Newsletter
International Input-Output Association (IIOA)
Number 9; February, 2010

Editorial

Hybrid MRIO analysis for the assessment of global environmental impacts of traded goods and services

Dear IIOA member,

International trade in goods and services is rising, driven by increased specialisation and globalisation of production and consumption. What are the environmental impacts associated with growing trade between nations? Is it possible to quantify the extent of these impacts and to create "environmental trade balances"? And what approaches are the most suited for doing this?

These were some of the questions addressed in the EIPOT project by four European research institutions on behalf of the SKEP (Scientific Knowledge for Environmental Protection) network. The aim was to bring together existing knowledge and ongoing research on the assessment of global environmental impacts of traded goods and services, to review past and current accounting methodologies and to identify, specify and describe a suitable integrated approach.

The project came to the conclusion that multiregional input-output (MRIO) analysis is a sound and relevant methodology for accounting for trade-related impacts from a consumption perspective. This basic accounting framework can be augmented, as and when required, with specific process information in a hybrid MRIO model to reduce uncertainty and to extend the range of policy and research questions from the macro and meso levels to the micro level. This is required if the environmental impact, e.g. a carbon footprint, of individual products rather than sectoral product flows is to be analysed.

Interestingly, MRIO modelling is currently experiencing a renaissance. The technique had a first round of sub-national applications in the 1960s when differences in production technologies within a country were of interest, and was only extended a decade later to the multinational case. Over the last few years numerous research groups have developed and applied multi-region input-output models covering multiple countries and world regions and have used them to estimate embodied environmental impacts of international trade or from a consumption perspective or both. This rise in environmental applications is being supported by an increasing availability of datasets that are useful for MRIO analysis. The consumption-based accounting ('footprint') perspective supported by MRIO modelling provides valuable insights and information for environmental policy, in particular global climate policy. A further development and logical extension of recent research is the integration of hybrid LCA (life cycle assessment) techniques with MRIO modelling, the possibilities of which are discussed in the EIPOT report. The strengths and benefits of hybrid MRIO are seen in the following:

- Consistency with standards of economic and environmental accounting.
- Ability to track the impacts of international supply chains, spanning multiple sectors in multiple countries.
- Allows the adoption of different accounting perspectives according to the producer, consumer or shared responsibility p principle.
- Compatible and comparable with existing global economic and trade models.
- Enables scenario simulations of the combined effects of implementing economic, social and environmental policies.
- Increased accuracy and specificity through hybridisation of bottom-up process analysis and top-down input-output analysis, combining the strengths of both approaches and minimising their respective shortcomings.

The EIPOT project report also elaborates on the role of regulatory authorities and advises on the practical implementation of future research. It will be of interest and use to the SKEP network, national ministries and agencies, national statistical offices, the European Commission (EC) and Eurostat, as well as academia.

Thomas Wiedmann,
Stockholm Environment Institute
University of York, UK

Project website: www.eipot.eu
Direct link: EIPOT Final Report
Science summary: Summary EIPOT

In this issue

New documents have been published in the **Working Papers Series in Input-Output Economics** of the IIOA at: WPIOX (see p. 9)

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Joy Murray

Teaching Input-Output

Input-Output Training and Development for Business and Industry

Over the last three years the Integrated Sustainability Analysis (ISA) team at the University of Sydney has taught over 200 people about input-output analysis in the context of learning to use the BL3 software. The software was developed by ISA and a local software company in a research project funded by a grant from the New South Wales State Government. The aim of the project Sustainability Reporting for Organisations was to take ISA's highly complex input-output analysis based Triple Bottom Line (TBL) reporting methodology and make it accessible to organisations for their own use.

In order to ensure that the resulting software met the needs of business and industry it was developed in partnership with a range of organisations through a process known as participatory action research. Participatory action research is an approach in which people work together over time to achieve a common goal. In this case the participants worked together with ISA over a two-year period to develop the user interface and functionality of the TBL accounting software.

During the two years of tool development three public workshops took place, attended by over 150 people who had input into the framework. Additional meetings were held with the action research team and software developers to provide detailed feedback on the developing tool.

Since launching the tool more than twenty workshops, attended by well over 200 software users have been held in Australia and England.

The workshops have evolved on the basis of participant feedback which constantly ensures that ISA is delivering what people want to know and in a way that is accessible and useful. The target audience is largely sustainability teams from government, business and industry and environmental consultants working with organisations that want to understand, for example, what being carbon neutral will mean for them.

