

해외출장보고서
2019.3.17.~3.20.
일본/오사카

국제 학술대회 ICES 2019 참석

2019. 3. 25.

김바우(동향통계분석본부 전문연구원)

I. 출장개요

1. 출 장 자 : 김바우(동향통계분석본부 전문연구원)
2. 출장기간 : 2019.3.17(일) ~ 2019.3.20(수) (3박 4일)
3. 출 장 지 : 일본 / 오사카
4. 출장목적 : 국제 학술대회 ICES 2019 참석(논문 발표 및 토론)

발표 논문은 출장자가 참여한 2018년도 기본연구과제 “우리나라 수출구조의 동태적 변화와 경쟁력에 관한 연구”에서 발췌, 일부 변경하여 준비

II. 세부일정

일자 (요일)	장소	시간	주요 일정 (방문기관, 면담자 등)
17 (일)	청주- 오사카	종일	CJJ-KIX 이동
18 (월)	오사카부 이바라키시	종일	세션 (Int'l Economy, Environment 등), Social Gathering 참석
19 (화)	오사카부 이바라키시	종일	논문 발표 (Evolution of Export Product Space) 세션 참석(Int'l Economy 등)
20 (수)	오사카-청 주	종일	KIX-CJJ 이동

Ⅲ. 출장 수행내용

1. ICES 2019 참석, 세미나 발표(프로그램, 발표자료는 부록에 수록)

- ICES(International Conference on Economic Structures)는 산업연관분석, 산업구조를 주요 연구하는 일본의 PAPIOS에서 2017년부터 개최하기 시작한 국제 학술대회
 - PAPIOS(Pan Pacific Association of Input-Output Studies)는 1989년 설립된 학술단체로, 1989년 창간한 「産業連関 イノベーション & I-O 테크닉」와, 2012년 창간한 「Journal of Economic Structures」를 발간중에 있음.
 - ICES는 일본 외 국가 회원의 학술 교류를 활성화하기 위해 시작한 학술대회로 2019년 3회를 맞음.
- 학술대회 발표를 통해 2018년 연구보고서로 발간된 “우리나라 수출구조의 동태적 변화와 경쟁력에 관한 연구”의 연구내용을 소개

2. 관련 분야 연구자들과의 교류

- Makiko Tsukui, Juan Wen, Nobuhiro Okamoto, Ge Lai, Muhammad Aamir Khan, 김광일(나고야대학), 이수철(메이조대학) 등과 발표 내용에 대한 토의 및 최근 연구 동향에 대해 논의

IV. 출장의 성과(또는 시사점)

○ 연구원 홍보 및 네트워크 구축

- 산업연구원 연구성과 소개 및 해외 연구자들과의 네트워크 구축

○ 발표 내용에 대한 주요 코멘트와 논의내용

- 최근의 보호무역주의는 특정산업에 대한 집중 육성의 실효성 문제를 야기할 수 있으므로, 정책적 시사점을 이끌어 낼 때 정치경제학적 관점에서 결과를 검토할 필요가 있음.
- 특히, 국가들의 수출 패턴이 점차 기존의 특화 환경에 고착되고 있는 것처럼 보이는 것은, 보호무역주의에 따른 비용이 더욱 커질 수 있다는 반증이 될 수 있음.
- 새롭게 정의한 수출 적합도의 산출결과에 있어서, 2000년대 초반 gap이 발생하는 이유를 좀 더 자세하게 규명할 필요가 있음. 동일한 HS 개정이 발생한 1996년과 2007년도에는 그러한 gap이 발생하지 않은 점에 유의할 필요
- Outpath를 통한 순밀도의 표준화의 당위성을 주장하기 위해서는, 품목별 outpath의 시계열적 변동에 대한 검증이 선행되어야 할 것으로 보임.
- Hidalgo 류의 연구를 추정을 통해 활용하였다는 데 새로운 점이 있으나, 좀 더 정책적 함의를 이끌어내기 위해서는 세분화된 무역 자료를 사용하는 것이 바람직 할 것으로 보임. 예컨대 중국의 가공무역 자료, related firms(FDI를 받은 외국계 기업), 중소기업의 수출 등 다양한 후속 연구 주제를 생각해 볼 수 있음.

V. 참고자료

발표자료 및 학술대회 프로그램(이후 페이지)

Evolution of Export Product Space: East Asian Country cases

ICES 2019
March 19, 2019

Bawoo Kim (KIET)

Table of contents

- Background
- Concepts
- RRI (Revealed Relatedness Index)
- Export fitness
- Concluding remarks

Evolution of Export Product Space

Background

- Economic growth as an industrial structure enhancement
 - Economic growth can be understood as a structural change bonus of industrial structure enhancement.
- Specifying key industry that can spillover key knowledge to other sectors matters.
 - Industrial structure upgrading can occur simultaneously, but it is still important to identify core industries.
 - Heavy industries played a key role, but with the emergence of 4IR, non-trivial key sectors could be emerged.

