Tales from the I-O world

SOUTH AMERICA INPUT-OUTPUT REGIONAL TABLE

Background

In the coming months a 2005 South American 40-by-40 IOT results will be presented and published. It comprises nine countries: Argentina, Brazil, Chile, Colombia, Ecuador, Peru, Uruguay and Venezuela. This table is part of the study "GLOBAL VALUE CHAINS AND PRODUCTIVE COMPLEMENTARITY IN SOUTH AMERICA" and as mentioned in Newsletter N°29 February 2015, the study is led by both IPEA (Brazil) and ECLAC with the support of three other organizations: OECD, CAF and ABDI.

Weak economic integration

The development of this multinational IOT overcame numerous difficulties and challenges. Some were related to the lack of economic integration among South American nations. Indeed, in most South American countries, the main trading partners in the period 2009-2012 were USA and European Union – in some China. Thus other countries of the region had fairly low shares of trade. Brazil and Argentina are exceptions: Brazil is the second largest destination for Argentina´s exports and the first origin of its imports; at the same time, Argentina is the fifth in exports for Brazil and sixth in imports. But for Colombia during that period, all other South American countries received 12% of its exports and sent 15% of its imports.

Elaboration process

A team of consultants was selected by each country between April and June 2014 to work on the study. Three workshops were held: August and December 2014 in Brasilia and June 2015 in Santiago, Chile. The first workshop was lead by Dr. Nadim Ahmad, an OECD expert in global value chains. In each workshop, progress was reviewed. Also methodological difficulties were identified, and specific tasks were defined to enable the project to move forward and get completed.

As mentioned before, the process of preparation and assembly of the South American IOT faced several methodological obstacles related to the different base years, valuations (basic prices, producer prices, FOB/CIF imports, etc.), sectoring and table size of the national accounts in each country. It is an industry-by-industry table

Only Brazil, Colombia, and Uruguay have SNAs with a 2005 base year that are generally commodity-by-industry in format. For the remaining countries it was necessary to make adjustments to and estimates using IOTs of very different base years. This led to delays in the development of the national IOT and, therefore, of the South American equivalent.

The table is generally based on the IOTs (inputs, totals, domestic and imports) elaborated by each participating nation's official national statistical office, the balances of supply and usage, and economic censuses of specific sectors (such as manufacturing). Foreign trade data were used were those supplied by UN-COMTRADE and ALADI.

Expected results

A regional South American 40-by-40 IOT with a matrix of transactions, vectors of final demand, added value and employment. South American countries are separated from the rest of the world (1) in the vector

of exports, (2) in the body of the table (intermediate and final demand) and (3) also in its imports. A corresponding link will be available at IPEA and ECLAC once the IOT is published.

