

# INTERNATIONAL INPUT-OUTPUT ASSOCIATION

## Welcome from the Editor



Dear IIOA member,

I am pleased to release the latest issue of the *International Input-Output Newsletter*. I thank all contributors.

This issue features information about the next IIOA Conference in Malaysia. We hope to see all of you there.

It also contains information about Latest ESR articles, Highlights in Journals and books. You can also find a Call for The 4th International Conference on Economic Structures (ICES 2020) and 60th ERSA Congress, 13th World Congress of the RSAI, Input-output Workshop Special and Industrial Ecology Laboratory (IELab) Conference 2020.



I hope you enjoy it! Any feedback, comments or suggestions are greatly appreciated. I also welcome contributions to future issues.

### **Vinicius de Almeida Vale**

*IIOA Newsletter* Editor

Federal University of Parana, Brazil

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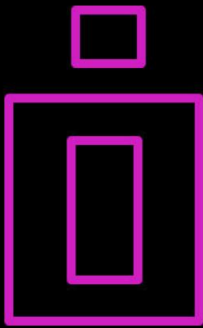
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Would you like to contribute to the IIOA newsletter?

Contact us [newsletter@iioa.org](mailto:newsletter@iioa.org)

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# INTERNATIONAL INPUT-OUTPUT ASSOCIATION

## Next IIOA Conference



**28<sup>th</sup> International Input-Output  
Association Conference  
and  
10<sup>th</sup> Edition of the International School  
of I-O Analysis**  
*5<sup>th</sup> - 10<sup>th</sup> July 2020, Kuala Lumpur,  
Malaysia*

### Aims for the Conference

The 2020 International I-O Conference in Kuala Lumpur, Malaysia will build on the successes of prior conferences sponsored by the IIOA. Organizers of the conference want to continue to embrace the vibrance of our recent conferences, which have promoted and stimulated the exchange of ideas amongst attendees. Thus, we expect to host a wide range of experienced academics, scientists, researchers, innovators, educators and policy makers from around the globe in various stages of their careers. The hope is to inspire the next generation of researchers and to encourage even more future partnerships and collaborations.

The main theme of the forthcoming conference is "Promoting Economic Growth and Strengthening Social Pillars by Empowering Local Small and Medium Enterprises (SMEs)." Particularly welcome are papers/presentations that inform policies on how to achieve the sustainable development goals. To ensure, we will be reaching out to younger scholars in the world, as well to those with more experience. We, the IIOA, particularly welcome newcomers. and hope for broad participation. We have a reasonable number of travel grants that we make available to younger scholars from poorer nations.

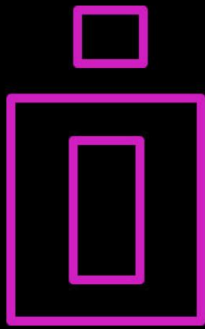
### Organised Sessions

Shigemi Kagawa, Kyushu University, Fukuoka, Japan

We strongly encourage all members to suggest and organise special sessions for the IIOA Conference. In the past, these sessions have been most successful in terms of the number of attendants and participant interaction. Please send proposals for thematic sessions or sets of sessions well before the deadline to the Chair of the Scientific Programme Committee (SPC), Shigemi Kagawa, via e-mail ([kagawa@econ.kyushu-u.ac.jp](mailto:kagawa@econ.kyushu-u.ac.jp)) and include all of the following:

- title(s) of the organised session(s).
- the name(s) and institutional affiliation(s) of the organiser(s).
- abstract(s) describing the theme/objectives of the session(s) (of not more than 300 but not less than 200 words).
- name(s) and institutional affiliation(s) of session chair(s).
- titles and paper IDs of the presentations therein (three presentations per session).
- names and institutional affiliations of the presenters.

Once the session proposal is accepted by the SPC Chair, the abstracts of individual articles should follow the information as specified below for each of the presentations planned for the proposed sessions.



# INTERNATIONAL INPUT-OUTPUT ASSOCIATION

## Individual submissions

Authors must submit their names, institutional affiliation(s), the paper title and an abstract of the presentation (not less than 200 words but not more than 300 words). Further, when using our abstract submission system, they will need to select one or more keywords (as provided by the abstract submission system) that identify the subject matter. If a "best" relevant subject is not available, please contact the Scientific Programme Committee (SPC) Chair. Abstracts will be individually reviewed and screened by members of the SPC before they are included in the conference programme. Thus, we ask authors to provide the following information in the abstracts that they submit:

- the research question;
- the research approach used;
- the data used (if any); and
- the (most importantly) novelty of the research.

To be accepted, all submissions must include some aspect of interindustry economics. That is, they must use related techniques or discuss how interindustry data are tabulated, estimated, or otherwise developed.

Not all abstracts are selected for presentation at our conferences. So failing to provide a response on any of the above will put an abstract at a relative disadvantage. Correspondingly, if instead of an abstract, a full paper (at least 2,000 words) is submitted by the deadline for abstract submission, the possibility of acceptance can be enhanced since information on all items listed above is likely to be more readily incorporated.

In order to encourage diverse participation, we allow a given author to give no more than two (2) presentations. The SPC Chair reserves the right to jettison presentations at will if this limit is not observed. Nevertheless, a given author's name can be included on multiple entries.

[The Conference](#)

[Conference Organizers](#)

[Local Organizing Committee](#)

[Sponsors](#)

[Kuala Lumpur as host city](#)

[UPM as Host Organization](#)

[Conference Program](#)

[Conference Venue](#)

[Scientific Programme Committee](#)

[Accommodations](#)

[Transportation and directions](#)

[Eateries \(Bars and Restaurants\)](#)

[Attractions in Putrajaya](#)

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**Host  
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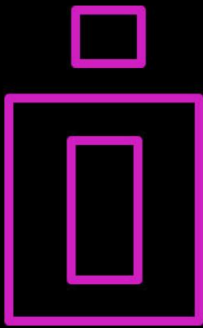


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# Newsletter

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# INTERNATIONAL INPUT-OUTPUT ASSOCIATION

## Call for Nominations for IIOA Fellows

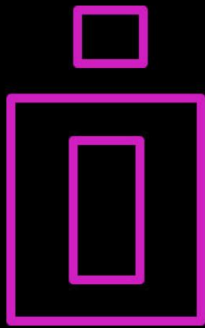
Nomination for new Fellows of the IIOA is open. IIOA members may nominate any members of the Association according to the guidelines described below. The newly elected Fellows of the IIOA will be announced at the 28<sup>th</sup> IIOA conference scheduled to take place July 5-10, 2020 in Malaysia. For consideration during this year's nomination process, the current Secretary of the Fellows of the IIOA, Geoffrey Hewings (at [hewings@illinois.edu](mailto:hewings@illinois.edu)), must receive materials for all nominations no later than **January 31, 2020**. Current Fellows of the IIOA will vote for **up to** two new Fellows of the IIOA.

Fellows of the IIOA are honored for their scientific contributions to the field of input-output analysis broadly defined. Members of the IIOA, excluding Fellows of the IIOA themselves, must nominate any new Fellows. A nominee must have been a member of the IIOA for at least six years. Each nomination should include: name, current address, current email, current institution, brief curriculum vitae, list of up to ten (10) key publications, and a description of the candidate's contribution to input-output analysis of no more than 100-200 words. Letters from two (2) IIOA members, excluding the nominee and any Fellows of the IIOA, are required to support a given nomination. Nominations from prior years are not carried over; that is, full re-nomination is required for anyone nominated in a prior year.

All current Fellows of the IIOA are eligible to vote on each year's set of nominees. Up to two new Fellows of the IIOA may be elected, and any newly elected Fellows will be installed during a plenary event at the year's International I-O Conference. Fellows may call themselves Fellows of the IIOA and have the right to free lifetime membership in the IIOA. Fellows are obliged to promote the development and to advocate suitable application of input-output analysis, broadly defined.

