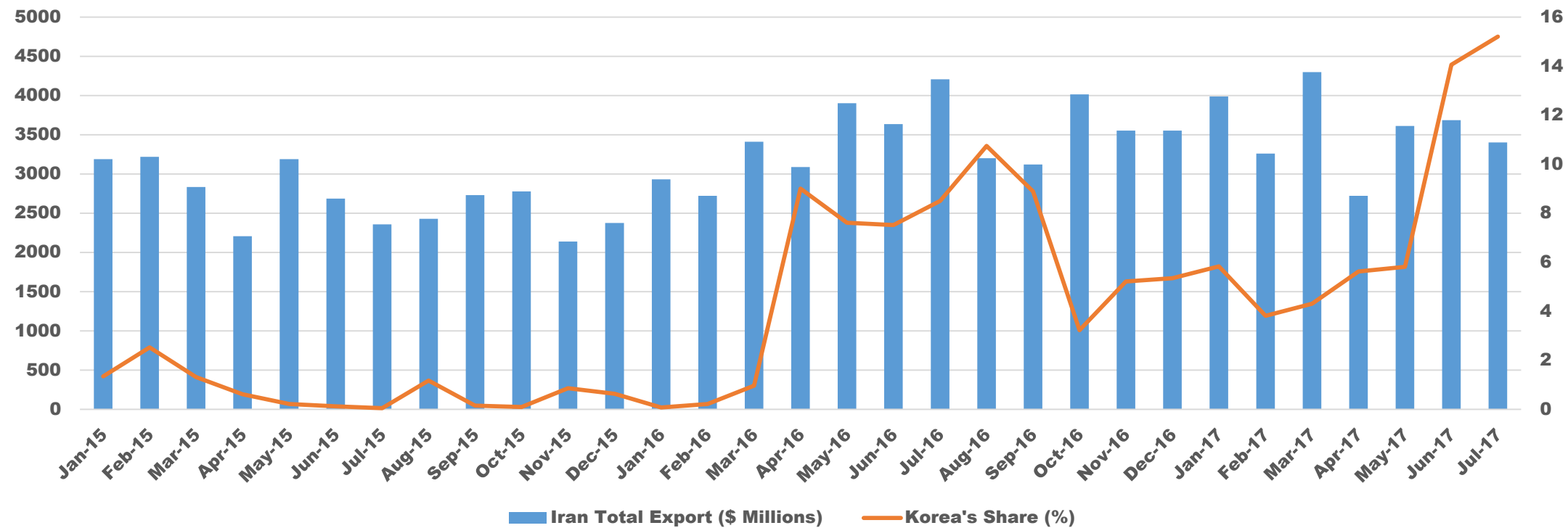
Source: KITA (2017)

Recent Import of Iran and Korea's Share



| Rank (Jul-2017) | Country | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017(-July) |
|--------------------|-------------|------|------|------|------|------|------|------|--------------|
| 1 | China | 8.9 | 11.9 | 14.6 | 18.8 | 23.4 | 25.9 | 24.4 | 24.4 |
| 2 | UAE | 31.9 | 31.4 | 22.4 | 20.1 | 22.1 | 18.3 | 15.1 | 14.4 |
| 3 | South Korea | 5.9 | 7.8 | 8.8 | 8.4 | 8.0 | 9.5 | 8.1 | 7.4 |
| 4 | Turkey | 5.5 | 5.1 | 6.9 | 7.5 | 7.3 | 7.6 | 6.8 | 6.1 |
| 5 | Germany | 6.9 | 6.8 | 5.1 | 5.3 | 4.8 | 4.3 | 5.7 | 5.9 |

Recent Export of Iran and Korea's Share



| Rank (Jul-2017) | Country | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017(-July) |
|--------------------|-------------|------|------|------|------|------|------|------|--------------|
| 1 | China | 17.6 | 17.4 | 16.1 | 22.3 | 26.4 | 22.1 | 19.3 | 21.8 |
| 2 | UAE | 13.7 | 13.8 | 12.6 | 11.4 | 10.7 | 14.3 | 16.1 | 16.0 |
| 3 | Iraq | 16.0 | 14.1 | 18.6 | 19.5 | 17.3 | 17.5 | 15.7 | 14.3 |
| 4 | South Korea | 2.0 | 3.6 | 4.0 | 1.0 | 0.8 | 0.8 | 5.7 | 7.8 |
| 5 | India | 6.6 | 8.3 | 8.1 | 7.9 | 6.3 | 8.4 | 6.4 | 6.4 |

Source: IRICA

Korea's Construction Contract in Iran



Source: Korea International Construction Information Service

II. Trade Dynamics after the Sanction lifted



Korea
Institute for International
Economic
Policy

Trade Dynamics after the Sanction lifted

- After JCPOA agreement was implemented, Iran's export has increased widely.
- South Korea mainly imports oil and raw mining materials from Iran and exports automobiles and their parts, iron steel, electronic appliances.
- South Korea mostly competes with China in Iranian import product markets recently.

Main Product of Korea's Export to Iran

| Rank | HS-code | Product | Export in 2016 (\$ Thousands) | Export in 2017 (\$ Thousands, -July) | Portion in total export to Iran(%) | Annual Change (%) |
|--------------|---------|---|----------------------------------|---|---------------------------------------|----------------------|
| Total Export | - | - | 3,716,567 | 2,377,124 | 100.0 | 24.9 |
| 1 | 8708 | Parts of Motor Vehicles | 340,932 | 339,861 | 14.3 | 79.8 |
| 2 | 8703 | Motor Cars and Vehicles for the Transport of Persons | 368,749 | 248,588 | 10.5 | 68.9 |
| 3 | 3907 | Polyacetals, Other Polyethers | 182,798 | 100,122 | 4.2 | 21.4 |
| 4 | 4810 | Paper and Paperboard | 151,022 | 98,202 | 4.1 | 12.2 |
| 5 | 8418 | Refrigerators, Freezers | 163,995 | 94,285 | 4.0 | 43.5 |
| 6 | 7209 | Flat-rolled Iron and Nonalloy Steel, Cold- rolled | 39,308 | 78,836 | 3.3 | 595.8 |
| 7 | 7210 | Flat-rolled Iron and Nonalloy Steel, Coted | 70,801 | 69,362 | 2.9 | 117.9 |
| 8 | 9013 | LCD, Lasers, Other Optical Appliances | 90,847 | 51,646 | 2.2 | -1.8 |
| 9 | 8517 | Telephone Sets including Telephones for Cellular Networks or for Wireless Networks | 85,172 | 49,017 | 2.1 | 18.3 |
| 10 | 8415 | Air Conditioning Machines | 72,969 | 43,611 | 1.8 | -32.1 |

Source: KITA (2017)