Jaime Vallecilla
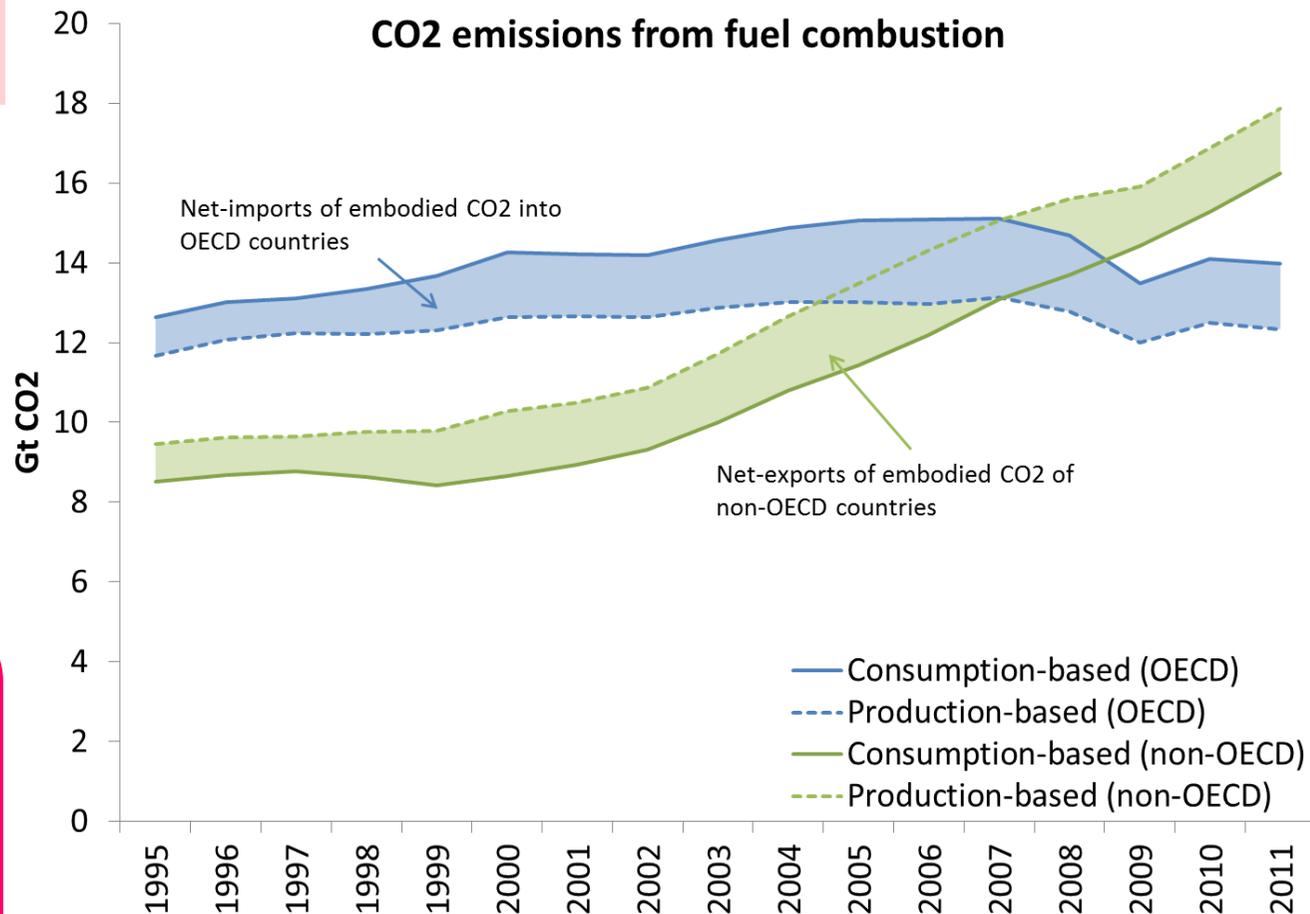Pontificia Universidad Javeriana
Universidad de Manizales
(Colombia)

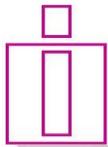## New OECD estimates of Consumption-Based Carbon Dioxide Emissions

To date, OECD's new Inter-Country Input-Output (ICIO) database, released in June 2015, has been used mostly to estimate and analyse indicators of trade in value added. Be aware, however, that it also contains new and updated 1995-2011 time series of consumption-based emissions generated for each of 61 countries. That is, IEA energy statistics (CO2 emissions from fuel combustion) have been integrated into the ICIO system. Note that these new production-based estimates do not necessarily comply with other published statistics. This is because emissions associated with fuel purchases by nonresidents have been allocated to the nonresidents' countries. More information

European Commission searches I-O researchers and modelers

Two new post-doc (or 5 year research experience) posts to work on the estimation of the EU Multi-country IOT together with Eurostat and the OECD and on the application of Econometric IO and Computable General Equilibrium models. Candidates should have nationality from the EU Member States or Associated Countries (Albania, Bosnia & Herzegovina, Faeroe Islands, Iceland, Israel, Liechtenstein, Montenegro, Norway, Moldova, Switzerland, Macedonia, Serbia and Turkey). Code: 2015-SVQ-J5-FGIV-5193 – SEVILLE
Deadline: 31/08/2015