Thank you for your active participation.

Geoffrey Hewings ([hewings@illinois.edu](mailto:hewings@illinois.edu))



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# INTERNATIONAL INPUT-OUTPUT ASSOCIATION

## Published papers and books in IOA and related methods

### Latest ESR articles

[Economic Systems Research](#)

[Journal of the IIOA](#)

[Volume 31, Issue 4, 2019](#)



**Okuyama, Y. and Yu, K. D.** [Return of the inoperability](#). *Economic Systems Research*, 31(4): 467-480.

There has been unrest in the research community investigating the inoperability of an economic system under disaster situations. The inoperability input-output model (IIM), which is very popular in the risk management field, has become a center of argument, particularly from the input-output researchers, that IIM is a straightforward application of the standard Leontief input-output model. This paper revisits the concept of inoperability, rather than IIM, and proposes its new role in disaster impact analysis using a conventional tool, i.e. the RAS method, for illustrating how the inoperability of an economic system in the aftermath of disaster can be evaluated. The proposed framework is employed to examine the inoperability of industries resulting from the

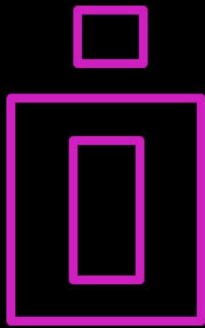
1995 Kobe earthquake. The findings of the analysis reveal the usefulness of inoperability concept that can even incorporate resilience (gained operability) using the proposed framework of this paper.

**Torres-González, L. D. and Yang, J.** [The persistent statistical structure of the US input-output coefficient matrices: 1963-2007](#). *Economic Systems Research*, 31(4): 481-504.

The paper finds evidence for the existence of a statistical structure in the US input-output coefficient (A) matrices for 1963-2007 and characterizes the identified statistical regularities. For various aspects of A matrices, we find smooth and unimodal empirical distributions (EDs) with a remarkable stability in their functional form for most of the samples. The EDs of all entries, row sums, and the entries of the (left- and right-hand) Perron-Frobenius eigenvectors are well described by fat-tailed distributions, while the EDs of column sums and eigenvalues' moduli are explained by the normal and the beta distribution. The paper provides several economic interpretations of these statistical results as well as some implications and potential uses for structural and stochastic input-output analysis.

**Dietzenbacher, E., van Burken, B. and Kondo, Y.** [Hypothetical extractions from a global perspective](#). *Economic Systems Research*, 31(4): 505-519.

The hypothetical extraction method (HEM) has been widely used to measure interindustry linkages and the importance of industries. HEM considers the hypothetical situation in which a certain industry is no longer operational. HEM was developed for national economies, using national input-output tables. When performing HEM, it is assumed (often implicitly) that the input requirements that were originally provided by the extracted industry are met by additional imports in the post-extraction situation. Applying HEM to global multiregional input-output tables then causes serious problems. It is no longer sufficient to assume that the required inputs are imported. Instead, it is necessary to indicate explicitly how much is imported from each origin to replace the original inputs. Our adaptation of HEM is the global extraction method (GEM). As an illustration, GEM is applied to the extraction of the motor vehicle industry in China, the US, and Germany, using the 2014 WIOD input-output table.



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**Zhang, N. and Zhao, X.** [Measuring global flow of funds: focus on China, Japan, and the United States](#). *Economic Systems Research*, 31(4): 520-550.

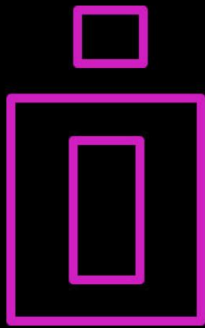
This paper aims to establish a new statistical framework for measuring global flow of funds (GFF) based on its inherent mechanisms. It advances a previous theoretical discussion and develops a practical operational statistical matrix. Based on theoretical and practical possibilities the paper gets existing data from the International Investment Position, the Coordinated Direct Investment Survey, the Coordinated Portfolio Investment Survey, and International Banking Statistics are integrated for measuring GFF. The main outcome is a prototype GFF matrix that includes stock data geographically disaggregated by country/region and selected financial instruments. The paper presented GFF Matrix compiled with the pattern of 'Country vis-à-vis Country' matrix, and through using the GFF matrix to analyze the basic status, mutual relationship and existing problems between China, Japan, and the United States in the external financial positions.

**Rodrigues, J. F. D., Amores, A. F. and Paulo, R.** [Bayesian selection of technology assumptions for the transformation from supply-use to input-output tables](#). *Economic Systems Research*, 31(4): 551-573.

In the construction of input-output models from supply-use tables, technology assumptions disambiguate how an industry uses inputs in the production recipe of multiple outputs. This paper uses Bayes' theorem to select technology assumptions, taking into account empirical observations. The paper presents a formulation to explore hybrids between product and industry technology assumptions in product-by-product tables. We then present Markov chain Monte-Carlo techniques to implement the Bayesian method for selecting technology assumptions. We apply the method in a case study using Eurostat supply-use tables of 2004 and 2005, exhibiting a volume of secondary products of less than 13%, and 59 products and industries per country. The results show that the choice of technology is not important, given that there is no strong evidence in favour of any of them.

**Duarte, R., Sarasa, C. and Serrano, M.** [Structural change and female participation in recent economic growth: a multisectoral analysis for the Spanish economy](#). *Economic Systems Research*, 31(4): 574-593.

Economic growth has different impacts on gender gaps. In recent decades the growing participation of women in the labour market has reduced the gender employment gap, however a notable gender pay gap still persists standing at around 15% on average in the European Union. In this context, this paper evaluates the impact of economic growth patterns on the evolution of gender employment and pay gaps. First, sectorial feminization, direct discrimination, and structural change factors are identified and evaluated as ways to explain changes observed in the gender pay gap. Second, we explore the influence of demand, technology, and intensity factors on the evolution of employment combining gender, skill, sectorial, and temporal perspectives. As a case study, we examine Spanish economic growth from 1980 to 2007 and the influences on the size, composition (by skill), and distribution (by sector) of female and male employment, as well as the consequences for gender gaps. Our results show that structural change contributed to reduce the gender employment gap in Spain; while the evolution of the gender pay gap is less conclusive, following a sort of inverted U-shape. This paper shows the suitability and potential of the multisectorial input-output framework to analyse structural and technological changes and their impacts on the gender employment and pay gaps.



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**Lenzen, M.** [Aggregating input-output systems with minimum error.](#) *Economic Systems Research*, 31(4): 594-616.

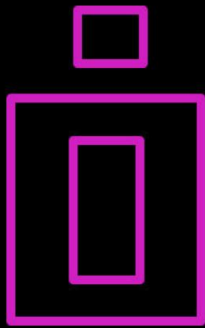
Recent advances in multi-region input-output (IO) table construction have led to large databases becoming available. Some of these databases currently demand too much computer memory or user cognition to be handled effectively outside high-performance environments, especially for applications such as virtual laboratories, computable general equilibrium modelling, linear programming, series expansion, or structural decomposition analysis, thus inhibiting their widespread use by analysts and decision-makers. Aggregation is an obvious solution; but there is a need for structured approaches to aggregating an IO system in a way that does not compromise the ability to effectively answer the research question at hand. In this article, I describe how structural path analysis can be used to realise a computationally inexpensive method for aggregating IO systems whilst minimising aggregation errors. I show that there exists no one-fits-all strategy, but that optimal aggregation depends on the research question at hand.

**Bagheri, M., Alivand, M. S., Alikarami, M., Kennedy, C. A., Doluweera, G. and Guevara, Z.** [Developing a multiple-criteria decision analysis for green economy transition: a Canadian case study.](#) *Economic Systems Research*, 31(4): 617-641.