Main Product of Iran's Export to Korea

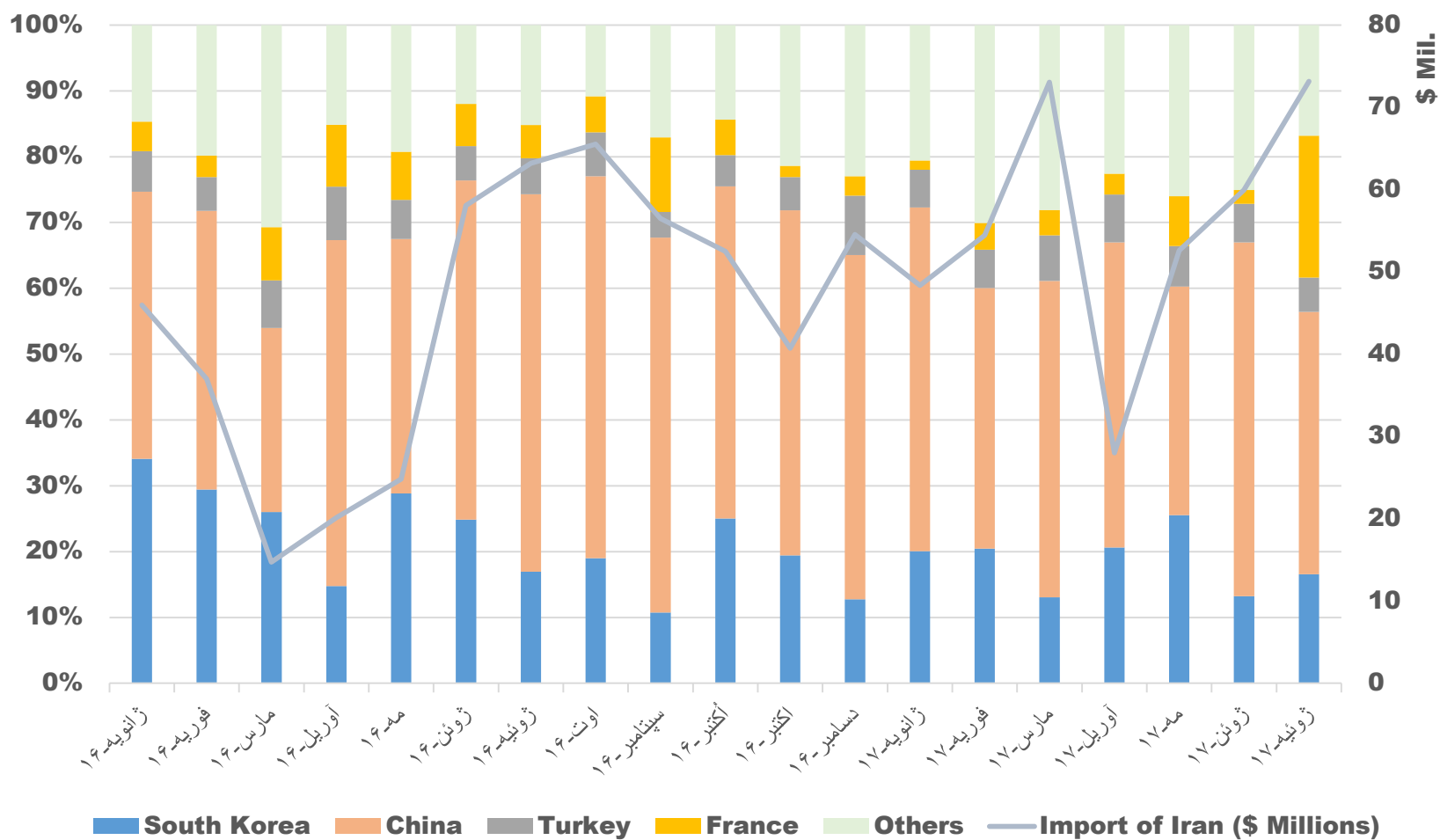
| Rank | HS-code | Product | Export in 2016 (\$ Thousands) | Export in 2017 (\$ Thousands, -July) | Portion in total exp ort to Iran(%) | Annual Change(%) |
|--------------|---------|-----------------|----------------------------------|---|--|------------------|
| Total Export | - | - | 4,647,659 | 4,706,493 | 100.0 | 122.4 |
| 1 | 2709 | Petroleum oil | 4,546,637 | 4,625,168 | 98.3 | 122.2 |
| 2 | 7901 | Zinc | 17,789 | 18,576 | 0.4 | 574.1 |
| 3 | 7404 | Copper | 27,655 | 17,804 | 0.4 | 37.3 |
| 4 | 7801 | Lead | 7,665 | 10,882 | 0.2 | 353.2 |
| 5 | 2711 | Petroleum Gases | 15,995 | 6,528 | 0.1 | 158.3 |

Institute for International
Economic
Policy



Source: KITA (2017)

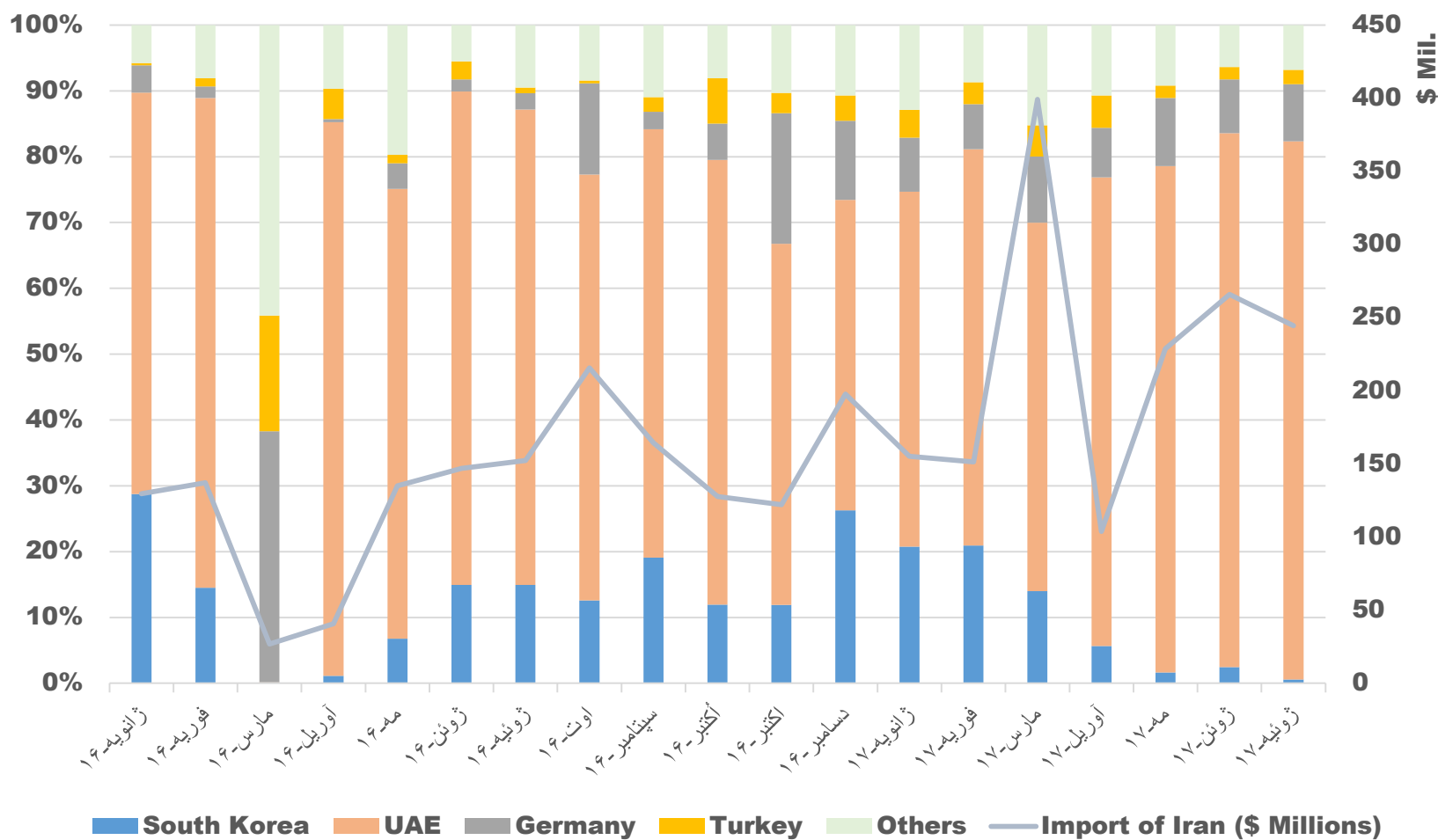
Iran's Import of HS:8708 and Main Exporters' Share