CO2 emissions from fuel combustion

Net-imports of embodied CO2 into OECD countries

Net-exports of embodied CO2 of non-OECD countries

- Consumption-based (OECD)
- Production-based (OECD)
- Consumption-based (non-OECD)
- Production-based (non-OECD)

Published papers and books in IOA and related methods

Last ESR articles

Economic Systems Research

Journal of the IIOA

Latest articles (up to 31th July 2015)

UPDATING INPUT-OUTPUT TABLES WITH BENCHMARK TABLE SERIES. WANG H., WANG C., ZHENG H., FENG H., GUAN, R. and LONG W.

Numerous methods have been proposed to update input-output (I-O) tables. They rely on the assumption that the economic structure will not change significantly during the interpolation period. However, this assumption may not always hold, particularly for countries experiencing rapid development. This study attempts to combine forecasting with a matrix transformation technique (MTT) to provide a new perspective on updating I-O tables. Under the assumption that changes in the trend of an economic structure are statistically significant, the method extrapolates I?O tables by combining time series models with an MTT and proceeds with only the total value added during the target years. A simulation study and empirical analysis are conducted to compare the forecasting performance of the MTT to the Generalized RAS (GRAS) and Kuroda methods. The results show that the comprehensive performance of the MTT is better than the performance of the GRAS and Kuroda methods, as measured by the Standardized Total Percentage Error, Theil's U and Mean Absolute Percentage Error indices.

A METHOD TO CREATE CARBON FOOTPRINT ESTIMATES CONSISTENT WITH NATIONAL ACCOUNTS. EDENS B, HOEKSTRA R., ZULT D., LEMMERS O., WILTING H. and WU R.

Although MRIO databases use data from national statistical offices, the reconciliation of various data sources results in significantly altered country data. This makes it problematic to use MRIO-based footprints for national policy-making. This paper develops a potential solution using the Netherlands as case study. The method ensures that the footprint is derived from an MRIO dataset (in our case the World Input-Output Database (WIOD)) that is made consistent with Dutch National accounts data. Furthermore, usage of microdata allows us to separate re-exports at the company level. The adjustment results in a foreign footprint in 2009 that is 22% lower than the original WIOD estimates and a significantly altered country allocation. We demonstrate that already in the data preparation phase due to the treatment of re-exports and margins, large differences arise with Dutch national statistics, which may help explain the variation in footprint estimates across MRIO databases.
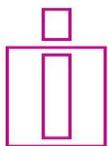
USING CHARM TO ADJUST FOR CROSS-HAULING: THE CASE OF THE PROVINCE OF HUBEI, CHINA. FLEGG A.T., HUANG Y. and TOHMO T.

Data for the Chinese province of Hubei are used to assess the performance of Kronenberg's Cross-Hauling Adjusted Regionalization Method (CHARM), a method that takes explicit account of cross-hauling when constructing regional I-O tables. A key determinant of cross-hauling is held to be the heterogeneity of commodities, which is estimated using national data. However, contrary to the authors? findings for Finland, CHARM does not generate reliable estimates of Hubei's sectoral exports, imports and volume of trade, although it is more successful in estimating sectoral supply multipliers. The poor simulations of regional trade are attributed to the fact that Hubei is a relatively small region, where there is a large divergence between regional and national technology and pattern of final demand. The simulation errors are decomposed into components reflecting differences between regional and national technology, final demand and heterogeneity. The third component is found to be the least important of the three sources of error.

CARBON EMISSION ACCOUNTING IN MRIO MODELS: THE TERRITORY VS. THE RESIDENCE PRINCIPLE. USUBIAGA A. and ACOSTA-FERNÁNDEZ J.