Evolution of Export Product Space

Background

- In the case of Korea, the sophistication of exports coincides with the advancement of industrial structure.
- The traditional method of identifying the significance of industries is IO analysis.
- Product space model, which emerged in the mid - 2000s, has advantage for analyzing manufacturing sector.
- We suggest a new concept that can be applied to product space model to measure the significance of an industry to the whole economy.

Evolution of Export Product Space

Product space and RRI

- Hidalgo et al. (2007) suggests “Product space” model by combining RCA with network theory.
 - By taking conditional probability, product space measures the proximity of two different products.
- Freitas et al. (2015) suggests a complementary method using probit estimation that calculates marginal probability.
 - When a product has a comparative advantage, the probability of the other product has comparative advantage can be captured through probit estimation.

Evolution of Export Product Space

Product space and RRI

- Definition of product space model (Hidalgo et al., 2007)
- $\varphi_{ij} = \min\{P(x_{ic} = 1|x_{jc} = 1), P(x_{jc} = 1|x_{ic} = 1)\}$ for all countries c .
- x_{ic} has a value of 1 when the RCA value is greater than 1 and otherwise zero.
- The higher the likelihood that the knowledge and facilities needed to produce j can be applied to i , the higher the φ_{ij} .

Evolution of Export Product Space

Product space and RRI

- Freitas et al. (2015) complements the weaknesses in the original model.
- New model is also based on the concept of proximity between export commodities and the proximity is referred to as the "Revealed Relatedness Index (RRI)" matrix.
- Unlike the existing method that directly calculates the linkage on the product space, the new process estimates the following equation using probit model and uses only statistically significant results for RRI matrix.

Evolution of Export Product Space

Product space and RRI

- $x_{i,c} = 1$ if $RCA_{i,c} > 1$, 0 otherwise.
- $P(x_{j,c} = 1 | x_{i,c}) = G(\alpha_0 + \alpha_1 x_{i,c})$
- $RRI_{ij} = G(\widehat{\alpha}_0 + \widehat{\alpha}_1) - G(\widehat{\alpha}_0)$
- α_0 : the average probability of having a comparative advantage in j .
- If α_1 is 0, the probability of having a comparative advantage in j is not affected by competitiveness of i .

Evolution of Export Product Space

Product space and RRI

- RRI matrix is an increment in probability that a country has comparative advantage on j when that country has a comparative advantage over product i .
- RRI matrix is a non-symmetric matrix.
- The row sum of the matrix is termed the “out-path index”.
- $outpath_i = \sum_j RRI_{ij}$
- It measures the degree to which the overall product experience helps to generate competitive advantage for other products.

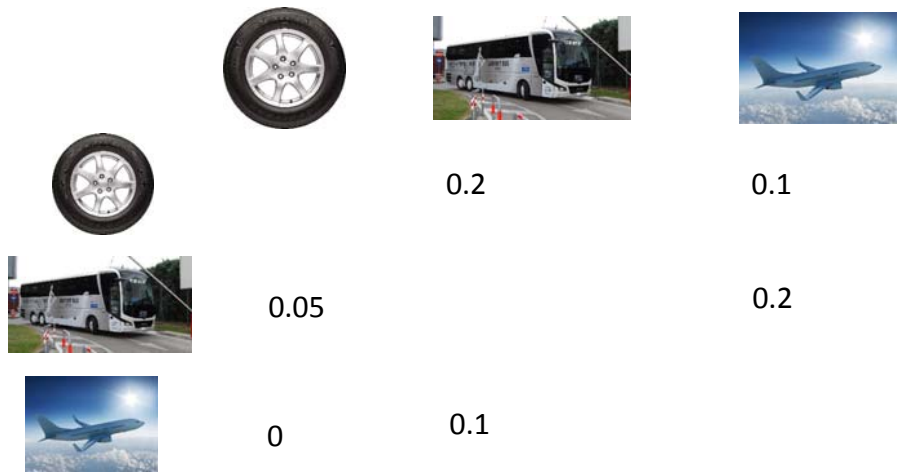
Evolution of Export Product Space

Product space and RRI

- Column sum will determine how the country's overall specialization pattern will help to produce a particular product.
- Freitas et al. (2015) label this as the "pure density" index between commodities.
- $w_{j,c} = \sum_i RRI_{ij} x_{k,c}$
- The pure density provides information on how much current experience of the country can help a 'new product' of future.