HS8708: Parts of Motor Vehicles

Source: IRICA

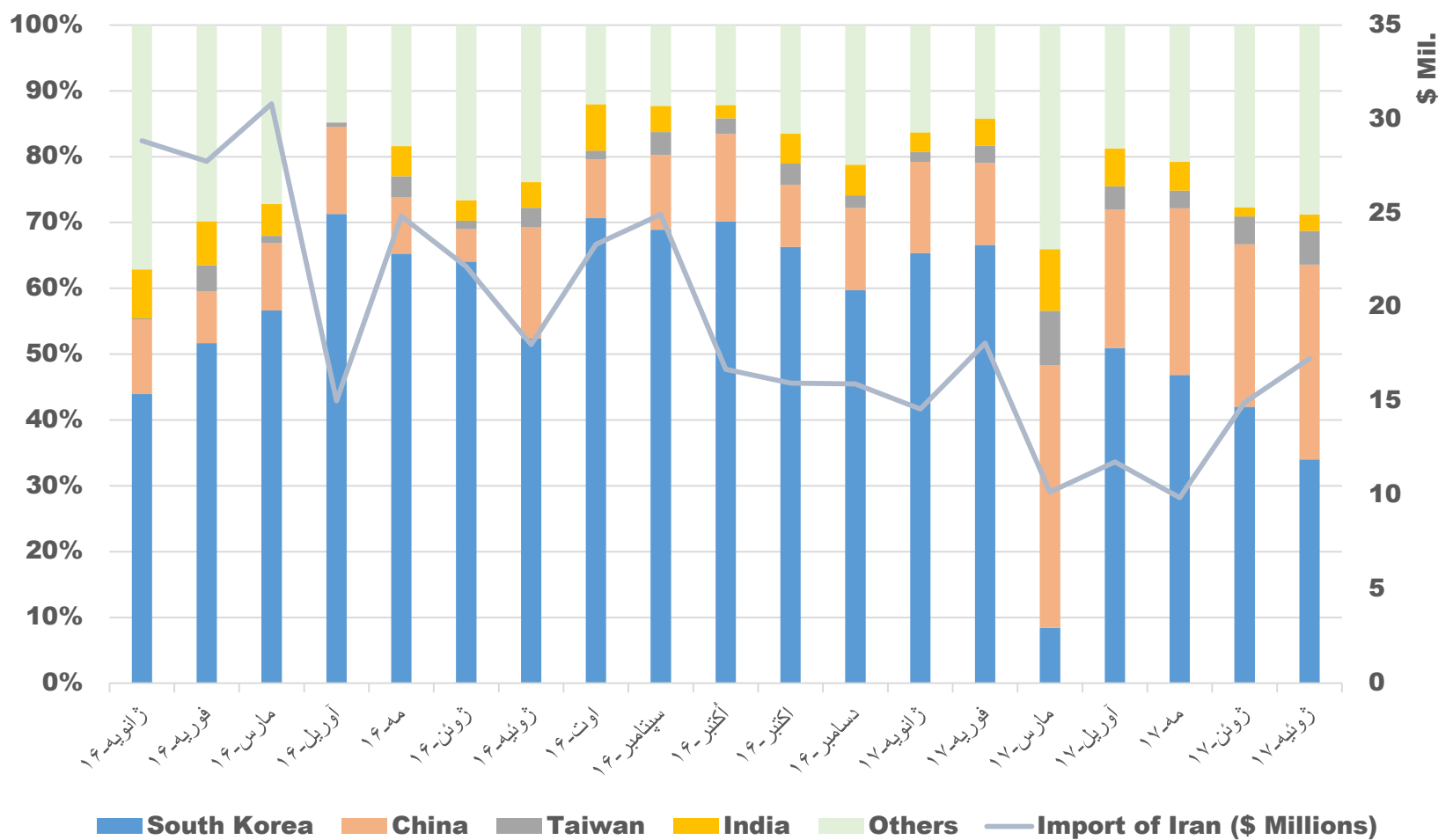
Iran's Import of HS:8703 and Main Exporters' Share



HS8703: Motor Cars and Vehicles for the Transport of Persons

Source: IRICA

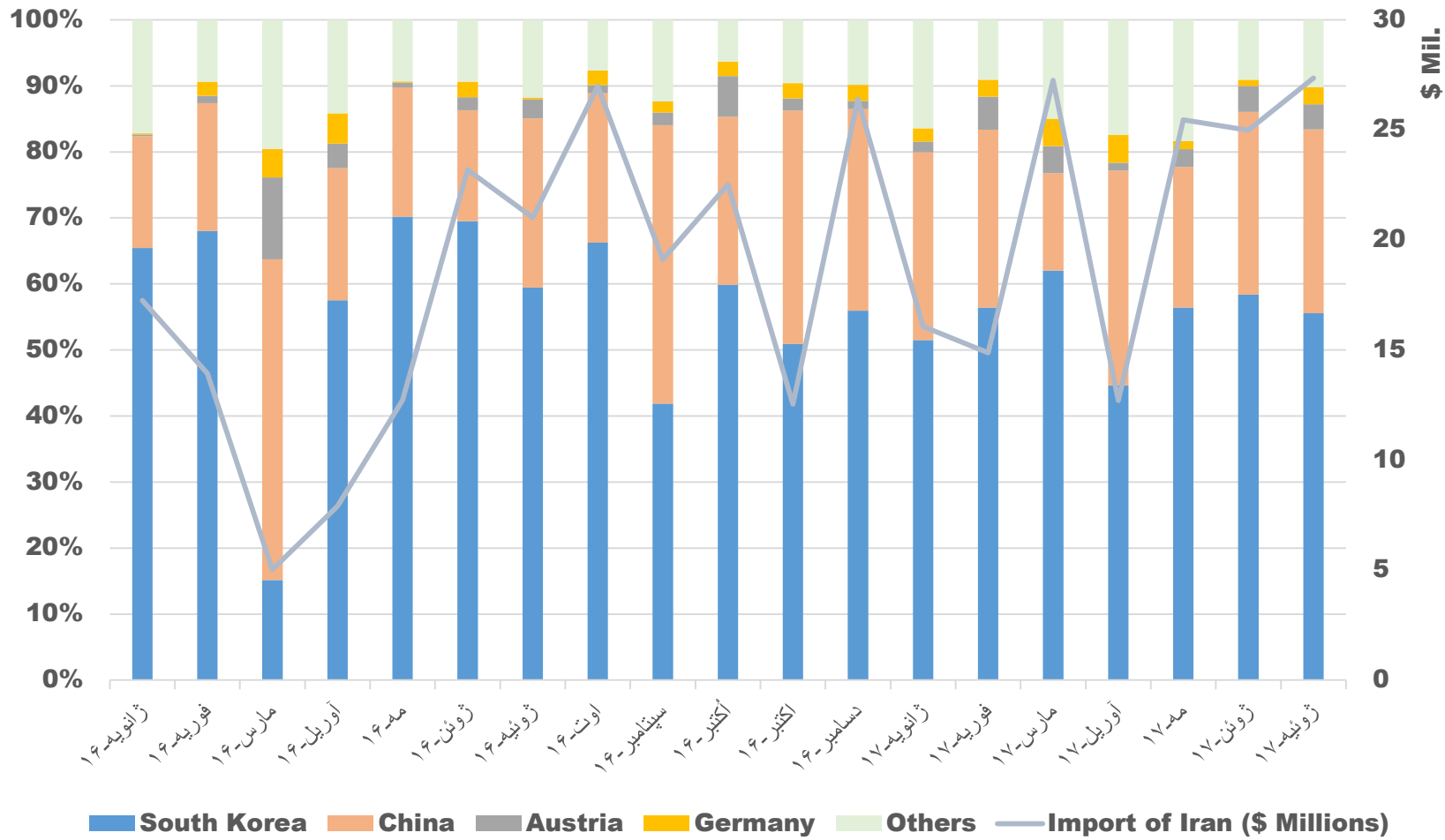
Iran's Import of HS:3907 and Main Exporters' Share