Consumption-based CO2 emissions, which are commonly calculated by means of environmentally extended I-O analysis, are gaining wider recognition as a way to complement territorial emission inventories. Although their use has increased significantly in the last years, insufficient attention has been paid to the methodological soundness of the underlying environmental extension.

This should follow the internationally agreed accounting rules of the System of Environmental-Economic Accounting, which addresses the activities undertaken by the residents of a country, independent from where these take place. Nonetheless, some footprint calculations use extensions that account for all the activities within the territory, which leads to methodological inconsistencies. Thus, this article introduces the most relevant conceptual differences between these accounting frameworks and shows the magnitude of the gap between them building on the data generated for the EXIOBASE model. It concludes that the differences are high for many countries and their magnitude is increasing over time.

REFLECTIONS ON THE INOPERABILITY INPUT-OUTPUT MODEL. DIETZENBACHER E. and MILLER R.E.

We argue that the inoperability input-output model is a straightforward -albeit potentially very relevant- application of the standard input-output model. In addition, we propose two less standard input-output approaches as alternatives to take into consideration when analyzing the effects of disasters or disruptions.

Highlights in journals

CONDON J., FELTENSTEIN A., PLASSMANN F., RIDER M. AND SJOQUIST D.L . (2014) A REGIONAL MODEL OF GROWTH ORIENTED FISCAL POLICY: AN APPLICATION TO GEORGIA AND ITS COMPETITOR STATES. THE REVIEW OF REGIONAL STUDIES 44(2):177-209.

A number of U.S. states are considering tax reforms that would significantly reduce or eliminate income taxes and recover the lost revenue by increasing its sales taxes. To gauge the economic effects of such reforms, we construct a multi-regional, dynamic, open economy, general equilibrium (CGE) model. Our model is an advancement over existing regional CGE models used to simulate the impact of state tax reforms in the U.S. context. We simulate the impact of a variety of tax reforms and find that Georgia's economy benefits but at the expense of the five comparison states we include.

SCHULTE IN DEN BÄUMEN H., TÖBBEN J., LENZEN M. (2015) LABOUR FORCED IMPACTS AND PRODUCTION LOSSES DUE TO THE 2013 FLOOD IN GERMANY. JOURNAL OF HYDROLOGY 527:142–150

During May and June 2013 heavy rains caused disastrous floods in several countries in Europe. In this study we use a new high-resolution model of the German economy to simulate the post-disaster economic shock of the flood. Due to the heavy reliance of modern economies on inter regional supply chains, substantial economic impacts are felt in states and industries outside the flooded area. Cessation of export from one industry, for example in Bayern, in the wake of the flood affects many other industries and regions. Trade links are broken immediately and cause shortages. Supply restrictions from those industries spread further, reducing production possibilities in the national and global economy.

Industry- and region specific direct impacts are estimated from time series data about compensations of lost working hours from social insurance schemes in the case of external events such as business cycles and natural disasters. We estimate the total indirect loss of production possibilities that affect in particular the motor vehicle and food industries in Baden-Württemberg, Nordrhein-Westfalen and Niedersachsen, but also foreign production, to be €6.2 billion. Regions and industries outside the flooded area experience around €400 million of the loss. We find the economic impact of the flood to be much higher as in previous studies and mitigation is more likely to be considered if this effect is taken into account.

Highlights in Books

EU EXPORTS TO THE WORLD: EFFECTS ON EMPLOYMENT AND INCOME. Arto I., Rueda-Cantuche J.M., Amores A.F., Dietzenbacher E., Sousa N., Montinari L. and Markandya A. European Commission, Luxembourg 2015

The report and map, prepared jointly by the European Commission JRC and the Directorate-General for Trade, analyses the complex interaction between trade activities, the job markets and income in all EU Member States and comes to the following main conclusions:

Exports are increasingly important for supporting jobs in EU; these export-related jobs are on average better paid.

Citizens of all EU, not only from the export 'powerhouses', benefit.