Recent advances in multi-region input-output (IO) table construction have led to large databases becoming available. Some of these databases currently demand too much computer memory or user cognition to be handled effectively outside high-performance environments, especially for applications such as virtual laboratories, computable general equilibrium modelling, linear programming, series expansion, or structural decomposition analysis, thus inhibiting their widespread use by analysts and decision-makers. Aggregation is an obvious solution; but there is a need for structured approaches to aggregating an IO system in a way that does not compromise the ability to effectively answer the research question at hand. In this article, I describe how structural path analysis can be used to realise a computationally inexpensive method for aggregating IO systems whilst minimising aggregation errors. I show that there exists no one-fits-all strategy, but that optimal aggregation depends on the research question at hand.

**Tian, K., Dietzenbacher, E. and Jong-A-Pin, R.** [Measuring industrial upgrading: applying factor analysis in a global value chain framework.](#) *Economic Systems Research*, 31(4): 642-664.

A key question for promoting international competition is how to improve the position of countries and industries in global value chains (GVCs). The first step is to properly measure industrial upgrading in GVCs. This is not a trivial issue because upgrading has not been defined unambiguously. Several authors have used different (and sometimes related) measures, all of which indicate certain aspects of upgrading. Rather than trying to find the single, ultimate measure of upgrading, we propose a different approach. We examine the multidimensionality of industrial upgrading, using eight indicators in factor analysis. Four of the eight indicators adopt the GVC perspective and include, for example, the growth of the share in value-added exports. We provide three quantitative dimensions of industrial upgrading: process upgrading, product upgrading, and skill upgrading. With these dimensions, we compare and analyze the upgrading of different countries and industries using the World Input-Output Database.



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## [Economic Systems Research](#)

[Journal of the IIOA](#)

[Latest articles \(up to 27-Nov.\)](#)



**Mardones, C. and Lipski, M.** [A carbon tax on agriculture? A CGE analysis for Chile.](#) *Economic Systems Research.*

This paper evaluates the implementation of a tax on CO<sub>2</sub> equivalent (CO<sub>2</sub>eq) emissions produced by the agricultural sector. Computable general equilibrium (CGE) simulations consider tax rates ranging from \$5 to \$131 USD/ton CO<sub>2</sub>eq with sensitivity analyses. We find that a tax applied only to agricultural emissions makes agriculture less competitive and, thus, reduces its production. Real GDP falls from 0.00–0.01% to 0.12–0.40% as a result, and total emissions decline from 0.07–0.10% to 1.79–2.25%. The tax is slightly regressive. We conclude that the tax on just agriculture does not substantially reduce emissions. Indeed, we find it is more efficient to apply the tax across the board, while subsidizing the forestry.

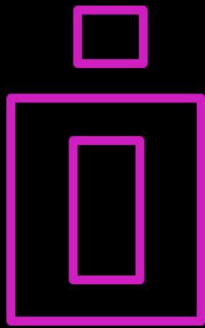
**Nakamoto, Y.** [Spatial structural decomposition analysis with a focus on product lifetime.](#) *Economic Systems Research.*

This study estimates the carbon footprint associated with global final demand for automobiles and petroleum of the U.S.A., Germany, and Japan, which accounted for 31% of the global stock of passenger cars in 2009, during 1995 to 2009. I develop a comprehensive new method to more clearly illuminate the structural change in automobiles' global final demand. Based on the results, I discuss how a circular strategy with a focus on vehicle lifetime extension contributes to the automobile carbon footprint in each country. While the environmental burden from automobile manufacturing has decreased globally, the Leontief production structure countered carbon reduction and completely canceled out the effects of technological changes to reduce emission intensities. The results showed that suppressing demand for new cars through lifetime extensions greatly reduced the carbon footprint, in a similar or even greater way than that from changes in industrial technology.

**Boer, P. and Rodrigues, J.F.D.** [Decomposition analysis: when to use which method?](#) *Economic Systems Research.*

Structural and index decomposition analyses allow identifying the main drivers of observed changes over time of energy and environmental impacts. These decomposition analyses have become very popular in recent decades and, many alternative methods to implement them have become available. Several of the most popular methods have been developed earlier in index number theory, a context in which each particular method is defined by adhering to a set of properties. The goal of the present paper is to review the main results of index number theory and discuss its connection to decomposition analyses. By doing so, we can present a decision tree that allows users to choose a decomposition method that meets desired properties. We report as hands-on example an empirical case study of the carbon footprint of the Netherlands in the period 2004–2005.





# INTERNATIONAL INPUT-OUTPUT ASSOCIATION

**Ferreira, J.P., Lahr, M., Ramos, P. and Castro, E.** [Accounting for global migrant remittances flows.](#) *Economic Systems Research.*

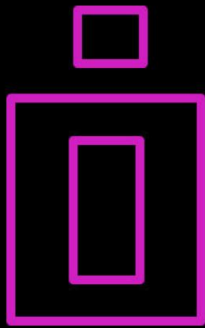
Migrant remittances are important to some countries. According to the World Bank, they comprise more than 30% of the GDP of Kyrgyzstan, Tonga, Tajikistan, Haiti and Nepal. Compared to official development aid or foreign direct investment, remittances have lately become a prime income stream for less-developed nations. In this paper, we analyze the net spillover and feedback effects from the consumer demand generated in migrants' home countries. We use World Bank estimates of remittances and the World Input-Output Database (WIOD) for the investigation with so-called 'hypothetical insertion' as the tool of choice. We find that even some developed nations, like the US, likely benefit from remittances (the largest global path for remittances is that from the US to Mexico), but that not all do (e.g. Canada does not). We stop short of making strong policy recommendations. Instead, we suggest that more attention be paid to the veracity of remittance estimates.

**Rueda-Cantuche, J. M., Amores, A. F. and Remond-Tiedrez, I.** [Can supply, use and input-output tables be converted to a different classification with aggregate information?.](#) *Economic Systems Research.*

Every change in the product and/or industry classifications and/or methodology of supply, use and input-output tables makes any medium- to long-term policy analysis impossible unless appropriate conversions are provided by national statistical institutes using more detailed data. However, can these tables be reasonably converted to a different classification of industries and products using aggregate information? We develop a conversion method that allows changes in classification that are independent of the number of industries and products. In addition, we provide evidence about its empirical performance compared with projection methods. We find projection methods perform better than conversion methods, at least when using aggregate information. Nonetheless, unlike conversion methods, projection methods generally require supply, use and input-output tables in the new classification that might not always be available. In their absence, we recommend using more detailed and sophisticated data.

**Rodrigues, J.F.D., Yuan, R. and Xiang, H.** [The expectations of and covariances between carbon footprints.](#) *Economic Systems Research.*

Carbon footprints and other environmentally extended input-output indicators are obtained as aggregations of emissions embodied in supply chains (EESCs), which express the emissions occurring in a specific production activity to satisfy a given volume of final demand. Here we derive theoretical approximations of the expectations of and covariances between EESCs, as a function of the expectations of and covariances between source data (technical coefficients, emission coefficients and final demand volumes) through a Taylor expansion. We report an empirical test of those approximations, using a sample of 5 global multi-regional input-output models in the year 2007, of which we extract 22 single-region input-output systems with 17 sectors. We find that approximations of multipliers perform better than those of EESC, and approximations of expectations perform better than those of covariances.