HS3907: Polyacetals, Other Polyethers

Source: IRICA

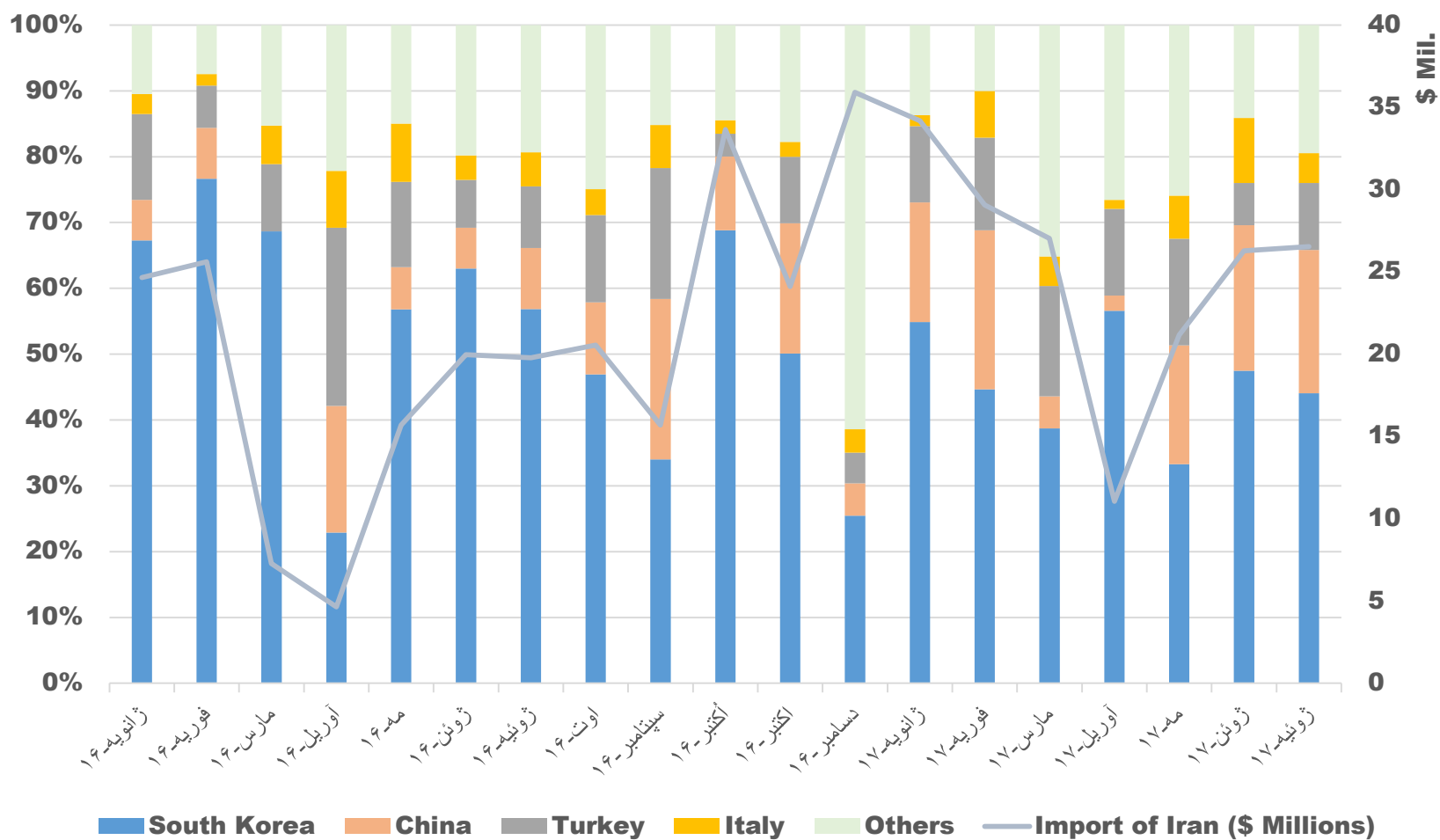
Iran's Import of HS:4810 and Main Exporters' Share



HS4810: Paper and Paperboard

Source: IRICA

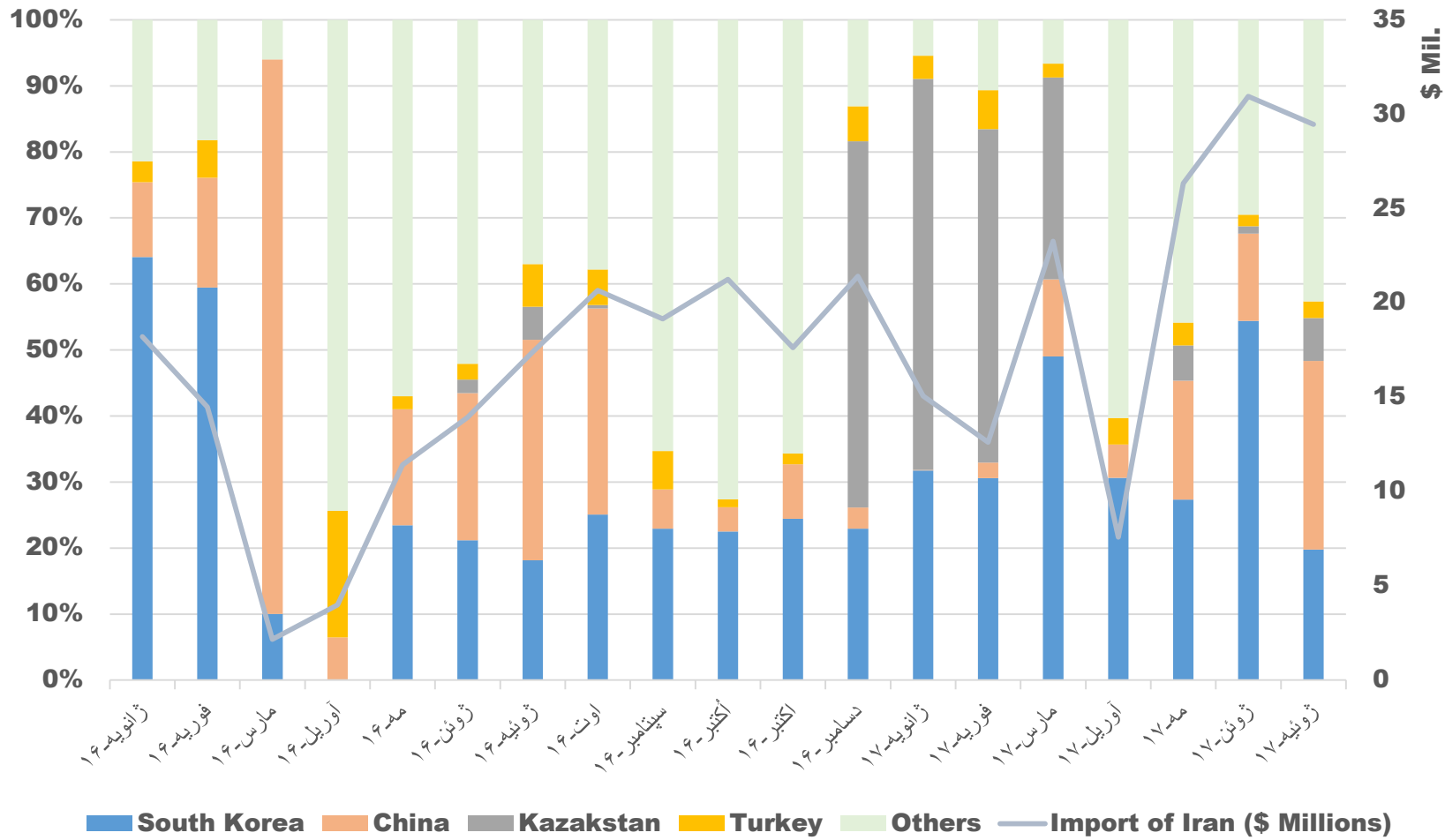
Iran's Import of HS:8418 and Main Exporters' Share



HS8418: Refrigerators, Freezers

Source: IRICA

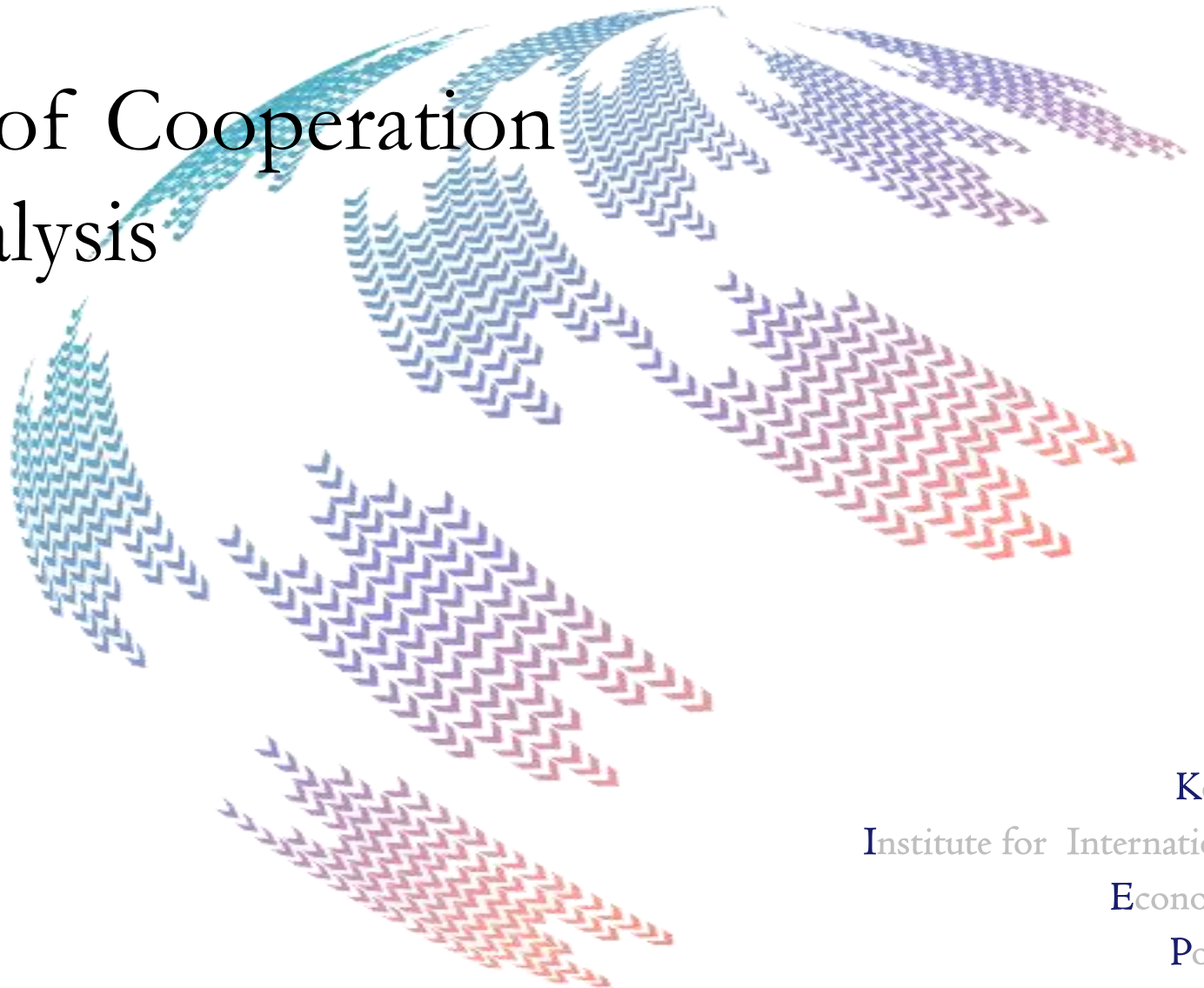
Iran's Import of HS:7209 and Main Exporters' Share