Workshops are generally run over two or three days with the days one to two weeks apart. Companies are encouraged to send at least two members of staff – preferably someone from their sustainability team and someone knowledgeable in finance. This not only makes for a supportive learning team during the duration of the course but enables participants to support one another when implementing strategy upon their return to the workplace .

Centre for Integrated Sustainability Analysis

University of Sydney

In accordance with sound learning principles, the two to three workshop days are spread across a number of weeks. This is because reflection is not always possible in an intensive learning environment, so that several days may be needed to mull over workshop information until meaningful, useful questions can be formed. Spacing the workshop days also allows participants to return to their workplace and talk over their learning with colleagues. This is important if they are to take others on the journey with them, especially those for whom implementation results in changes in workplace practices.

Spacing the workshop days also lets participants collect data that enable the calculation of their organisation's footprint or to perform a TBL analysis. In this way, they can present a tangible product--either a working model of a TBL or Carbon or Ecological Footprint and a draft report--to their organisation at the end of the course. This product is a key attraction of the workshops.

Depending on the particular emphasis required by participants the workshops may cover such topics as: what does 'carbon neutral' mean and how do we know what is to be neutralized; what is a carbon/ecological footprint and how does it fit into the TBL; input output analysis – what it is and what can it help us do; how can we manage the sharing of responsibility along a supply chain? Of course, it typically also covers a number of TBL case studies.

More information about ISA's workshops can be found at http://www.isa.org.usyd.edu.au/

nature news

Klaus Hubacek

Who should bear the carbon cost of exports?

by Philip Ball

Two of the most recent new Council member **Klaus Hubacek**'s input-output (I-O) articles were the basis for a news article in NATURE. That might be an example on how I-O might be of use for a larger readership and the current climate negotiations. Follow the link: NatureNews

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Unusual to read about an "input-output model" in the newspaper.

Not any more!!

If you're interested in calculating the impact of your travel, home and shopping habits, you must have a look at the carbon footprint calculator published by *The Guardian* a few months ago.

For interested readers, the detailed methodology behind the calculator explains a few points about the data:

• The figures for UK emissions are based on a sophisticated "**input-output model**" ... They include all of the Kyoto greenhouse gases (such as methane and nitrous oxide as well as CO2) and are adjusted for imports and exports. In other words, the figures are as close as we can get to an accurate summary of the carbon footprint of all the imported goods and services that UK citizens consume.

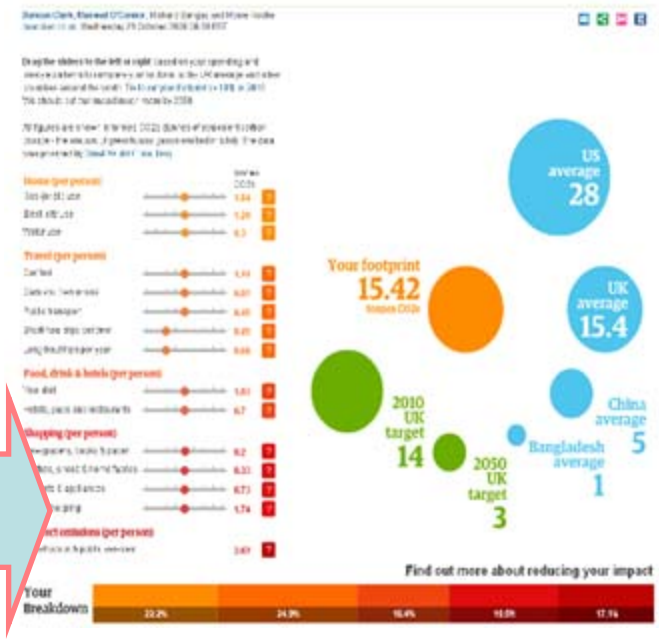
It seems to indicate that input-output (I-O) analysis is becoming part of common parlance and if the new GHG Protocol includes input-output analysis, I-O practitioners will be much in demand.

By the way, the webpage was top of the most viewed item list for that day !!

Watch *The Guardian*'s quick carbon calculator !!

Calculate the impact of your travel, home and shopping habits with our simple carbon footprint calculator.

environmentguardian.co.uk



international society for industrial ecology

A new section of ISIE membership on Environmentally Extended Input-Output has been launched in 2009 !!