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**Vercalsteren, A., Christis, M., Geerken, T. and Van der Linden, A.** [Policy needs \(to be\) covered by static environmentally extended input-output analyses.](#) *Economic Systems Research.*

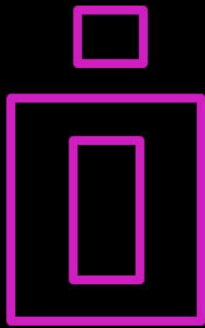
There exists little evidence in the literature of the extent to which static environmentally extended multiregion input-output (EE-MRIO) studies actually contribute to political decision-making and policy formulation. This paper provides an overview of the reported applications of EE-MRIO analysis in an environmental context, either initiated by questions from policy makers or demonstrated by researchers. The applications are structured according to their scope and scale, the coverage of the DPSIR environmental policy framework (driving forces/ pressures/ state/ impact/ response), and the type of application (problem analysis/agenda setting, ex ante and ex post/monitoring). Results from interviews with policy makers (Belgium) show both their interest in IO-modelling and specific needs they have to make it more useful in their own context. The more experimental EE-IO models serve well for the early policy phase of problem analysis and agenda setting. Also, their use can prove the importance of strengthening international collaboration to develop internationally recognized EE-IO models.

**Ito, K., Deseatnicov, I. and Fukao, K.** [Japan's participation in global value chains: splitting the IO table into production for export and domestic sale.](#) *Economic Systems Research.*

This paper examines Japan's participation in global value chains (GVCs). To this end, we use plant-level data for Japan to split output in each industry in Japan's manufacturing sector into output for export or domestic sale and create an extended multi-country input-output table (MIOT). We then compute trade in value added (TiVA) indicators to examine the participation of Japanese manufacturing plants in GVCs. Our estimates suggest that Japan's forward participation in GVCs is lower than suggested by estimates computed from a traditional MIOT. We infer that this result is due to high cross-border production fragmentation as well as the large presence of Japanese multinational companies in global manufacturing and the high volume of intra-firm trade in Japan's manufacturing sector. We conclude that considering firm heterogeneity in production for export and domestic sale in MIOTs provides a more accurate understanding of global production fragmentation.

**Ahmed, I., Socci, C. Severini, F., Pretaroli, R. and Al Mahdi, H. K.** [Unconventional monetary policy and real estate sector: a financial dynamic computable general equilibrium model for Italy.](#) *Economic Systems Research.*

This study investigates the effects of an expansionary monetary policy on the Italian economy and, in particular, on real estate (RE) as a commodity. RE is a key sector for the Italian economy. It has strong interactions with the other sectors, especially with the financial markets. Therefore, we develop a financial dynamic computable general equilibrium model to analyze the response of RE sector to a shock on money supply. The parameters of the model are calibrated on the financial social accounting matrix for Italy that identifies the economic and financial flows in the economic system in a well-defined time period. Our findings confirm that the policy has a positive impact on real economy and on the RE output, value added and pricing.



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**Manresa, A. and Sancho, F.** [A follow-up note on the plausibility of the Leontief and Ghosh closed models](#). *Economic Systems Research*.

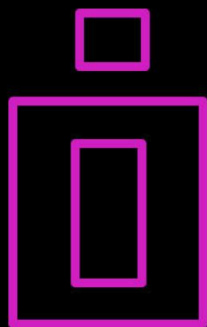
Herein we consider Leontief and Ghosh models that partly endogenize both part of final demand and part of value-added. We use Osterhaven's [(2012) Adding Supply-driven Consumption Makes the Ghosh Model Even More Implausible. *Economic Systems Research*, 24, 101-111] numerical three-sector example to show that anomalies of the sort he finds for a Ghosh closed model can also be found in the closed version of a Leontief model. By assuming, as Oosterhaven did, that aggregate exogenous resources are fixed, we obtain mirror results to his in a Ghosh setting, albeit in the more-traditional Leontief instance. Such numerical anomalies for the three-sector case turn out to be generic to both partially closed models for any  $2 \times 2$  input-output model. A proof for the general  $n \times n$  case remains to be uncovered.

**Ulrich, P. and Lehr, U.** [Economic effects of an E-mobility scenario – input structure and energy consumption](#). *Economic Systems Research*.

The development of a strong domestic market for E-mobility is given a high priority and it is counted as an impulse for the transformation towards a Green Economy in Germany. Replacing the combustion engine by alternative drives can trigger a variety of macroeconomic effects. The paper presents the results of a model-based analysis. In particular, effects on the value chain of the automotive industry and the demand for consumer goods are explicitly modelled. An E-mobility scenario that meets the six million E-vehicles by a 2030 target is compared with a reference scenario. Assuming a substitution of inputs within the automotive industry by inputs from the electrical engineering sector, negative effects in vehicle production are offset by positive effects in energy technology production. For the macroeconomic effects, the development of imports and exports is crucial. In the scenario comparison presented here, short- to medium-term employment effects are slightly positive.

**Dávila-Fernández, M.J. and Punzo, L.F.** [Financialisation as structural change: measuring the financial content of things](#). *Economic Systems Research*.

In this article, we present a multi-sectoral treatment of financialisation based on input-output analysis. Our main innovation introduces financialisation as an increase in financial content per unit of output produced. In this way, we may investigate changes in relative importance of financial activities, taking into account direct and indirect interactions among sectors. Although methods focusing on the disaggregation of input-output tables have been largely explored in past decades, they have received limited attention in the literature on financialisation. We aim to refocus on multi-sectoral issues by offering a simple structure of analysis to assess the interconnections between the real and financial sides of the economy. Using a 15 and 14-sector level of aggregation, we study the experiences of the United States and Brazil for the period 1947–2015 and 1995–2011, respectively.



# INTERNATIONAL INPUT-OUTPUT ASSOCIATION

**Manresa, A. and Sancho, F.** [A follow-up note on the plausibility of the Leontief and Ghosh closed models.](#) *Economic Systems Research.*

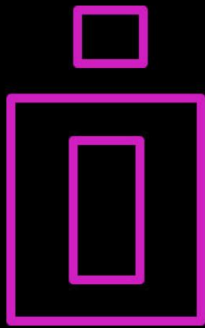
Herein we consider Leontief and Ghosh models that partly endogenize both part of final demand and part of value-added. We use Osterhaven's [(2012) Adding Supply-driven Consumption Makes the Ghosh Model Even More Implausible. *Economic Systems Research*, 24, 101–111] numerical three-sector example to show that anomalies of the sort he finds for a Ghosh closed model can also be found in the closed version of a Leontief model. By assuming, as Oosterhaven did, that aggregate exogenous resources are fixed, we obtain mirror results to his in a Ghosh setting, albeit in the more-traditional Leontief instance. Such numerical anomalies for the three-sector case turn out to be generic to both partially closed models for any  $2 \times 2$  input-output model. A proof for the general  $n \times n$  case remains to be uncovered.

**Faturay, F., Sun, Y., Dietzenbacher, E., Malik, A., Geschke, A. and Lenzen, M.** [Using virtual laboratories for disaster analysis – a case study of Taiwan.](#) *Economic Systems Research.*

Due to its geographic location, Taiwan frequently experiences severe natural disasters (for example earthquakes and typhoons) that significantly interrupt business operations and subsequently cause extensive financial losses. Prior work on economic losses resulting from such natural disasters in Taiwan has not considered regional and sectoral spillover effects. In this work, we estimate the economic impacts resulting from the 1999 Chichi earthquake, the 2009 typhoon Morakot, the 2016 Tainan earthquake, and the 2016 typhoon Megi. We do so in the new TaiwanLab, a collaborative virtual laboratory that is capable of generating a time-series of subnational multiregional input-output (MRIO) tables, capturing interregional transactions among 267 sectors across Taiwan's 22 city-counties. We identify critical economic sectors in regions of high vulnerability to natural disasters. Our research is, thus, a credible reference to decision-making that determines regional and sectoral prioritisation for damage mitigation, improved resiliency, and faster recovery schedules.