HS7209: Flat-rolled Iron and Nonalloy Steel, Cold-rolled

Source: IRICA

III. Potential Area of Cooperation based on RCA Analysis



Korea
Institute for International
Economic
Policy

Potential Area of Cooperation based on RCA Analysis

- Revealed Comparative Advantage Index (Balassa, 1965) of country i 's export in product k , where X_i^k is country i 's export in product k

$$RCA_i^k \equiv \frac{X_i^k / \sum_i X_i^k}{\sum_k X_i^k / \sum_i \sum_k X_i^k}$$

- Bilateral RCA of origin country i 's export to destination country n of product k , where X_{ni}^k is country i 's export in product k to destination country n

$$BRCA_{ni}^k \equiv \frac{X_{ni}^k / \sum_i X_{ni}^k}{\sum_k X_{ni}^k / \sum_i \sum_k X_{ni}^k}$$

- Index of Import Demand of country n 's export in product k

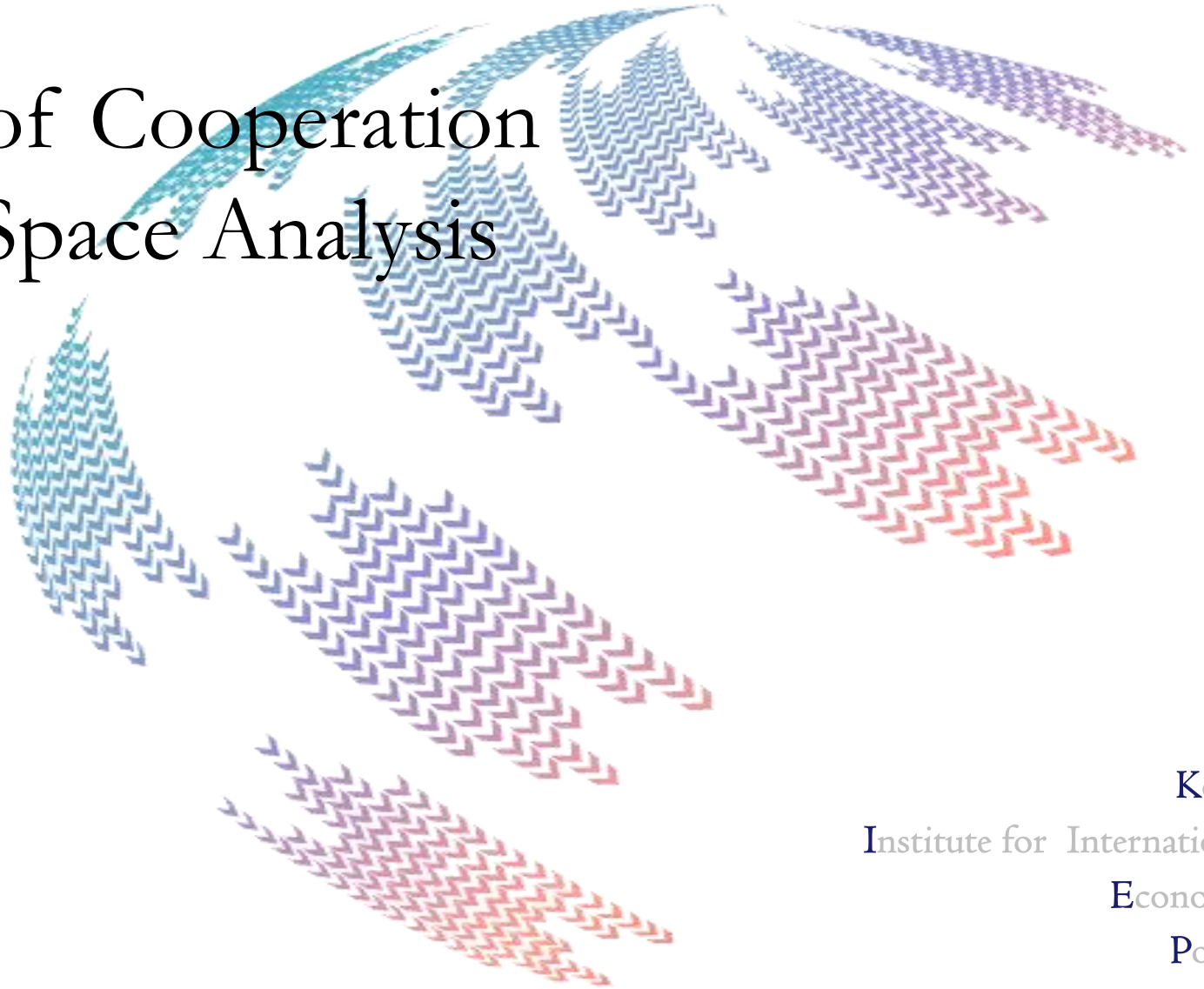
$$IID_n^k \equiv \frac{\sum_i X_{ni}^k / \sum_i \sum_k X_{ni}^k}{\sum_i X_i^k / \sum_i \sum_k X_i^k}$$

Import and Export Potentials between Iran and Korea

| HS code | Product | IID | RCA | BRCA | RCA/BRCA |
|---------|--|------|------|------|----------|
| 7209 | Flat-rolled Iron and Nonalloy Steel, Cold-rolled | 92.7 | 13.6 | 3.8 | 3.5 |
| 4809 | Carbon Paper, Self-copy Paper | 87.1 | 19.8 | 4.8 | 4.1 |
| 8470 | Calculating Machines | 76.4 | 1.9 | 2.9 | 0.7 |
| 7229 | Wire of Other Alloy Steel | 64.5 | 8.8 | 3.5 | 2.5 |
| 8450 | Household- or Laundry-type Washing Machines | 61.6 | 7.1 | 4.4 | 1.6 |
| 2823 | Titanium Oxides | 60.8 | 6.4 | 5.2 | 1.2 |
| 4810 | Paper and Paperboard | 60 | 4.1 | 5.3 | 0.8 |
| 8418 | Refrigerators, Freezers | 47.7 | 5.8 | 4.9 | 1.2 |
| 4013 | Inner Tubes of Rubber | 45.6 | 12.9 | 3.5 | 3.7 |
| 5501 | Synthetic Filament Tow | 42.1 | 5.5 | 3.2 | 1.7 |