The purpose of this Section is to develop environmentally extended input output analysis internationally in academia and to promote its application in policy and businesses. This includes establishing and maintaining cooperation with international organizations, companies, and government organizations. The section may collaborate with the International Input Output Association when organizing its activities. More specifically, the section may engage in the following activities:

a) discussing and developing best practices in EE IO methodology
b) providing a platform for exchange of EE IO data in a common format, or mutual support between members in data development
c) providing a platform for exchange of operational procedures and scripts
d) engaging with National Statistical Offices & similar bodies such as EUROSTAT, UN Statistical Division, FAO, and others, to improve official data and methodologies used in EE IO
e) engaging with other professional organizations in the field, most notably IIOA
f) organizing dedicated EE IO tracks during ISIE conferences, other suitable conferences, or organizing smaller workshops/events on EE IO
g) promoting applications of EE IO in political and corporate decision-making

For more information, please visit: ISIE website.

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Upcoming conferences

18th International Input-Output Conference
Sydney, Australia, 20-25 June 2010
REGISTRATION OPENS 1 FEB
REGISTER EARLY TO BENEFIT FROM EARLY-BIRD RATES at
input_outputsydney2010@theeventsauthority.com.au

The goal of the conference i promote and stimulate the worldwide exchange of ide economists between them and government offici kers, engineers, national accountants and m rests in input-output analysis and relat

This confere ercussions of the current w rowth towards sustai e that input-ou ay play in rticipate ng with ternational

onal Input-Output en very successful in nd discussion. Thus, we eners to make proposals for themes with the Chair of the mittee (SPC). Please provide the il with a description of the theme and ion(s), the organiser, the session chair(s), papers by: name of the authors, title of the of the authors and one selected topic from the es (discussants can be assigned and confirmed at a e). The abstracts and full papers should be submitted dually by the authors for evaluation (not by the organizer) ore the corresponding submission deadlines. For more information on the call for papers, visit the website of the conference: 18th International I-O Conference.

Abstracts for individual paper submissions are also welcome. In this case, please select an appropriate topic in order to allow allocation your submission to the appropriate thematic session. Please submit abstracts for papers before **December 31, 2009** through the new online abstract submission system COPASS: http://copass.iioa.org. Please, fill in the necessary data (title, abstract, names of all authors, e-mail address, etc.) and select an appropriate topic for the abstract. The length of the abstract should not exceed the maximum allowed by the system.

World Input-Output Database Conference

Abstract deadline: March 15, 2010

Industry-Level Analyses of Globalization and its Consequences, Vienna, Austria, May 26-28, 2010

WIOD's first annual consortium meeting will be held in Vienna, May 26-28, 2010. Researchers from the participating institutions will present and discuss the progress of the project. Other researchers are invited to present papers on topics related to industry-level analyses of globalization and its consequences. Contributions on data construction as well as applications (e.g. econometric analyses and modeling efforts) are very welcome. Because the number of presentations must be limited, papers will be selected on the basis of their quality and relevance to the WIOD project. Researchers interested in presenting a paper at the WIOD meeting in Vienna are invited to submit an abstract (with a maximum of 300 words) by e-mail to wiod@rug.nl before March 15. Further information on the WIOD project and the Call for Papers can be found at the WIOD website: http://www.wiod.org/

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XIX European Workshop on General Equilibrium Theory
Cracow, Poland, June 11-13, 2010

Papers in general equilibrium theory and other areas of economic theory are welcome. Examples of topics of interest include:

- Public Economics Theory
- Financial Economics
- Economics of Information
- Game Theory
- Decision Theory
- Contract Theory
- Macroeconomics
- Banking and Monetary Theory
- Mechanism Design Theory

UNIWERSYTET EKONOMICZNY W KRAKOWIE

Workshop participation by non-European researchers is also encouraged.

For more information on the call for papers visit: http://www.ewget.uek.krakow.pl/submissions.html

Abstract submission deadline
March 31, 2010

Highlights in journals

K. Mukhopadhyay & P. J: Thomassin, "Economic impact of East and South-East Asian free trade agreements", *Asia-Pacific Trade and Investment Review*, vol. 4, 2008, pp. 57-81.

The expansion of the economies of East and South-East Asia over the last 15-20 years has heralded one of the most dramatic periods of economic growth and development the world has experienced. Even without the support of formal regional trade agreements, countries in East and South-East Asia have lowered barriers to intraregional trade, increased trade both within the region and with world markets, diversified their production and trade, and increased foreign direct investment (FDI), which all contributed to growth.