**Sommer, M. and Kratena, K.** [Consumption and production-based CO<sub>2</sub> pricing policies: macroeconomic trade-offs and carbon leakage.](#) *Economic Systems Research.*

This paper applies a DYNK (Dynamic New Keynesian) model to compare the traditional environmental tax reform for greenhouse gas (GHG) emissions with a taxation scheme that taxes GHG emissions embodied in consumption within the framework of a unilateral policy of the EU-27. The embodied emissions of different commodities are taxed independently of their origin. The GHG tax rates applied are identical and new revenues are in both cases recycled via lower social security contributions of employers. The results show the macroeconomic results, driven by the different impact of the taxation schemes on price competitiveness of EU-27 firms. These differences drive the leakage and show negative leakage in the case of taxing embodied GHG emissions. Both taxation schemes are also regressive for household incomes emphasizing the importance of the choice of revenue recycling. In terms of emission reduction, we find the taxation of emissions embodied in consumption less effective.



# Newsletter

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# INTERNATIONAL INPUT-OUTPUT ASSOCIATION



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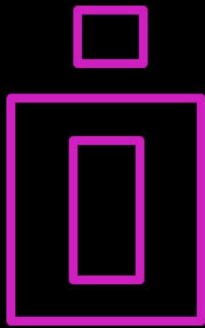
## Highlights in journals

**Rahman, M.D.A., Saari, M.Y., Lenzen, M. and Malik, A.** (2019) [Skills and ethnics wage inequalities within the global value chain: an evidence from Malaysia](#). *Policy Studies*.

This paper examines and compares wage inequality effects of trading with Transpacific Partnership Agreement (TPPA), BRICS and ASEAN economies in Malaysia. A combination of MRIO model and inequality accounting framework has been exploited to quantify skills (i.e. low, medium, high) and ethnics wage inequality. The results show that Malaysia could have significantly experienced high wage inequality at different skill categories and across ethnic groups when trade with TPPA, suggesting the mega trade deal potentially risks existing efforts for equitable distribution. In particular, Chinese ethnics, who are commonly employed in high productive sectors, benefit the most compared to Malays and Indians. In contrast, exports to the BRICS and ASEAN countries have minimal effects on wage inequality, where regional trade could be more effective in reducing inequalities.

**Tsujimura, K. and Tsujimura, M.** (2019) [Flow of funds analysis: A combination of Roman law, accounting and economics](#). *Statistical Journal of the IAOS*.

The 1920s was a decade of great inventions and of substantial productivity growth; people found it difficult to understand why the Great Depression could follow a decade of unprecedented prosperity. Wesley Mitchell and Morris Copeland, who have initiated the flow of funds analysis, urged a better understanding of the circulation of funds between the financial and nonfinancial economy. Since funds, which is the sole currency in the pure credit economy we live today, exist only in the bank's balance sheets, accounting is a necessity for the virtual currency. Furthermore, the assets and liabilities in the bankers' accounts mean claims and obligations so that law is another prerequisite for the existence of funds. The present paper is an attempt to detail the historical background of the 'flow of funds' analysis tracing back to ancient Rome to clarify the interdependence between law, accounting and economics; and to revive the original idea of Mitchell and Copeland - to understand the interactions between the financial and nonfinancial economy.



# INTERNATIONAL INPUT-OUTPUT ASSOCIATION

**Liu, X., Du, H., Zhang, Z., Crittenden, J.C., Lahr, M.L., Moreno-Cruz, J., Guan, D., Mi, J. and Zuo, J.** (2019) [Can virtual water trade save water resources?](#). *Water Research*.

At times, certain areas of China suffering from water shortages. While China's government is spurring innovation and infrastructure to help head off such problems, it may be that some water conservation could help as well. It is well-known that water is embodied in traded goods - so called "virtual water trade" (VWT). In China, it seems that many water-poor areas are perversely engaged in VWT. Further, China is engaging in the global trend of fragmentation in production, even as an interregional phenomenon. Perhaps something could be learned about conserving or reducing VWT, if we knew where and how it is practiced. Given some proximate causes, perhaps viable policies could be formulated. To this end, we employ China's multiregional input-output tables straddling two periods to trace the trade of a given region's three types of goods: local final goods, local intermediate goods, and goods that shipped to other regions and countries. We find that goods traded interregionally in China in 2012 embodied 30.4% of all water used nationwide. Nationwide, water use increased

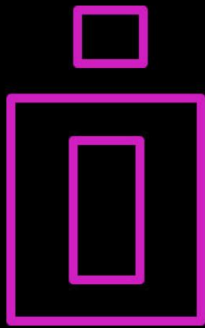
substantially over 2007-2012 due to greater shipment volumes of water-intensive products. In fact, as suspected, the rise in value chain-related trade became a major contributing factor. Coastal areas tended to be net receivers of VWT from interior provinces, although reasons differed, e.g. Shanghai received more to fulfill final demand (67.8% of net inflow) and Zhejiang for value-chain related trade (40.2% of net inflow). In sum, the variety of our findings reveals an urgent need to consider trade types and water scarcity when developing water resource allocation and conservation policies.

**Sancho, F.** (2019) [An Armington-Leontief model](#). *Journal of Economic Structures*.

We develop a novel linear equilibrium model with an Armington flavor. We provide (1) proof of the solvability of the model and of the existence and non-negativity of the equilibrium solution and of the newly derived multiplier matrix; we also show (2) that the standard Leontief multiplier matrix arises as a special case of this new model and (3) that this model allows the computation of multiplier effects with no external output bias, which is particularly relevant for applied economic analysis.

**Yang, L. and Lahr, M.L.** (2019) [The Drivers of China's Regional Carbon Emission Change—A Structural Decomposition Analysis from 1997 to 2007](#). *Sustainability*

Using three official multiregional input-output tables and carbon emission data, we decompose the change in carbon emission for eight regions of China between 1997 and 2007. We do so according to the following seven partial effects: (i) Changes in energy end-use structure, (ii) effect of energy intensity, (iii) the added value's share of gross output, (iv) changes in sub-industry structure, (v) changes in the substitution of import for intermediate inputs, and changes in (vi) structure and (vii) level of final demand. We find energy intensity contributes most to CO2 abatement throughout China, while other factors vary widely across the different regions. We suggest that governments consider regional disparity and CO2 flows when formulating policies; structural change with an eye toward energy-savings and general efficiency improvements, like better insulated buildings, are among measures we deem effective.



# INTERNATIONAL INPUT-OUTPUT ASSOCIATION

**Papadakis, S. and Markaki, M.** (2019) [An in depth economic restructuring framework by using particle swarm optimization](#). *Journal of Cleaner Production*.

The aim of this paper is the development of an integrated framework, based on environmental input-output analysis, for optimizing the economic structure of an economy. The restructuring process is approached as a constraint optimization problem where the optimized variables are the elements of the matrix of domestic technical coefficients. A method for determining the optimal level of the productive linkages of an economy in order to maximize its output with the minimal greenhouse gas emissions the possible is suggested. The proposed methodology is able to join both environmental and economic policy targets, in the form of predefined constraints. The objective function, which is going to be minimized, expresses the greenhouse gas emissions (GHG) intensity or GHG emissions per unit of output. A particle swarm algorithm is employed for the solution of the optimization problem. An illustrative application to the Greek economy was carried out. The experimental results revealed that if the Greek economy will apply policies for boosting the sectors of high and medium-high R&D intensity, then the greenhouse gas emission per unit of gross domestic product of

Greece would be reduced. Furthermore, the promotion of high and medium-high R&D intensity sectors is connected with an important improvement of the production linkages to a wide range of sectors, highlighting the important spillover effect of the suggested restructuring process.

## Others

A couple of IIOA members co-authored the paper that won the Martin Beckmann Prize 2019, awarded by the Regional Science Association International for the best article published by its flagship journal *Papers in Regional Science*.