Evolution of Export Product Space

Product space and RRI



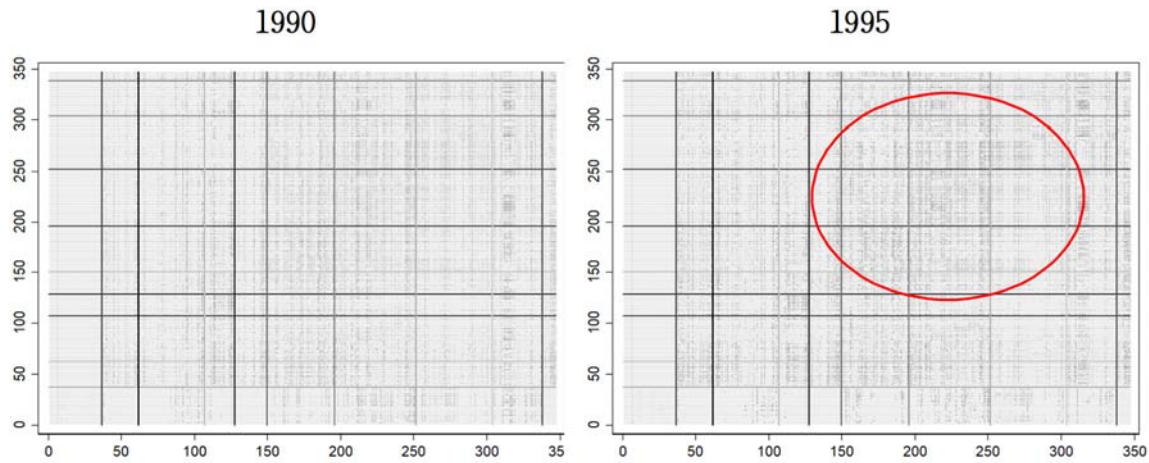
Evolution of Export Product Space

Data

- Main dataset: UN COMTRADE in SITC rev.3
- Aux. dataset: World Development Indicators (WDI) & CEPII.