With the expansion of GVC, EU exports support more jobs also in partner countries.

Events

IIOA 2015 Wall of Fame

KIRSTEN WIEBE, new Leontief Prize

The impact of renewable energy diffusion on European consumption-based emissions

Abstract:

The amount of carbon embedded in the final consumption of goods and services in a country or region depends on the amount of goods and services consumed and the emission intensity of the production processes along global production chains. A reduction of consumption-based emissions can be achieved from both sides, a reduction in total consumption and a reduction in the emission intensity of the production processes. The power sector is one of the most carbon intensive industries along global production chains and the global deployment of renewable power generation technologies (RPGTs) is one possibility to significantly reduce emissions in this industry. This paper combines three different strands of literature, multi-regional input-output (MRIO) analysis, dynamic energy-economy-environment models and technological change in renewable energy, to model the impact of the global diffusion of renewable energies on European consumption-based emissions. The global diffusion of renewable energy technologies (PV and wind) depends on the development of technology costs, which are modelled using learning curves. With increasing deployment of renewables within the EU as well as increasing RD&D efforts, the EU can achieve an accelerated costs decrease for these technologies, thus fostering deployment of RPGTs at a global scale through the effect of decreasing costs. This behavior indirectly influences the electricity mix abroad, making it less carbon intensive, so that consumption-based emissions of the EU decrease.

Elsevier Journal welcomes I-O studies

The Editor-in-Chief (IIOA member Ming Xu) welcomes submissions and special issues from the IIOA community on any topics related to sustainable resource management and conservation.).

Jury Decision:

"Kirsten Wiebe's work takes a detailed look at Europe's efforts to decarbonise its economies through increasing the penetration of renewable energy sources in its power grids. The geopolitical relevance of her results become clear against the backdrop of the recent G7 summit at Schloss Elmau in Germany, where leaders pledged to phase out the world's use of fossil fuels by the end of the 21st century. The commissioning and interconnection at a continental scale of a renewable energy technology portfolio including photovoltaic utilities, wind turbines and concentrated solar power is one of the centrepieces underpinning efforts towards this ambitious climate change abatement goal. Coupling learning curves with multi-region input-output analysis, Kirsten Wiebe's work confirms this view by demonstrating how Europe's emissions would reduce under rapid uptake of renewable energy."

The Leontief Prize 2015 Jury
(Erik Dietzenbacher, Michael Lahr, Manfred Lenzen and Cuihong Yang)

Past conferences

2nd INTERNATIONAL SEMINAR OF REGIONAL I-O AND OTHER APPLICATIONS, October 29th - November 1st 2014, Guadalajara (MEXICO)

This International Seminar was organized by the research team coordinated by Josefina Callicó (University of Guadalajara). This pioneering group of economists has calculated regional I-O tables from a little over 20 years ago, for the State of Jalisco (Mexico) for 1990, 1993, 1996 (1st interregional table in Mexico), 2000, 2006 and 2008. Currently, they have 8 publications on this topic and in 1999 they already had organized the 1st International Seminar (also in Guadalajara, Mexico). On that occasion, we had the participation of Jeffrey Round, Dirk Stelder, Peter McGregor, Joaquim Guilhoto, Carlos Azzoni and virtually all Mexicans who worked on I-O analysis at the time.

In this 2nd international seminar, Geoffrey Hewings, Michael Lahr, Carmen Ramos of the University of Oviedo, Joaquim Guilhoto and Carlos Azzoni participated along with a dozen or more Mexican researchers as well as officials of the National Institute of statistics and geography (INEGI). It was attended by teachers and students of the University of Guadalajara. This seminar was a commitment to a commission
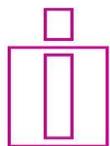
of the IIOA who came in 2012 to discuss possibilities of us hosting an international conference. That is, it was a pre-condition to enable our country to host the 23rd International I-O Conference in Mexico City in 2015.