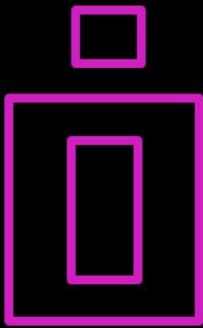
The prize was won by Wen Chen, Bart Los, Philip McCann, Raquel Ortega-Argilés, Mark Thissen and Frank van Oort for their paper "[The Continental Divide? Economic Exposure to Brexit in Regions and Countries on Both Sides of The Channel](#)"

It uses the EUREGIO-database, which consists of global input-output tables with interregional detail for European Union countries and is publicly available [here](#).

Documentation on the data can be found [here](#) - EUREGIO: The construction of a global IO DATABASE with regional detail for Europe for 2000-2010.

**Chen, W., Los, B., McCann, P., Ortega-Argilés, R., Thissen, M. and van Oort, F.** (2017) [The continental divide? Economic exposure to Brexit in regions and countries on both sides of The Channel](#). *Papers in Regional Science*.

In this paper we employ an extension of the World Input-Output Database (WIOD) with regional detail for EU countries to study the degree to which EU regions and countries are exposed to negative trade-related consequences of Brexit. We develop an index of this exposure, which incorporates all effects due to geographically fragmented production processes within the UK, the EU and beyond. Our findings demonstrate that UK regions are far more exposed than regions in other countries. Only regions in the Republic of Ireland face exposure levels similar to some UK regions, while the next most affected regions are in Germany, The Netherlands, Belgium and France. This imbalance may influence the outcomes of the negotiations between the UK and the EU.

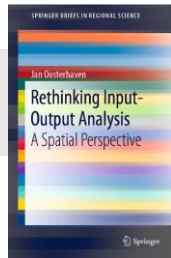


# INTERNATIONAL INPUT-OUTPUT ASSOCIATION

## Highlights in Books

### Rethinking Input-Output Analysis. A Spatial Perspective

**Jan Oosterhaven**



This book primarily aims at upper level Bachelor and Master students, but is also helpful for practitioners in research and consulting firms and agencies.

It showcases the social, economic and environmental importance of the relations between industries in the same and in different regions and countries, and learns how to model these relations by means of regional, interregional and international IO models. It also shows how to extend the basic IO models with endogenous household expenditures. Moreover, it learns the reader how to use the modern IO tables called supply-use tables (SUTs), which explicitly distinguish the products used and sold, and Social Accounting Matrices (SAMs) that additionally show the spatial and governmental redistribution of value added. Besides the standard demand-driven IO quantity model, this book also carefully lays out

the economic assumptions of its supply-driven mirror image, indicates its extremely limited usefulness, and explains that its little known, accompanying revenue-pull IO price model is almost as useful as the much better known cost-push IO price model that accompanies the standard IO quantity model.

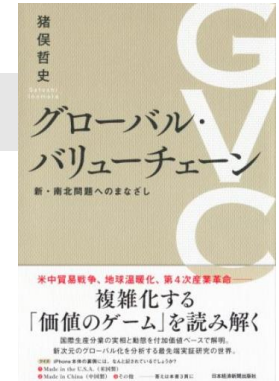
After the mainly theoretical first chapters, the final chapters critically discuss three well known applications of the IO model, namely (1) economic impact analysis of negative supply shocks caused by, for example, natural and man-made disasters, (2) regional and interregional forward and backward linkage analysis, better known as key sector analysis, and (3) structural decomposition analysis of regional, national and interregional economic growth. In all three cases, the standard IO approach is shown along with its problematic implications, such as producing misleadingly high multipliers in the first case and presenting policy makers with only half of the truth in the other two cases. Of course, the necessary additions to and changes in the standard approach are presented as well.

This book stands out with its emphasis on the behavioural foundations of the two IO quantity and the two IO price models, and the plausibility of the causal mechanisms implied by the mathematics of the base models. This leads to a

far more critical evaluation of the usefulness of IO analysis than found in standard textbooks. This book thus provides a better understanding of the foundations, the power, and the limitations of input-output analysis.

### Global Value Chain (in Japanese)

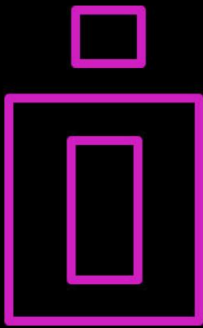
**Satoshi Inomata**



The book was awarded one of the most prestigious prizes for academic contribution in Japan.

See more information [here](#).





# INTERNATIONAL INPUT-OUTPUT ASSOCIATION

## Database



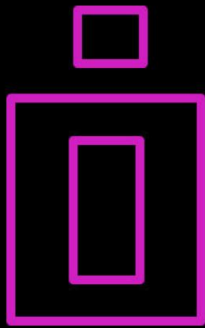
FABIO provides a set of **multi-regional physical supply-use and input-output tables** covering global agriculture and forestry. The work is based on mostly freely available data from FAOSTAT, IEA, EIA, and UN Comtrade/BACI. FABIO currently covers **191 countries** plus Rest-of-World, **121 processes** and **130 commodities** for 1986-2013.

For more details see [Bruckner et al. \(2019\)](#).

**FABIO webinar:** The GLP working group [Telecoupling Towards Sustainable Transformation](#) held its first webinar, which introduced the freely-available FABIO model, in September 2019, see [here](#).

**Bruckner et al. (2019)** [FABIO—The Construction of the Food and Agriculture Biomass Input-Output Model](#). *Environmental Science & Technology*.

Harvested biomass is linked to final consumption by networks of processes and actors that convert and distribute food and nonfood goods. Achieving a sustainable resource metabolism of the economy is an overarching challenge which manifests itself in a number of the UN Sustainable Development Goals. Modeling the physical dimensions of biomass conversion and distribution networks is essential to understanding the characteristics, drivers, and dynamics of the socio-economic biomass metabolism. In this paper, we present the Food and Agriculture Biomass Input-Output model (FABIO), a set of multi-regional supply, use and input-output tables in physical units, that document the complex flows of agricultural and food products in the global economy. The model assembles FAOSTAT statistics reporting crop production, trade, and utilization in physical units, supplemented by data on technical and metabolic conversion efficiencies, into a consistent, balanced, input-output framework. FABIO covers 191 countries and 130 agriculture, food and forestry products from 1986 to 2013. The physical supply use tables offered by FABIO provide a comprehensive, transparent, and flexible structure for organizing data representing flows of materials within metabolic networks. They allow tracing of biomass flows and embodied environmental pressures along global supply chains at an unprecedented level of product and country detail and can help to answer a range of questions regarding environment, agriculture, and trade. Here we apply FABIO to the case of cropland footprints and show the evolution of consumption-based cropland demand in China, the E.U., and the U.S.A. for plant-based and livestock-based food and nonfood products.



# INTERNATIONAL INPUT-OUTPUT ASSOCIATION

## Events

### Past conferences

#### **Input-Output Tables as a Tool for Trade and Industrial Policy in Latin America and Relations with Asia- Pacific**

**September 2019**

Between the 11<sup>th</sup> and 13<sup>th</sup> of September, the International Seminar "Input-Output Tables as a Tool for Trade and Industrial Policy in Latin America and Relations with Asia-Pacific" and the round table "Dynamics of the Intra and Inter Regional Value Chains and Integration in Latin America and Asia" were held. Both events were organized by ECLAC through its International Trade and Integration Division in collaboration with the Ministry of Foreign Affairs of Dominican Republic.

The Seminar and the round table were well attended and presented by officials,

researchers and consultants of ECLAC, ESCAP, OECD, Asian Development Bank and the European Commission (JRC), as well as representatives of several Latin American central banks, statistics government agencies and ministries.