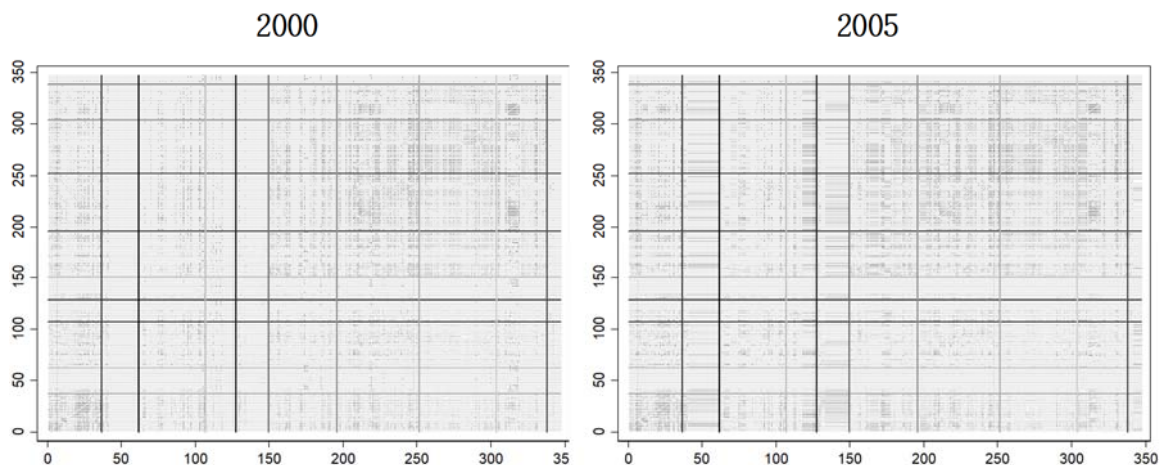
Evolution of Export Product Space

RRI : Heatmap for SITC products



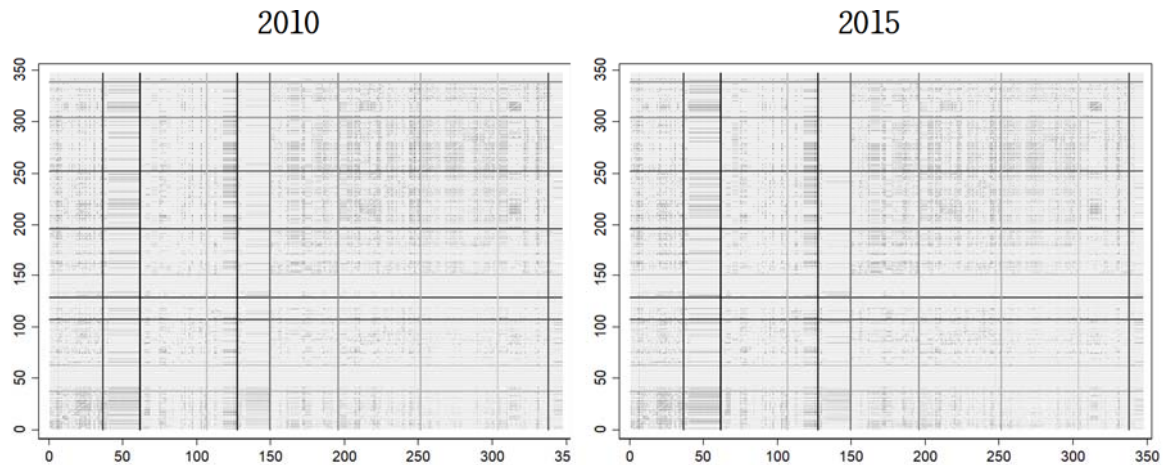
Evolution of Export Product Space

RRI : Heatmap for SITC products



Evolution of Export Product Space

RRI : Heatmap for SITC products



RRI : density analysis

- In order to examine the relationship within the industry (item group), sub-matrix for each SITC broad level group is extracted.
- Assuming the extracted matrix as an adjacency matrix, it compares the number of links that can exist in the complete network.

Evolution of Export Product Space

RRI : density analysis

- The rise of GVCs led to a decline in the linkage between products within the same sector except machinery and transport equipment.

Product Group	SITC	1990	1995	2000	2005	2010	2015
Food and live animals chiefly for food	0	0.042	0.074	0.655	0.644	0.659	0.731
Beverages and tobacco	1	0.469	0.700	0.052	0.117	0.155	0.152
Crude materials, inedible, except fuels	2	0.277	0.319	0.166	0.207	0.174	0.206
Mineral fuels, lubricants and related materials	3	0.590	0.643	0.115	0.215	0.198	0.244
Animal and vegetable oils, fats and waxes	4	0.403	0.557	0.024	0.141	0.139	0.136
Chemicals and related products, nes	5	0.634	0.630	0.307	0.436	0.406	0.454
Manufactured goods classified chiefly by materials	6	0.620	0.672	0.547	0.543	0.558	0.529
Machinery and transport equipment	7	0.586	0.610	0.627	0.667	0.675	0.668
Miscellaneous manufactured articles	8	0.519	0.523	0.374	0.407	0.478	0.364
Commodities and transactions not classified elsewhere in the SITC	9	0.599	0.528	0.045	0.011	0.000	0.000

Evolution of Export Product Space

Export Fitness : Concept

- Pure density is calculated by combining the RRI matrix with the RCA matrix.
- RRI refers to the probability that a comparative advantage of a product and a comparative advantage of other products will occur simultaneously.
- There are only two cases for comparative advantage.
- Thus, the range of pure density differs depending on the item.

$$Pure\ Density_{ik} = \sum_{l \in K} RRI_{kl} \times \widetilde{RCA}_{il}$$

Evolution of Export Product Space

Export Fitness : Concept

- Thus, in order to compare the pure densities of different countries to compare the efficiency of the export structure, the deviation of support should be standardized.
- In this study, we introduced the concept of adjusted pure density.

$$AdjPureDensity_{ik} = \frac{PureDensity_{ik}}{Outpath_k}$$

Evolution of Export Product Space

Export Fitness : Concept

- The simple average of pure density of a country can be used to measure the extent and efficiency of its export structure.
- In this study, the export weighted average pure density, “export fitness” was used to take into account the difference in the size of the world market by items.

$$ExportFitness_{ij} = \frac{\sum_{k \in K} \{PureDensity_{ik} \times x_{ijk}\}}{X_{ij}}$$

$$AdjExportFitness_{ij} = \frac{\sum_{k \in K} \{AdjPureDensity_{ik} \times x_{ijk}\}}{X_{ij}}$$