Source: author's calculation with UN COMTRADE data

IV. Potential Area of Cooperation based on Product Space Analysis



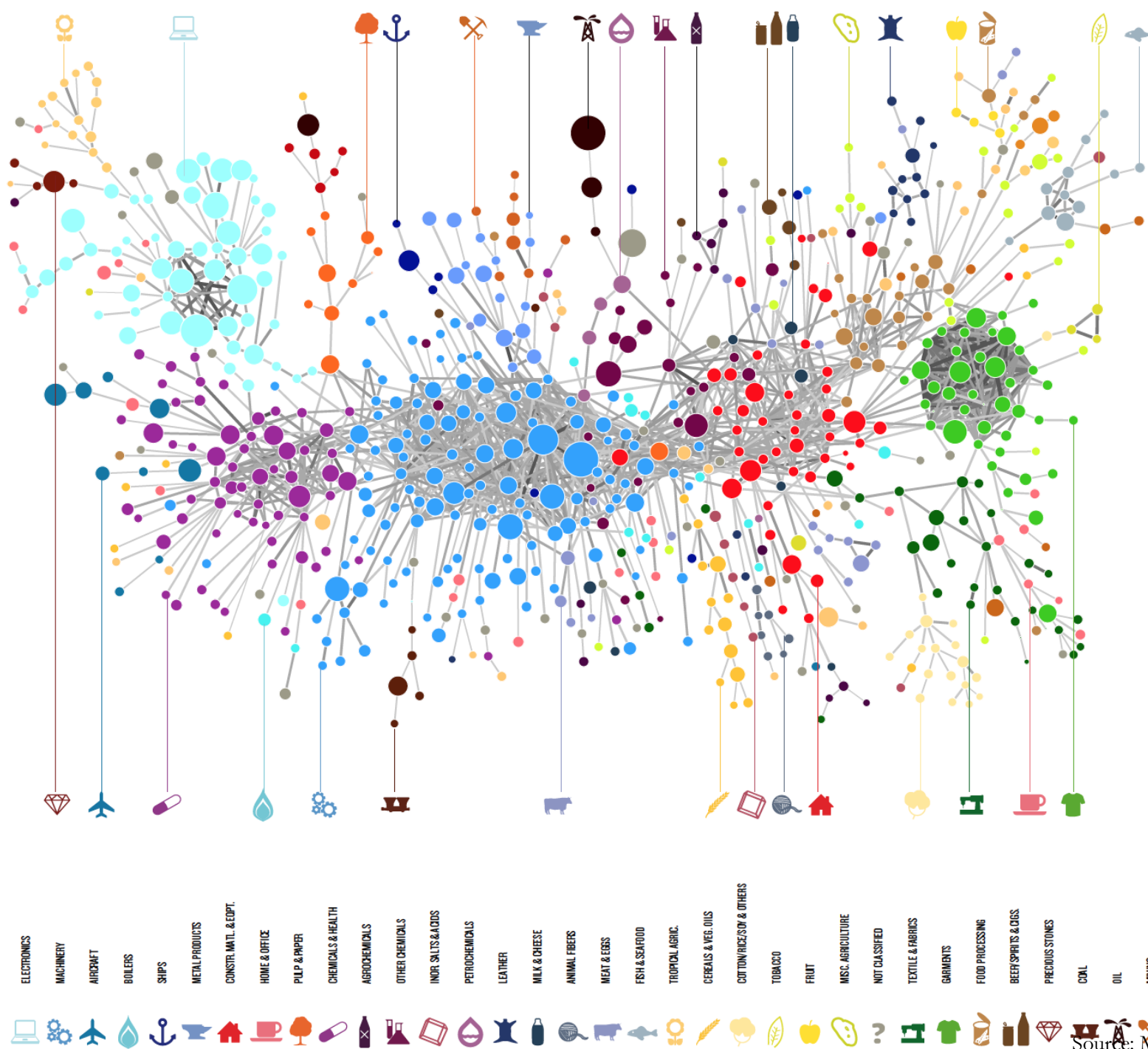
Potential Area of Cooperation based on Product Space Analysis

- Product Space Analysis is a theory developed by Hidalgo and Hausmann (2009) and others to analyze the network of relatedness between products (product space).
- “Since countries tend to move to goods close to those they are currently specialized in, allowing nations located in more connected parts of the product space to upgrade their exports basket more quickly.” (Hidalgo et al., 2007)

An Example of Product Space

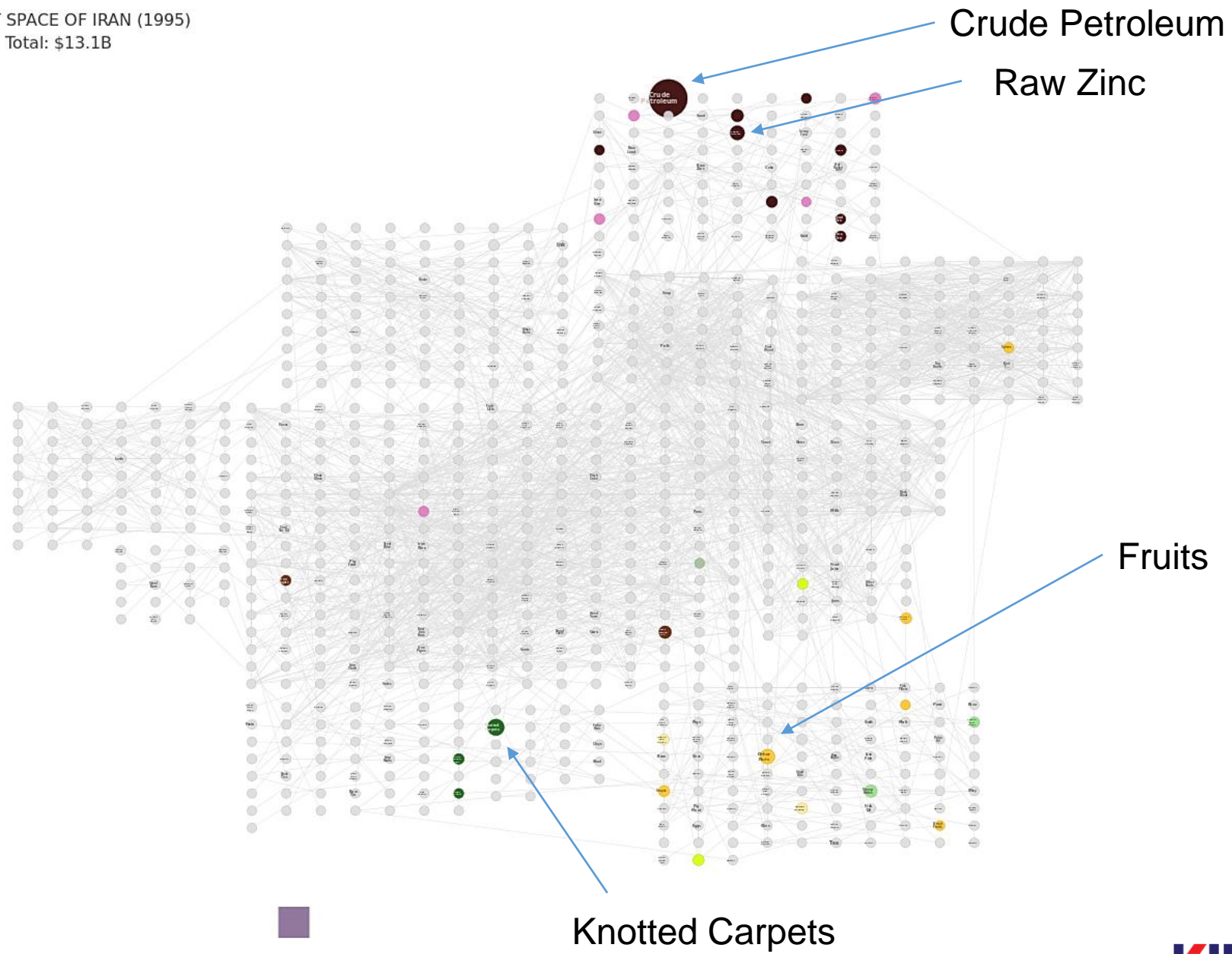
- The network connecting products that tend to be co-exported by the same countries (Hidalgo et al., 2007)
- Textile industry widely exists from less sophisticated varieties such as plain woven fabrics of cotton to most sophisticated ones such as denim mixing of different materials and colors.
- For example, photographic film exporting countries are likely to be exporters of non-optical glass balls, acrylic polymers, ethers and acetals, chemical products, X-ray equipment, depleted uranium, silicones, and others.