The current trend in the region is towards the conclusion of free trade agreements (FTAs) and economic partnership agreements. All countries in East Asia, including China and Japan, are accelerating their move towards concluding such agreements with other countries in the region. The potential of an East Asian free trade area may be realized by 2010 and an East Asian multilateral regional trading community is expected to be established by 2020, with the aim of creating a stable, prosperous and highly competitive region with the free movement of goods and services, freer movements of capital, equitable economic development and reduced poverty and socio-economic disparities. This study addresses regional economic integration within the Association of Southeast Asian Nations (ASEAN) plus China, Japan and the Republic of Korea (ASEAN+3) and assesses its possible economic impact in 2020 using the Global Trade Analysis Project (GTAP) model.

The objective of the present study is to estimate the detailed economic impacts of trade liberalization in East and South-East Asian countries by the year 2020 under various possible scenarios. A recursive updating procedure has been used to forecast assessments based on the model for three time periods: 2000-2010, 2010-2015 and 2015-2020.

The liberalization of trade through tariff reductions influenced the share and direction of trade in the countries included in the simulated agreements. The share of important export items rose for most of the countries included in the agreements and it shifted away from the rest of the world towards the ASEAN region.

On the whole, the analysis of this result clearly shows that an ASEAN+3 agreement would be more beneficial than agreements for other regional clusters in terms of output growth and trade and, thus, in terms of the welfare of all of the participating countries in the year 2020.

H. Kuwamori & N. Okamoto, "Industrial Networks between China and the Countries of the Asia-Pacific Region", *Journal of Econometric Studies of Northeast Asia*, vol. 6 issue 2, 2009, pp. 49-78.

The paper investigates the changes in the structures of industrial networks that have occurred in the Asia -Pacific region in line with the rapid growth of the Chinese economy. Analyses using international input-output tables revealed that during the 1990s, there was a significant increase in the dependence of Asian countries' manufacturing industries, such as textiles and electronics, on China's industries, although as the main suppliers of industries in Asian countries, industries in Japan and the United States remain important.

M. Ciaschini, R. Pretaroli & C. Socci, "Multisectoral structures and policy design", *International Journal of Control*, 83(2), 2010, pp. 281-296.

In this article, an attempt is made to identify a convenient structure of a policy variable, the final demand vector, through the use of a multi-sectoral model. The method used relies on a specific spectral decomposition that allows for the quantification of the scale-effect of each structure that the policy variable can assume on the structures of the objective variable, the total output vector. This quantification is of aggregate type, since each scalar obtained is valid for all the sectoral components of both the policy variable and the objective variable. But, more relevant, they are consistent with the multi-sectoral feature of the model, overcoming the objections put forward by the theory of aggregation. In fact, the aggregation theory states that if we aggregate sectors, we

obtain a new model with different structural properties, while, in our case, the aggregate scalars that we obtain for each structure are perfectly consistent with the original model. We call these scalars macroeconomic multipliers since they say how many times the modulus of the multi-sectoral policy variable is multiplied to obtain the modulus of the multi-sectoral objective variable. Once the structures and the associated macro multipliers are identified, the policy maker can have a complete picture of the economic structure of the objective variable that can be attained and determine a convenient structure of the policy variable choosing either one structure or a combination of the structures identified.

M. Lenzen, "Understanding virtual water flows: A multiregion input-output case study of Victoria", *Water Resources Research*, 45, W09416.

This article explains and interprets virtual water flows from the well-established perspective of input-output analysis. Using a case study of the Australian state of Victoria, it demonstrates that input-output analysis can enumerate virtual water flows without systematic and unknown truncation errors, an issue which has been largely absent from the virtual water literature. Whereas a simplified flow analysis from a producer perspective would portray Victoria as a net virtual water importer, enumerating the water embodiments across the full supply chain using input-output analysis shows Victoria as a significant net virtual water exporter. This study has succeeded in informing government policy in Australia, which is an encouraging sign that input-output analysis will be able to contribute much value to other national and international applications.

S. Prakash & B. Balakrishnan, "Input output modelling of labour productivity and its human capital and technology components in indian economy", *Bulletin of Political Economy*, 2(2), 2008, pp. 137-164.