Evolution of Export Product Space

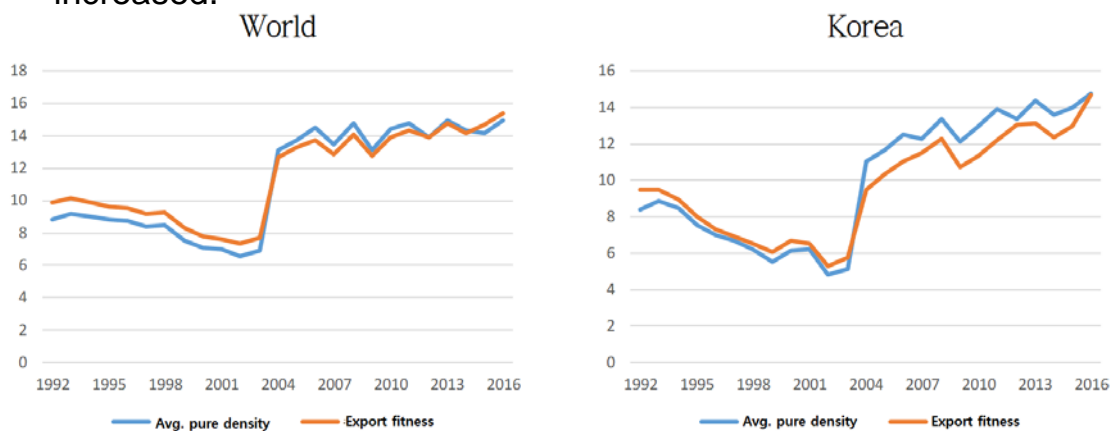
Export Fitness : Result

- The world average export fitness increased from 9.9 in 1992 to 15.4 in 2016.
 - simple average : 8.8 > 15.0
- A larger simple average pure density than the weighted one can be interpreted as follows: the share of the exports of items with higher pure density is small.
- Export fitness and pure density declined from 1992 to 2001, but then increased.

Evolution of Export Product Space

Export Fitness : Result

- Export fitness and pure density declined from 1992 to 2001, but then increased.



Evolution of Export Product Space

Export Fitness : Result

- The highest & lowest pairs have been changed over time.

1992

2016

Exporter	Importer	Exp.Fit.	Exporter	Importer	Exp.Fit.
Netherlands	Greece	17.8	Oman	Japan	0.3
Germany	Mexico	17.5	Oman	Korea	0.3
Germany	Australia	17.4	Brunei	Japan	0.6
Germany	Japan	17.3	Algeria	USA	1.2
Germany	China	17.3	Algeria	France	1.3
Germany	Spain	17.2	Algeria	Italy	1.3
Hungary	Russia	17.2	Saudi Arabia	USA	1.6
Germany	South Africa	17.1	Saudi Arabia	Monaco	1.6
Germany	Sweden	16.9	Saudi Arabia	Taiwan	1.7
Germany	Russia	16.8	Venezuela	Netherlands	2

Exporter	Importer	Exp.Fit.	Exporter	Importer	Exp.Fit.
Lithuania	Sweden	26.2	Nigeria	South Africa	1.2
Poland	Sweden	25.8	Nigeria	Indonesia	1.3
Poland	Lithuania	25.6	Nigeria	England	1.4
Italy	Belgium	25.4	Nigeria	India	1.4
Poland	Belgium	25.4	Qatar	Japan	1.4
Poland	Latvia	25.4	UAE	Taiwan	1.4
Poland	Denmark	25.3	Nigeria	France	1.5
Poland	Romania	25.2	Qatar	Singapore	1.6
Poland	Spain	25.2	Nigeria	Spain	1.6
Poland	Slovakia	25.2	Qatar	Korea	1.7

Evolution of Export Product Space

Export Fitness in Gravity Model

- The upgrading of the export structure of a country can be achieved through the expansion of exports by improving the quality of existing export products.
- We focus on the fact that the exports structure also can be upgraded by expanding the export of commodities with high interconnectivity between export commodities.
- Therefore, we adopt a modified gravity model as follows.

$$\bullet \ln X_{ij} = \beta_0 + \beta_1 \ln M_i + \beta_2 \ln M_j + \beta_3 \text{Distance}_{ij} + \beta_4 \text{Closeness}_{ij} + \beta_5 \text{ESI}_{ij} + \beta_6 \text{ExportFitness}_{ij} + e_{ij}$$

Evolution of Export Product Space

Export Fitness in Gravity Model (whole sample)