In 2012, the Mexican delegation agreed to conduct four internal conferences prior to the 23rd International Conference; this was the fourth and final session. So, in essence this 2nd seminar in Guadalajara had been being planned for two years. Thus, the papers were grouped around the themes of the relevance of input-output analysis, the construction of regional IOT, public policy formulation, and project evaluation.

The Rector of the University of Guadalajara opened the seminar in the Paraninfo, a magnificent building more than a century old,. The Paraninfo contains murals by José Clemente Orozco and is the most emblematic building of the University. Geoffrey Hewings gave the opening keynote address, which was attended by over 250 students and others. His address was followed by a panel on the relevance of the I-O.

Following the panel, we sadly left Parafino, but only to enjoy an excellent meal at "El Santo Coyote" (name of a Mexican legend) a restaurant where we had guacamole and other regional dishes. On the way we enjoyed observing many of Mexico's beautiful gardens and vegetation. The afternoon sessions started with an interesting lecture by Michael Lahr .

We finished our International Seminar with a cultural tour that coincided with the Day of the Dead, which consists of a set of celebrations in Mexico that honour ancestors. We saw parades as well as displays in the main public buildings that showed traditional altars for dead. There are even contests for the design of altars. We completed the tour in the village of Tlaquepaque, Jalisco. There more altars were on display along the streets. We also saw many children and young women dressed in traditional skeleton costumes or with faces painted to look like skulls. The tour ended with us dining while watching folk dances of the State of Jalisco.

Next conferences

23rd INFORUM World Conference, August 23rd-29th 2015 Bangkok (THAILAND)

The INFORUM group of international partners will hold its 23rd World Conference this year in Bangkok. This conference will be hosted by the Faculty of Economics, at Chulalongkorn University, from August 23 to August 29, 2015. The venue is the Chulalongkorn University historical building. This is the oldest and most prestigious university in Thailand, located in the heart of Bangkok.

Each year since 1993, Inforum has held an annual world conference. The aim of these conferences is to advance the work of empirical input-output modeling, analysis, and data development techniques through the presentation and publication of papers representing the work of INFORUM activities worldwide. Although the agenda overlaps somewhat with that of the International Input-Output Conference, it more specifically is dedicated to empirical work, especially in the areas of model building and data development. More information on the INFORUM conferences

Organizing Committee Contact Information:
Somprawin Manprasert
Danupon Ariyasajjakorn

Key deadlines:
Preliminary registration **April 30, 2015**
Registration confirmation **June 15, 2015**
Final paper submission **Aug 10, 2015**

6th Spanish Conference on Input-Output Analysis, September 7th-9th 2015, Barcelona (SPAIN)

The 6th Spanish Conference on Input-Output Analysis (8th and 9th Sept) and the 1st edition of the Spanish School of I-O Analysis (7th Sept) will be held in Barcelona. The Hispanic-American Input-Output Society (SHAIO), the University of Barcelona (UB), the Autonomous University of Barcelona (UAB), and the Statistical Institute of Catalunya (IDESCAT) are working together to organize this conference that will take place at the Faculty of Economics and Business (UB).

The **modules** (in Spanish) of the school will be:
1. Modelos MRIO y LCA para el cálculo de huellas antropogénicas
2. Un caso práctico en la elaboración del Marco I-O: la experiencia de Cataluña
3. Análisis cuantitativo del comercio internacional e interregional: modelos gravitatorios, econometría espacial y IOT

We encourage the participation of young (<40) researchers with the 4th Emilio Fontela Research Prize for the best conference paper.

Plenary Sessions *by*:
Sanjiv Mahajan
Klaus Hubacek
Geoffrey J. D. Hewings

International Conference on Economic Theory and Policy September 22nd-24th (25th) 2015, Tokyo (JAPAN)

Important Dates
Submission of abstract: **31 July 2015**
Notification of acceptance: **7 August 2015**
Full paper submission: **31 August 2015**
Int. Conference ETP **22-24 Septem 2015**
Young Researchers Workshop **25 Septem 2015**

Topics: Economic Theory, Economic Policy, Empirical Studies, Input-Output Analysis, History of Economic Thought, etc.