During the Seminar, the Input-Output Tables (IOT) Project for Trade and Industrial Policy in Latin America 2011, was presented by ECLAC, which includes 18 countries in Central and South America, Mexico and Dominican Republic. The seminar's agenda included country studies and discussion panels on global value chains and their intra- and inter-regional implications for integration with Asia-Pacific.

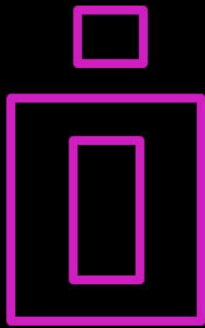
On the last day, the round table was held with presentations and discussions on intra and inters regional relations between Latin America, the Caribbean and Asia Pacific.

Other results of the project were presented in two Seminars in Korea:

- On September 18<sup>th</sup>, the Ministry of Foreign Affairs of the Republic of Korea and the Ministry of Foreign Affairs of the Argentine Republic hosted the Seminar on Trade and SMEs – entitled "FEALAC's Trade Facilitation in the context of the Digital Economy" – in Seoul. ECLAC and ESCAP presented some results seeking to find ways to improve regional connectivity among FEALAC member states and to nurture business capabilities of SMEs in a digital economy. [ [Link](#) ]



Source: ECLAC



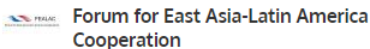
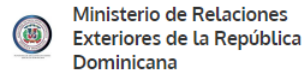
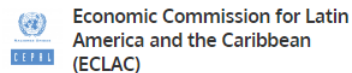
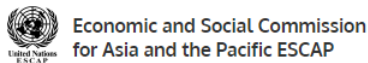
# INTERNATIONAL INPUT-OUTPUT ASSOCIATION

- On September 19<sup>th</sup> a presentation was held for a group of Latin American representatives (in Spanish GRULAC) on intra and inter-regional value chains across both regions. [ [Link](#) ]

More information and Latin American Input-Output Table and national tables [here](#).

Programme and presentations are also available [here](#).

## ORGANIZED BY



## II Seminar for New Academic Researchers 2019

October 2019

Faculty of Social Science, Cuenca (Spain) - University of Castilla-La Mancha



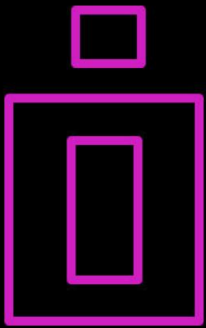
The University of Castilla-La Mancha (UCLM) in Cuenca (Spain) has recently hosted the III Seminar for New Academic Researchers (SNAR) 2019. Following the objectives and scope of the successful previous editions in the Spanish Universities of Oviedo and Extremadura, the III SNAR has gathered a group of researchers, academics and PhD students to share previous, current, and potential future research lines. The contributions have been related to diverse fields involved in Regional Science and Input-Output analysis.

The participants have benefited from the knowledge and experience of Professor Geoffrey J.D. Hewings (REAL – University of Illinois) and other senior researchers attending this event. All valuable comments and suggestions shared during the meeting have certainly contributed not only to guiding students in developing their long-term careers but also to building a network of researchers interested in regional economic development and Input-Output analysis.

Looking forward to the next edition of the SNAR, which will be held on October 2020 at the University of La Rioja (Spain).



Spanish Regional Science Association (AECR)



# INTERNATIONAL INPUT-OUTPUT ASSOCIATION

## **8th Conference on Input-Output Analysis (Hispanic-American Input-Output Society, SHAIO)**

September, 2019



8th Spanish Conference on  
Input-Output Analysis

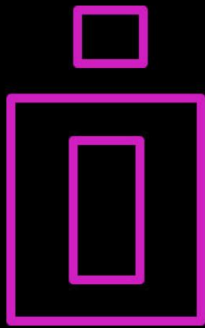
After the successful editions of the previous Hispanic-American Input-Output Society (SHAIO) conferences in Oviedo (2005), Zaragoza (2007), Albacete (2009), Madrid (2011), Seville (2013), Barcelona (2015) and Merida-Yucatan (2017), 2019 was the year for Santiago de Compostela (Galicia) to take the baton and host the 8<sup>th</sup> Spanish Conference on Input-Output Analysis of the [Hispanic-American Input-Output Society](#) (SHAIO).

From the 11<sup>th</sup> to the 13<sup>th</sup> of September, we enjoyed three intense and fruitful days, starting with the 3<sup>rd</sup> Spanish School of Input-Output Analysis and the reception of the participants with a Wine Session and a keynote speech by Maurizio Ciaschini (University of Macerata) on "Wine as a commodity: a blend of culture, communication and economics". In the second day of conference, we had the opening session with a very stimulating keynote presentation by Raquel Ortega-Argilés (University of Birmingham) on "Labour Markets, Globalisation and Automation". Before the gala dinner we introduced another surprise in the program with the fascinating IO Talk on "Accounting for Globalisation" by Nadim Ahmad (OECD). Finally, the closing session had also a keynote speech by our new honorary member, Ferran Sancho (Autonomous University of Barcelona).

This figure aims to pay tribute to those who have contributed significantly to the growth and development of the Spanish-speaking input-output community. His motivating presentation on "Input-output: ¿qué hay de nuevo, viejo?" was the last activity of the conference.



During those days we had 81 presentations divided into 21 sessions. For the first time in a SHAIO Conference we had also special sessions. They were focused on a range of very interesting and promising topics such as gender issues, income inequality, or health, among others. Additionally, the conference also hosted the 2<sup>nd</sup> Meeting on Official Statistics Offices working on Input-Output Frameworks in Spain. This helped the producers meet the users during the conferences. They also liked the opportunity for sharing their experiences among other Statistical Regional and National colleagues.



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# INTERNATIONAL INPUT-OUTPUT ASSOCIATION

The 6<sup>th</sup> Prize Emilio Fontela on Input-Output Analysis 2019 was awarded during the gala dinner to Ángela García Alaminos, Mateo Felipe Ortiz Moreno, Guadalupe Arce González y Jorge Enrique Zafrilla Rodríguez for their paper titled "The Social Footprint of the U.S. Multinationals' Foreign Affiliates". The jury also awarded a special accessit to Fahd Boundi Chraki for his paper titled "Absolute cost advantage and sectoral competitiveness: Empirical evidence from NAFTA and the European Union".

In sum, excellent meeting the one held in Santiago de Compostela, including an outdoors lunch with typical Galician food "a feira". Looking forward to the next edition of the SHAI0 Conference in 2021!

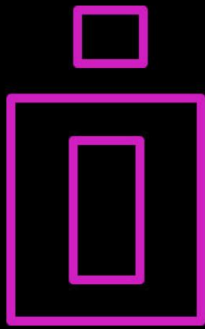


More information about the event can be found [here](#).

From the members of the organization and the rest of the SHAI0 community we would also like to express our deepest sorrow for the loss of our colleague and professor Xose Luis Quiñoá López (LOC Chair of this event) on the 26<sup>th</sup> of October. He has been an important reference for all of us in Spain. His academic and teaching contribution to the field of Input-Output will always be remembered.

**Andre Carrascal Incera** (University of Birmingham). Chair of the Scientific Committee of the 8<sup>th</sup> SHAI0 Conference on behalf of the members of the Scientific and Local Organizing Committee.





# Newsletter

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# INTERNATIONAL INPUT-OUTPUT ASSOCIATION

## Next conferences

### Industrial Ecology Laboratory (IELab) Conference 2020 February 3-5, 2020

The Industrial Ecology Laboratory (IELab) Conference 2020 will be held in conjunction with the Australian Life Cycle Assessment Society (ALCAS) Symposium 2020 on 3-5 Feb 2020 in the Blue Mountains, New South Wales, Australia.