	1995		2015	
	Model 1	Model 2	Model 1	Model 2
GDP of Exporter	0.893***	0.896***	0.936***	0.908***
	-0.019	-0.019	-0.018	-0.018
GDP of Importer	1.165***	1.087***	1.330***	1.296***
	-0.02	-0.021	-0.017	-0.017
Neighbor dummy	0.296	0.405**	0.460**	0.499**
	-0.203	-0.2	-0.198	-0.195
Common language	0.903***	1.054***	1.059***	1.179***
	-0.099	-0.097	-0.091	-0.089
Colonial experience	1.055***	0.934***	0.471**	0.393*
	-0.213	-0.21	-0.213	-0.21
Distance	-1.083***	-1.068***	-1.159***	-1.170***
	-0.044	-0.043	-0.04	-0.04
ESI	3.656***	3.033***	4.288***	4.141***
	-0.382	-0.378	-0.318	-0.311
Export Fitness	0.025***		0.042***	
	-0.008		-0.006	
Adjusted		2.879***		3.474***
Export Fitness		-0.249		-0.214
Obs.	4,227	4,227	6,143	6,143
R-squared	0.649	0.659	0.666	0.677

Evolution of Export Product Space

Export Fitness in Gravity Model (Korean case)

	1995		2015	
	Model 1	Model 2	Model 1	Model 2
GDP of Importer	0.957***	0.899***	1.060***	1.106***
	-0.125	-0.125	-0.117	-0.12
Distance	-0.791**	-0.777**	-0.4	-0.234
	-0.367	-0.361	-0.305	-0.314
ESI	2.968	2.771	3.723**	1.536
	-2.213	-2.179	-1.573	-1.876
Export Fitness	-0.415		-0.183***	
	-0.251		-0.0581	
Adjusted		9.212**		17.39***
Export Fitness		-4.536		-5.954
Obs.	59	59	63	63
R-squared	0.698	0.705	0.798	0.794

Evolution of Export Product Space

Concluding remarks

- Overall interconnectedness of RRI in a broad sector decreased over time due to GVCs.
- The effect of export fitness on bilateral trade under the gravity model had statistically significant influence.
- ESI between the importing and exporting countries also had a significant positive impact on exports.

Evolution of Export Product Space

Concluding remarks

- The impact has increased even more by limiting its scope to high-technology products.
- This is due to the fact that the trade of high technology products is more affected by the environment of exporting countries.
- The results emphasize the importance of connectivity and complexity in selecting a new growth industry.

Evolution of Export Product Space

Thank you

Evolution of Export Product Space

18 March (Monday) [Room A] 09:30-11:30

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topic 7 Theory of Input-Output Techniques		
Chair	Takashi Yagi	Meiji University
Title	An Interregional Input-Output Analysis Based on the Eaton-Kortum Model	
Author	Kiyoshi Yonemoto	Takasaki City University of Economics
Title	Uncertainty Analysis with Consideration of Correlation between the Elements of Input-Output Table	
Author	Yasushi Kondo	Waseda University
Title	Sectoral Rates of Profits and Cost Structure Analysis	
Author	Takashi Yagi	Meiji University
Title	Dual Nature of Input-Output Modeling: the Matrix-Valued Cost and Production Functions	
Author	Motorin Vladimir	Nat.Res.University Higher School of Economics

18 March (Monday) [Room A] 12:30-14:30

topic 8 Compilation of Input-Output Table, SNA, or SAM		
Chair	TBA	
Title	A compilation method of the Japanese supply table (V table) with the economic census and its estimation.	
Author	Kaya Akagi	Cabinet Office, Government of Japan
Title	The compilation results of Korean 2015 benchmark input-output tables	
Author	Jung Youngho	Bank of Korea
Title	On the past, the present and the future of Korea Input-Output Tables	
Author	Kwon Tae Hyun	Bank of Korea

18 March (Monday) [Room A] 14:45-16:45

topic 5 Computable General Equilibrium Model		
Chair	TBA	
Title	Analysis of power generation sector using trans-log CGE model	
Author	KIM KWANG IL	Graduate school of Economics Nagoya University
Title	Analysis of the African Free Trade Area: A Trade Facilitation and Non-Tariff Measures Perspective	
Author	Shiferaw Habtamu	Kobe university
Title	The Economic Impacts of Phased Tariff Reduction on Farm Investment	
Author	Kiyotaka Ishikawa	The University of Tokyo
Title	Technological innovation, human capital formation, and growth: Empirical analysis based on a computable general equilibrium model focusing on the Korean economy	
Author	Yeo Yeongjun	Seoul National University

18 March (Monday) [Room A] 17:00-18:00

Klein Prize Awardee Speech		
Chair	Kiyoshi Fujikawa	
Title	Economic implications of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) on Pakistan: a CGE approach	
Author	Muhammad Aamir Khan	CIIT

18 March (Monday) 18:30-20:30
Reception

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19 March (Tuesday) [Room A] 09:30-11:00