Lectures
Bertram Schefold (Goethe-Universitat), Pier Luigi Porta (University of Milan-Bicocca), Fernando Ferrari Filho (Universidade Federal do Rio Grande do Sul), Jan Toporowsky (University of London)
Other Participants

Organizer: Prof. Takashi Yagi (Meiji University, School of Political Science and Economics)

Annual Conference Pan Pacific Association of Input-Output Studies October (30th) 31st-November 1st, 2015, Tokyo (JAPAN)

Important Dates
Submission of abstract: **30 June 2015**
Notification of acceptance: **24 July 2015**
Full paper submission: **4 October 2015**
Young IO Research. Workshop **30 October 2015**
PAPAIOS Conference **31 Oct-1 Nov 2015**

Organizer: Prof. Takashi Yagi (Meiji University, School of Political Science and Economics)

International Student Conference of Economics (ISCE), October 10th-11th, 2015. Babolsar (IRAN)

The 1st International Student Conference of Economics (ISCE) will be held in October 2015 at the University of Mazandaran in Babolsar (Iran). After successfully holding 5 annual national student conferences in economics since 2008, the Department of Economics of the University of Mazandaran has now decided to hold conferences on economics on an international scale. The language of the conference will be both Persian and English held in two parallel sessions. The conference will, moreover, be a non-profit scientific forum.

Topics: Economic Growth and Development, International Economics, Labour Economics, Environmental & Resource Economics, Financial Economics, Public Sector Economics, Monetary Economics, Ecotourism, Islamic Economics.

Benefits:
•All papers and abstracts will be published in refereed conference proceedings (online).
•Outstanding papers will be considered for Iranian Economic Review & International Journal Business and Development Studies.
•Participation certificates will be provided.
•The three best papers will be awarded a prize at the terminating conference ceremony.

4th National Input-Output Conference, February 2016, Tehran (IRAN).

The Conference Council has decided that the 4th National Conference will be held on February 2016, in the Faculty of Economics and Institute for Economic Sciences (ATU) at Tehran (Iran) with the financial support of Statistical Centre of Iran and Islamic Parliament Research Centre, Alzahra University and Mazandaran University are actively participating in the conference.

Topics:
1. Theoretical Basis of SUT and Methods of Estimation of SIOTs.
2. Evaluation of Compilation of IOTs in Iran.
3. Evaluation of Methods of Updating IOTs.
4. Physical and Monetary IOTs.
5. Evolution of Factor Contents in International Trade Theory.
6. Theoretical Development of I-O Models in Short-run and Long-run Analysis.
7. Application of I-O, SAM and CGE in: Resilience, Energy, Subsidies, Heath, Services, Environments, and … .
8. Methods of Estimation of RIOTs and their Applications.

We encourage foreign researches to attend. Although the conference will predominantly in Persian, some time will be allocated for Anlglophone sessions.

24th International Input-Output Conference, July 3rd-8th, 2016, Seoul (KOREA)

Seoul has long been the capital **city** of Korea from ancient periods noted by its traditional heritage and numerous tourist attractions. According to the Economist Intelligence Unit survey on Best Cities Ranking and Report, Seoul ranks #20 out of 70 major cities in the world. In terms of safety, Seoul ranks #24 out of 50 major cities according to the Safe Cities Index 2015 of Economist Intelligence Unit. The **conference site**, Yonsei University is located in Shinchon, flourished by Korean youth, trendy restaurants, shops and cafes. Also, Shinchon is easily accessible from the Inchon international airport.

Summer **weather** is sunny and bright. Average temperature is about 23.7ºC (74.7ºF) with a range of 20.5-27.5ºC (68.9-81.5ºF) 78% humidity.