The conference welcomes theoretical and empirical contributions and attendance from various organisations, researchers and practitioners who are involved in input-output analysis, life-cycle assessment, and hybrid LCA.



The IELab is a collaborative platform for multi-region input-output modelling and research. Organisations, researchers and practitioners collaborate in the IELab to build and modify their own customised input-output analytics in fields such as regional and environmental economic modelling, life-cycle assessment, environmental footprinting, triple bottom line and supply chain analysis. The outputs from IELab's analytical tools can be used in sustainability assessments, reports and publications.

The ALCAS is Australia's peak professional organisation for people involved in the use and development of Life Cycle Assessment (LCA), management and thinking.

#### **Important date:**

**Early bird registration deadline:** 20 December

**Regular registration deadline:** 6 January

#### **Contact person:**

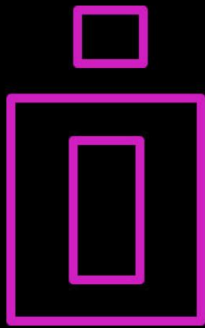
**Takako Wakiyama**

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Australian Government  
Department of Foreign Affairs and Trade





# Newsletter

Number 42, November-December 2019

# INTERNATIONAL INPUT-OUTPUT ASSOCIATION

## **Input-Output Workshop Special**

**March 19- 20, 2020**

The aim of the workshop is to bring together scientists and practitioners in the field of input-output research and to provide a platform for sharing experiences and research methods in the area of input-output analysis.

Topics to be discussed during the workshop could encompass the production of (inter)national and regional input-output tables, the development of input-output models or applications of input-output analysis to specific fields of interest.

We welcome contributions in the following exemplary research fields:

- Database creation
- Structural analysis
- Scenario analysis
- Evaluation

Further topics and proposals for special sessions are highly welcome.

Conference language is German and English.

## **Participation**

Through December 31, 2019, please send your extended abstract (1-2 pages in pdf format) to [moennig@gws-os.com](mailto:moennig@gws-os.com) .

## **Important dates**

- Submission of extended abstract until December 31, 2019
- Confirmation of participation by January 31, 2020
- Deadline for registration and workshop programme February 17, 2020

Workshop contribution: 65 € p.p.

For questions please contact Anke Mönnig:

Email: [moennig@gws-os.com](mailto:moennig@gws-os.com)

Phone: +49 (0)541 40933-210

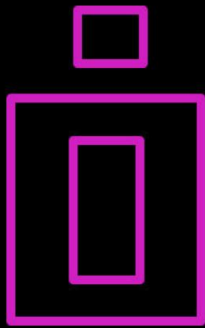
## **Organising Team**

Anke Mönnig (GWS)

Prof. Dr. Jutta Günther (University of Bremen)

Prof. Dr. Tobias Kronenberg (Bochum University of Applied Sciences)





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# INTERNATIONAL INPUT-OUTPUT ASSOCIATION

## **The 4<sup>th</sup> International Conference on Economic Structures (ICES 2020)**

March 27- 29, 2020

Organizers: Pan-Pacific Association of  
Input Output Studies(PAPAIOS)

Co-organized by Graduate School of  
Management, Kyoto University

The Pan Pacific Association of Input-Output Studies (PAPAIOS) welcomes your participation and contribution to the ICES 2020, co-organized by Graduate School of Management, Kyoto University. The session welcomes theoretical and empirical contributions that apply to a wide range of formal analytical instruments and statistical techniques to explore the structural interdependencies among various activities immanent in the economy, especially related to input-output analysis.

Further information will be announced in  
the following website:

<http://www.gakkai.ne.jp/papaios/en/conference.html>

## **The 59th Annual Meetings of SRSA**

April 2-4, 2020



The 59th Annual Meetings of SRSA will be held at the Marriott Savannah Riverfront, April 2-4, 2020. More information [here](#).

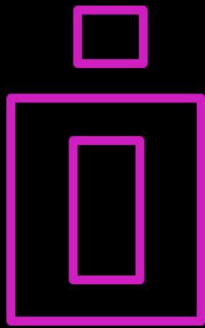
Individual abstracts are submitted through the [conference abstract submission portal](#). If you have submitted an abstract to SRSA in recent years, you can use your existing conference submission portal login credentials. If you have not recently submitted an abstract, simply create a new account and use your new account credentials to login and submit an abstract.

Deadline for submission of individual abstracts is Friday, January 17, 2020.

Questions concerning abstract submission can be submitted to  
Dayton Lambert, Program Chair ([conference@srsa.org](mailto:conference@srsa.org)).

**RSIAI**  
REGIONAL SCIENCE ASSOCIATION INTERNATIONAL





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# INTERNATIONAL INPUT-OUTPUT ASSOCIATION

**13<sup>th</sup> World Congress of the RSAI**  
June 2-5, 2020



The Regional Science Association International (RSAI) and the [Moroccan Regional Science Association](#) invite regional scientists, economists, economic geographers, urban planners, policy makers, and researchers of related disciplines to participate in the 13th World Congress of the Regional Science Association International, with the main theme "*Smart Regions – Opportunities for sustainable development in the digital era*". The Congress will be hosted by the Moroccan Regional Science Association

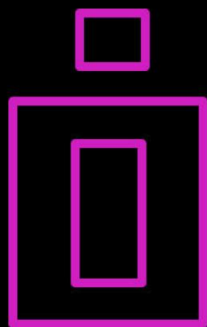
The 13<sup>th</sup> World Conference of the Regional Science Association International will be held from 2 to 5 June, 2020, at the Mogador Palace Agdal hotel in Marrakech, Morocco. It will be locally organized by the Moroccan Regional Science Association (AMSR) and its partners. On behalf of the Organizing Committee of this congress, I have the pleasure to warmly invite you to Marrakech. The organizers will be very happy to welcome you in this Ocher City, almost one thousand years old, which provides the perfect setting of a geographically varied and pristine landscape, well connected by air, suitable to accommodate you in high quality and modestly priced hotels. The historical background and geographical location at the foot of the High Atlas Mountains and at less than one hundred miles either from the Sahara dunes or from the Atlantic beaches, is a guarantee for a creative and enjoyable regional science gathering.



## Important Dates

- 02 DEC 2019 | Registration opens
- 21 JAN 2020 | Deadline abstract submission and Special Sessions proposals (NEW DATE)
- 01 FEB 2020 | Notification of acceptance of abstracts
- 02 MAR 2020 | Deadline registration at reduced fee
- 27 APR 2020 | Deadline registration for being included in the program
- 04 MAY 2020 | Draft program
- 26 MAY 2020 | Program for the Congress book
- 26 MAY 2020 | Final Program in electronic version
- 2-5 JUN 2020 | Conferences & meetings





# INTERNATIONAL INPUT-OUTPUT ASSOCIATION

## **28th IIOA Conference**

July 5-10, 2019

## **60th ERSA Congress**

August 26-29, 2020



INTERNATIONAL  
INPUT-OUTPUT ASSOCIATION

UPM UNIVERSITI PUTRA MALAYSIA  
KUALA LUMPUR

**28th International Input-Output Conference  
and  
10th Edition of the  
International School of IO Analysis**

**Kuala Lumpur, Malaysia**

**5<sup>th</sup> - 10<sup>th</sup> JULY 2020**



ersa  
60<sup>th</sup> Congress  
Bolzano  
Bozen

**Territorial futures**  
26>29|08|2020  
BOLZANO|BOZEN  
ITALY

### **Key Dates**

2019

- October 21 Call for Special Sessions
- December 9 Deadline Special Sessions Proposals
- December 11 Open submission for abstracts (and papers)

2020

- March 2 Deadline abstract (and paper) submission
- March 30 Notification of acceptance and registration opens
- May 18 Deadline registration at early bird fees
- June 15 Deadline registration for being included in the programme
- Early July Final Programme



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