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KESRA Organized Session(Economic structure and exports of Korea)		
Chair	Lee Jinmyon	KIET
Title	Analysis on Direct and Indirect Contributions to and Determinants of Exports by Firm Size	
Author	Lee Youngho	KIET
Title	The Relationship between Team Performance and Off-field Management : An Analysis of Major League Baseball	
Author	Sung Junho	Seoul National University
Title	Evolution of Export Product Space: East Asian Country cases	
Author	Kim Bawoo	KIET

19 March (Tuesday) [Room A] 11:15-12:15

Special Session		
Chair	Takashi Yagi	
Title	Enhancing Our Understanding of a Regional Economy: The Complementarity of CGE and EIO Models.	
Author	Hewings Geoffrey J D	University of Illinois

19 March (Tuesday) [Room A] 13:15-14:45

REEPS Organized Session(Environment, Resource and Energy in East Asian Region)		
Chair	Lee Soocheol	Meijo University
Title	Policies and predictions for a low-carbon transition by 2050 in passenger vehicles in East Asia: Based on an analysis using the E3ME-FTT model	
Author	Lam Aileen	University of Macao
Title	Virtual water trade and virtual land trade in the world	
Author	Kiyoshi Fujikawa	Nagoya University
Title	Economic and Environmental impacts of carbon taxes and policy mixes of other instruments in East Asia to meet the 2050 2 degree targets	
Author	Lee Soocheol	Meijo University

19 March (Tuesday) [Room A] 15:00-16:30

TAIOS Organized Session (Global Value Chains Analysis)		
Chair	Hsu Shih-Hsun	National Taiwan University
Title	Border Effects of Art, Entertainment and Leisure Industry in Value Added Exports:Evidence from World Input-Output Data	
Author	Chang Kuo-I	National Chung-Hsing University
Title	The Global Value Chains Analysis of Trade on Across-Strait: NRCA and Production Length	
Author	CHOU Li-Chen	Wenzhou Business College
Title	Not in My Backyard: Development and Factors of Change in Cross-Country Carbon Leakages	
Author	Lin Shih-Mo	Chung Yuan Christian University

18 March (Monday) [Room B] 09:30-11:30**page 4 of 7**

topic 2	International Economy and International Development	
Chair	Nobuki Sugita	Ritsumeikan University
Title	Impact of International Labor Migration on regional economic growth in Thailand	
Author	Tipayalai Katikar	Nagoya University
Title	Corporate tax productivity and firms GVC participation	
Author	Wen Juan	Shanghai University of International Business and Economics
Title	Explaining the Relative Decline of Manufacturing Sector in Indonesia: Its Causes and Future Trend	
Author	GUNAWAN Anang Budi	Nagoya University
Title	Global Value Chains and the Skill Structure of Labor Demand	
Author	Zhu Haoliang	Doshisha University

18 March (Monday) [Room B] 12:30-14:30

topic 4	Productivity	
Chair	TBA	
Title	Motherhood wage penalty in Japan	
Author	Dumauli Magdalena Triasih	Ritsumeikan University
Title	Industrial Productivity Divergence and Input-Output Network Structures: Evidence from Japan 1973-2012	
Author	Dominguez Alvaro	Nagoya University
Title	The impacts of Education on monetary and nonmonetary aspects of Poverty: Bangladesh perspective	
Author	Mohammad Ilias Mia	Ritsumeikan University
Title	Investigating the influence of domestic remittances on mutual transaction among households in an isolated village.	
Author	HONGSAKHONE Soulixay	Hiroshima University

18 March (Monday) [Room B] 14:45-16:45

topic 4	Productivity	
Chair	TBA	
Title	Spatial distribution of local public service efficiency in Indonesia for 2010-2012	
Author	Mitsuhiko Kataoka	Rikkyo University
Title	Understanding Agriculture-Industry Inter-Linkages for Agrarian Development: Empirical Evidence from India	
Author	Mehra Sahil	South Asian University
Title	Work-Life Earning and the Return of Investment in Tertiary Education in Indonesia	
Author	Yubilianto	Nagoya University

19 March (Tuesday) [Room B] 09:30-11:00**page 5 of 7**

topic 4 Productivity		
Chair	TBA	
Title	Determinant factor of change in labor demand	
Author	Hideo Kinoshita	Osaka University of Economics
Title	The Solution of Structural Equation Modeling Using Partial Least Squares Estimator on Second Order Latent Variable	
Author	Syah Donny Oktavian	Nagoya University
Title	Impact of maternal mortality on Female labor force participation (A cross-country analysis)	
Author	Sarwar Aiza	Nagoya University