Product
Space

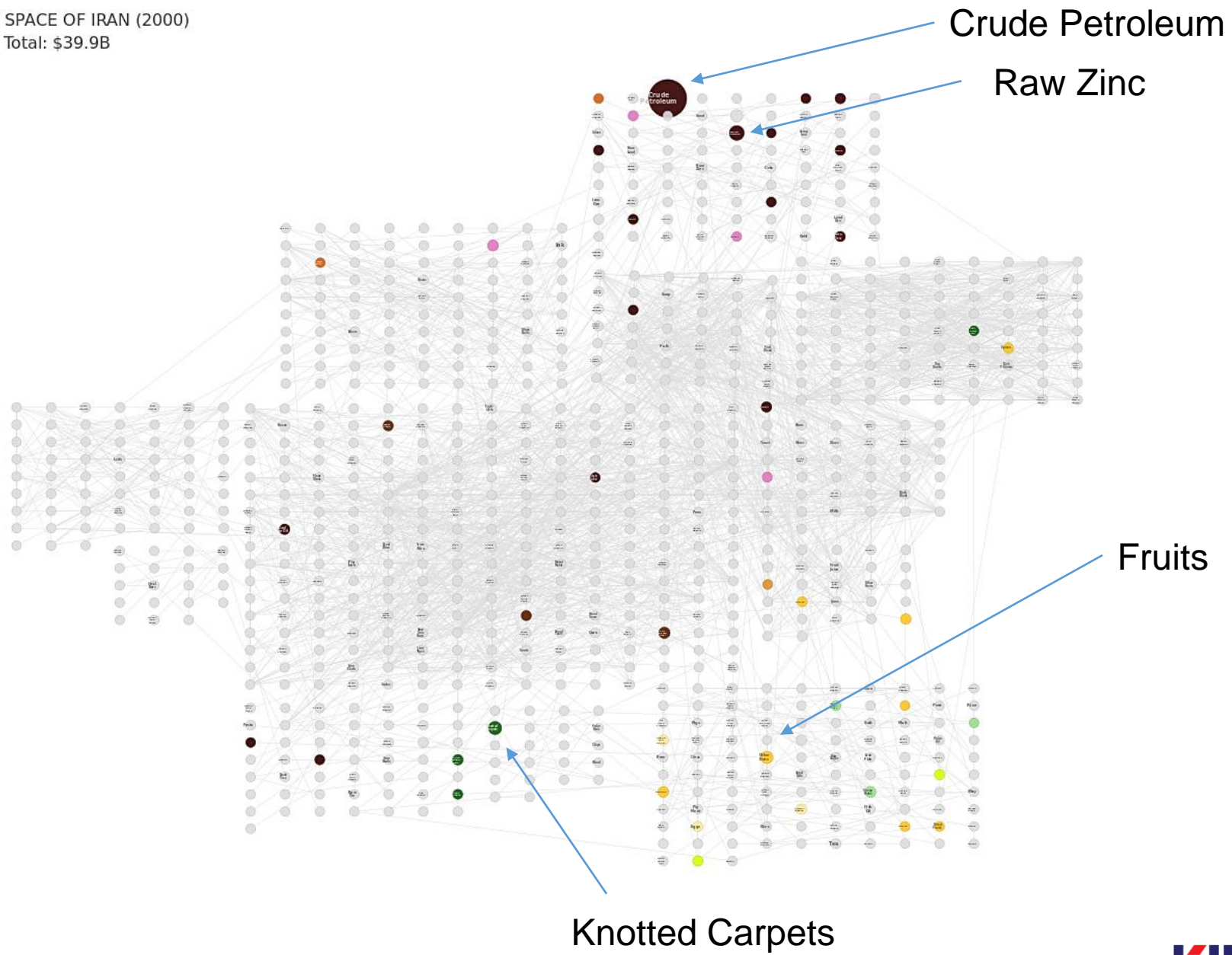


Korea
e for International
Economic
Policy

PRODUCT SPACE OF IRAN (1995)
Total: \$13.1B

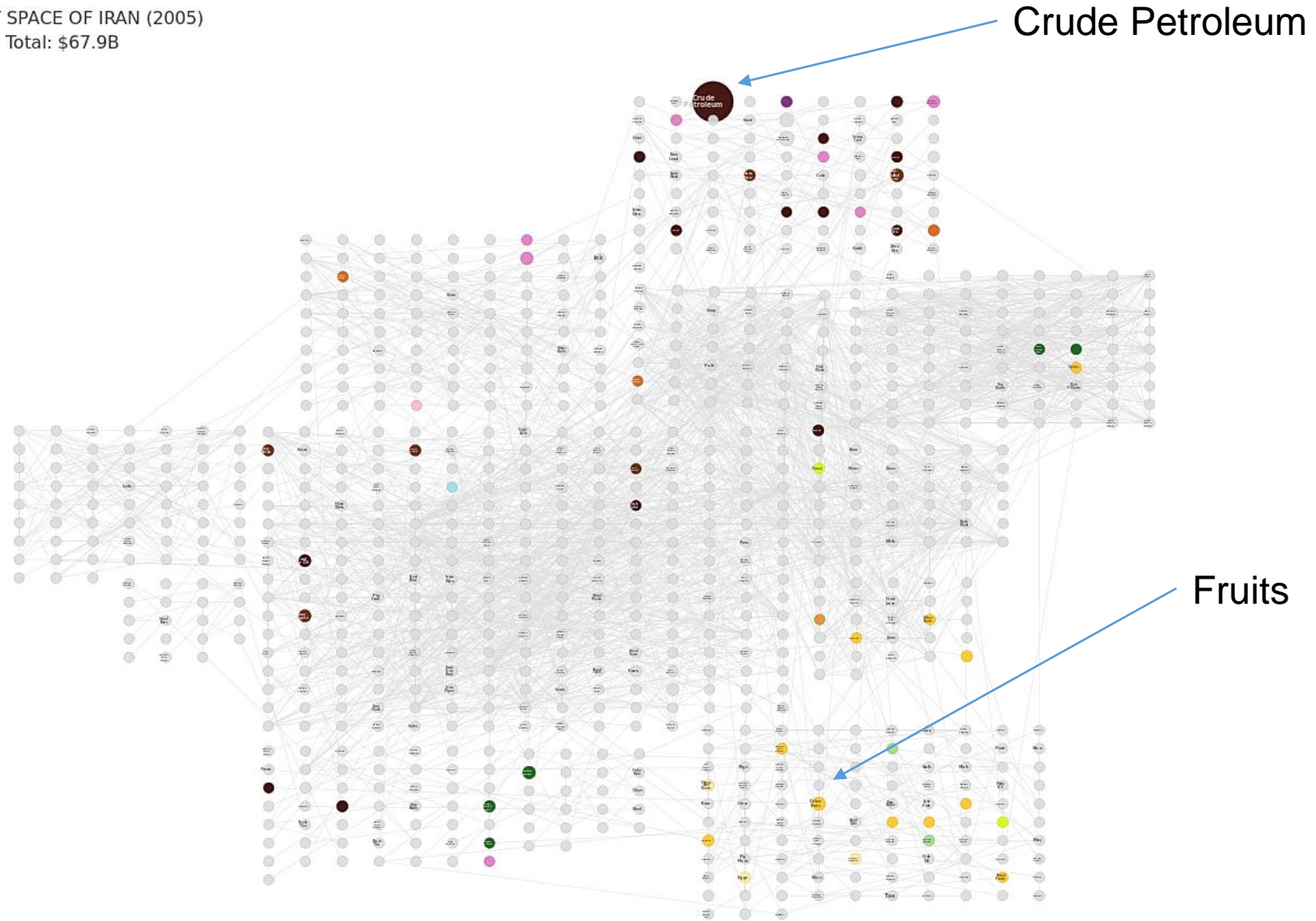


PRODUCT SPACE OF IRAN (2000)
Total: \$39.9B



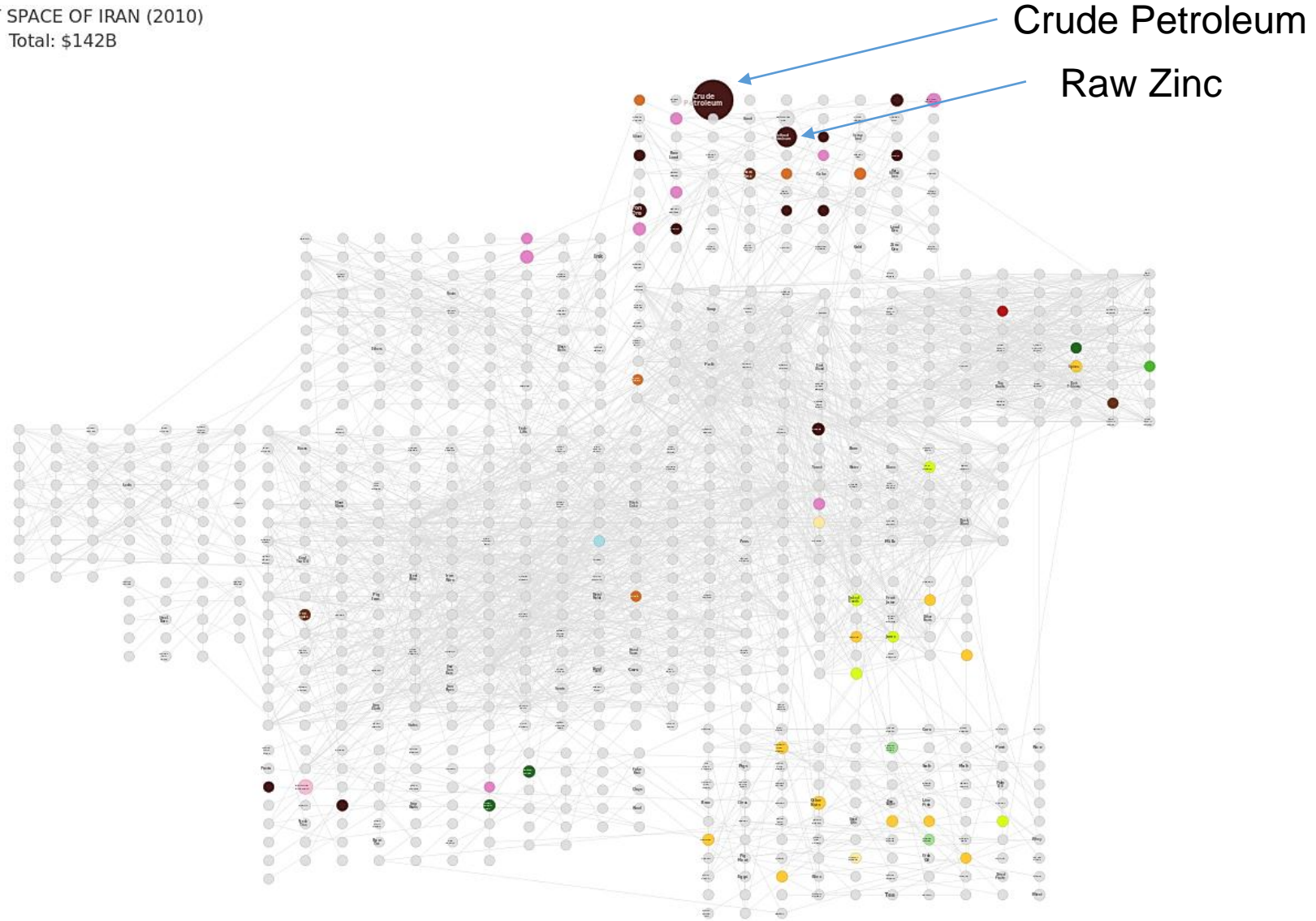
Source: MIT Observatory of Economic Complexity

PRODUCT SPACE OF IRAN (2005)
Total: \$67.9B



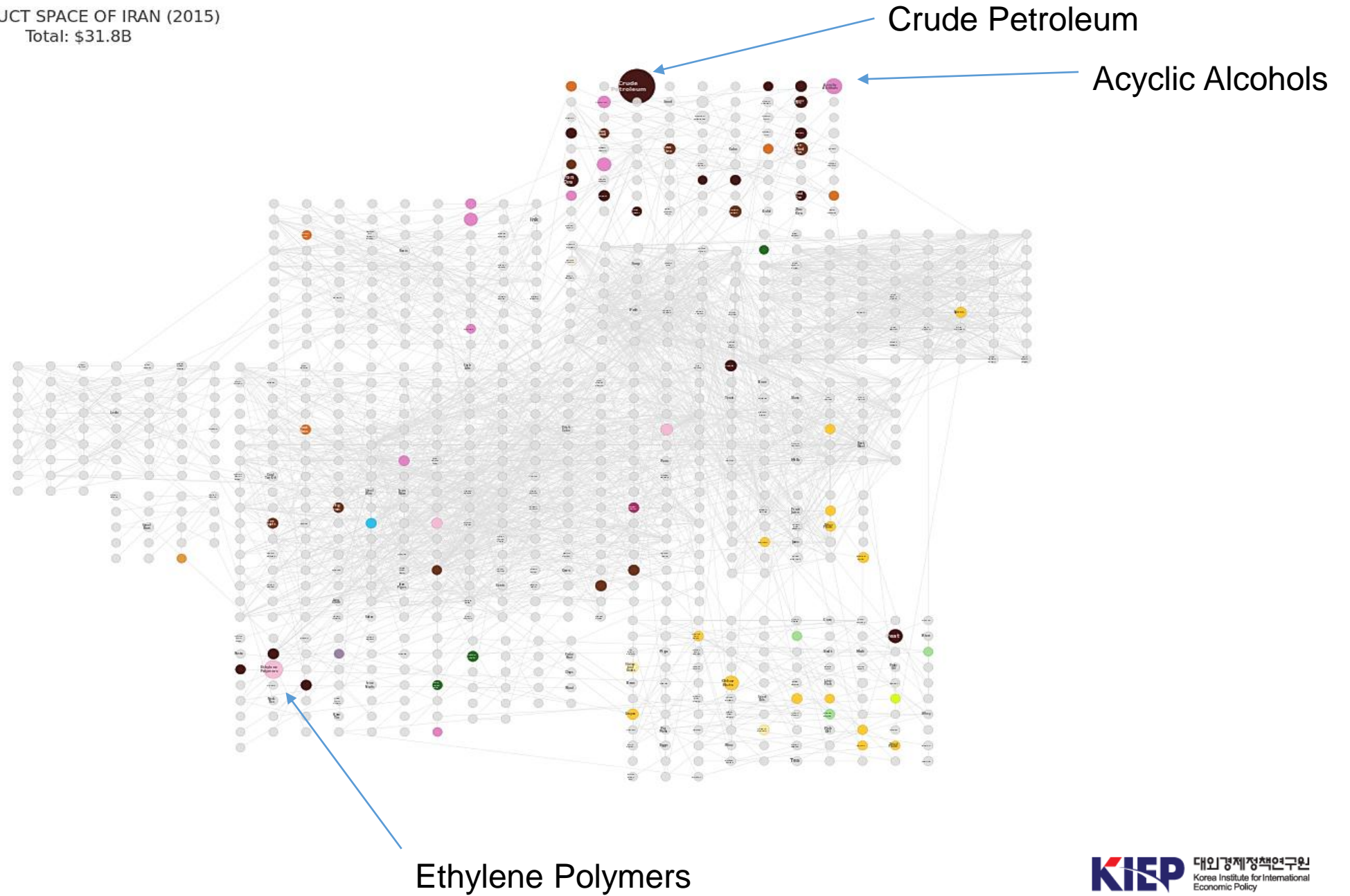
Source: MIT Observatory of Economic Complexity

PRODUCT SPACE OF IRAN (2010)
Total: \$142B



Source: MIT Observatory of Economic Complexity

PRODUCT SPACE OF IRAN (2015)
Total: \$31.8B



Source: MIT Observatory of Economic Complexity

Key Recommendations from Product Space Analysis

- Iran might focus on petroleum related products such as alloy and copper products, synthetic rubber.
- Iran may also have a great potential in food products such as milk related products.
- Since Iran is specialized in Asphalt and cement related products, locomotive parts or construction parts industry might be promising.

Key Recommendations from Product Space Analysis

- Even during the sanction, Iran has expanded its economic complexity. Industry policy to grow a few focus-product related industry could be advised.
- This analysis is very limited because it is using only exporting goods (domestic productions not considered) in limited time data.

V. Policy Suggestions for a Sustainable Partnership between Iran and Korea



Korea
Institute for International
Economic
Policy

Policy Suggestions for a Sustainable Partnership between Iran and Korea

- The two countries have a long economic partnership history from oil plant and construction industry, which are still important sector in Iran.
- After the sanction lifted, the two countries' cooperation should not be limited in specific industry or sectors, but extend to various sectors such as transportation infrastructure, ICT, medical industry, education, environment services.

Korea
Institute for International
Economic
Policy

Policy Suggestions for a Sustainable Partnership between Iran and Korea

- Iran and Korea can cooperate in the automobile industry to find a mutually beneficial relationship for both.
- The two countries' cooperation platform to support G2G, B2B, B2G, and financing partnerships is important.

Korea
Institute for International
Economic
Policy

Thank You

Milton Friedman (1980):

“All in all, economic sanctions are not an effective weapon of political warfare. They are likely to do us as much harm as they do their intended target, not only in the ways already mentioned, but also by weakening the system of free markets that is our greatest source of strength.”

Korea
Institute for International
Economic
Policy