Special Session in Room A**19 March (Tuesday) [Room B] 13:15-14:45**

topic 2 International Economy and International Development		
Chair	Nobuhiro Okamoto	Daito Bunka University
Title	A Study of Economic Inequality between Northern and Southern Europe	
Author	Tsutomu Yoshioka	Meiji University
Title	How Global or Regional Are Value Chains in East Asia? Evidence Based on an Input-Output Analysis in Textile, Automobile and Electronics Sectors	
Author	Lai Ge	Victoria University of Wellington
Title	The Extended Applied Input-Output Model with Heterogeneous Household under Global economy: a microdata approach in Vietnam case	
Author	Kwangmoon Kim	Kyoto University

19 March (Tuesday) [Room B] 15:00-16:30

topic 4 Productivity		
Chair	Akira Furukawa	Ritsumeikan University
Title	Japanese 100-Yen Retail Chain in Development of Retail Industry	
Author	ARIFUR Rahman	Ritsumeikan University
Title	Financial Integration and Total Factor Productivity	
Author	Arif Ur Rahman	Ritsumeikan University Graduate School of Economics

18 March (Monday) [Room C] 09:30-11:30

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topic 6		Regional Input-Output Analysis
Chair	TBA	
Title	The Place of Extractive Industry in the Tajikistan Economy	
Author	Maxudova Oliya	?
Title	Potential Pakistan Korea Free Trade Agreement: Options for Pakistan	
Author	Rafique Amir	COMSATS, Islamabad Campus.
Title	Theoretical and empirical analysis of the influences in household consumption and regional economy brought about by the long term care insurance	
Author	Ryouji Hasegawa	Fukuyama City University
Title	Revealing the Role of Emission Trading in Optimal Technology Choices and Waste Co-Processing Promotion: Cement Industry in China	
Author	JU Yiyi	Nagoya University

18 March (Monday) [Room C] 12:30-14:30

topic 1		Environment, Resource and Energy
Chair	Makiko Tsukui	Tokyo International University
Title	Necessity of tracking international asbestos flow using input-output analysis	
Author	Makiko Tsukui	Tokyo International University
Title	Research on interaction of energy-water nexus considering spatial heterogeneity: based on input output model	
Author	Xia Yan	Chinese Academy of Science
Title	Environmental Efficiency and Regional Convergence Clusters in Japan	
Author	Mendez Carlos	Nagoya University
Title	Examining Cost-effectiveness on R&D Expenditure of Blue Economy Policy	
Author	Huang Michael	Ocean Policy Research Institute

18 March (Monday) [Room C] 14:45-16:45

topic 6		Regional Input-Output Analysis
Chair	TBA	
Title	Economic structure of Uzbekistan and other Central Asian countries: Input-output approach	
Author	MADGAZIEVA SEVARA	Ritsumeikan University
Title	Exploring Industrial Policy in the Kyrgyz Republic	
Author	Rajaonarison Nargiza	Ritsumeikan University
Title	Sectoral and Spatial Linkages in Northeast Asia	
Author	Ganbaatar Uyanga	Meiji University
Title	Identification Fundamental Economic Structure in Developed Economy: The Case of Japan	
Author	Imansyah Muhammad	Lambung Mangkurat University

19 March (Tuesday) [Room C] 09:30-11:00

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topic 1	Environment, Resource and Energy	
Chair	TBA	
Title	Climate change and the regional disparity of income in Japan	
Author	Katsuhiro Saitou	The University of Tokyo
Title	The effectiveness of the international cooperation in Japan and Korea for wind power generation	
Author	Sungin Na	Hiroshima Shudo University

Special Session in Room A

19 March (Tuesday) [Room C] 13:15-14:45

topic 1	Environment, Resource and Energy	
Chair	TBA	
Title	Analysis of inter-regional effects caused by the wide-area operation of the power grid in Japan	
Author	Ayu Washidu	Waseda University
Title	Technology-adjusted national carbon accounting for effective climate policy: from the perspective of vertical specialization	
Author	Zhang Hongxia	Renmin University of China
Title	Compilation and Application of Input-output Table of China on Aluminium Industry	
Author	Kangxian Ji	University of Chinese Academy of Sciences

19 March (Tuesday) [Room C] 15:00-16:30

topic 6	Regional Input-Output Analysis	
Chair	Yasushi Kondo	Waseda University
Title	Changes in Input-Output Structure Caused by Big Earthquake Disaster: Stability of Input Coefficients and Distribution Coefficients	
Author	Kunimitsu Yoji	NARO
Title	Measuring Inclusivity and Marginality: Determining the Accuracy of Various Location Quotient Approaches in Estimating the Philippine Regional Input Output (IO) Coefficients	
Author	Teves Ma. Josephine Therese Emily Galicinao	Kyoto University