The study evaluates criticism of New Economic Policy that it has led to employment-less growth and examines the role of productivity in growth and employment creation by means of the Computable General Equilibrium Input Output Model. The study evaluates criticism of New Economic Policy that it has led to employment-less growth and examines the role of productivity in growth and employment creation by means of the Computable General Equilibrium Input Output Model. It covers data of one-decade after the adoption of reforms policy. Empirical results synthesize productivity and employment effects of growth. The sectoral productivity is estimated from I-O Tables of 1988-89, 1993-94 and 1998-99 in 1993-94 producer prices. The paper combines production function and aggregation approaches as its methodological-theoretical framework. The partial approach impounds technology and final demand turn by turn. The model results are supplemented by statistical analysis of inter sectoral variation and inter-relations between educational development and qualifications of workforce. Results show productivity to be the pivot of growth of most sectors. The study highlights realism/unrealism of the paradigms of employment-less, employment-neutral and employment augmenting growth under NEP.

S. Sharma, "Indian Contribution to Leontief's Input-Output Economics", *Bulletin of Political Economy*, 2(1), 2008, pp. 43-66.

The study attempts a succinct review of Indian contribution to Leontief's input-output economics. The review has been organized along the thematic lines, since review of individual contributions would have made it difficult to take a holistic view. The review highlights the enormity of Indian contribution to theory, methodology and empirical applications of input-output models to practically every branch of economic analysis. It may safely be concluded that Indian contribution to this area of economics is comparable to the American and Dutch contribution.

A. Opocher & I. Steedman, "Input price-input quantity relations and the numéraire", *Cambridge Journal of Economics*, 33(5), 2009, pp. 937-948.

The fact that a competitive agent faces 'given' input prices does not necessarily mean that these prices can be completely arbitrary, especially in the long run. An obvious case, but not the only one, is when there are input-output relations among industries. But as soon as long-run input price interrelatedness is taken seriously, the very conception of a downward sloping input demand curve encounters serious difficulties. Although one can always draw an input price-input quantity relation, its main qualitative property - the sign of its slope - is not generally independent of the arbitrary choice of numéraire.

F. Treyz & B. Leung, "The economic impact of 9/11 on the New York City region", *Peace Economics, Peace Science and Public Policy*, 15(2), 2009, article 8 (electronic journal).

Regional Economic Models Inc. (REMI) has developed this comprehensive study evaluating the economic impact of 9/11 on the air industry and the overall economy of New York City and the surrounding region. Using data inputs collected from a variety of sources and REMI's own Policy Insight model for the primary analysis, REMI is able to recreate economic interactions on a regional basis and simulate the economic impact of the events of 9/11. The report will quantify the economic impacts using various economic indicators, including employment, gross regional product, output, real disposable personal income, labor productivity, and population. These impacts are analyzed for New York City (separating Manhattan itself as one region and combining the four other boroughs of the city as another region) and nine other regions of the New York City Consolidated Metropolitan Area.

The impacts are also shown for the rest of the USA and combined to show the results for the entire New York City Consolidated Metropolitan Area and the USA as a whole. REMI utilized their Policy Insight software to conduct this comprehensive analysis. REMI Policy Insight is a structural forecasting and policy analysis model. It integrates input-output, computable general equilibrium, econometric and economic geography methodologies. The model is dynamic, with forecasts and simulations generated on an annual basis and behavioural responses to wage, price, and other economic factors. The overall structure of the REMI model can be summarized in five major blocks: output and demand, labour and capital demand, population and labour force, wages, price, and cost, and market shares.

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In the next ESR issue

Economic Systems Research – Journal of the IIOA

Volume 22 ***Number 1*** ***March 2010***

M. Lenzen & B. Los *Editorial*

As authors of recent submissions to Economic Systems Research have noticed, the start of 2010 has been marked by an important change. Our publisher Taylor & Francis has arranged an electronic submission system for our journal. After a test phase during which ESR's Editorial Office Manager Jodie Gonzalez Jennings as well as the Editors were able to shape the features of the Manuscript Central system for the purposes of our journal, the online submission site became live and operational in mid-January. Authors have since been submitting through this system, which is available at http://mc.manuscriptcentral.com/cesr.

We envisage that the electronic submission system will improve the handling of manuscripts. During the past year, one of us (Bart) experienced circumstances that led to delays in the publication of issues 3 and 4, for which he would like to make sincere apologies. These circumstances were definitely beyond the control of the Editorial Office in Sydney. These problems have been solved now. We also strive to shorten the period between receipt of the initial submission and the final decision. We hope to achieve this despite the increasing number of requests to review that many of our expert referees receive (from us and from editors of other journals), which naturally leads to more invitations to review being declined. The members of our Editorial Board have agreed to be involved more intensively in the refereeing process if needed, for which we thank them wholeheartedly.

The Editorial Board has also undergone some compositional changes. With sadness, we learned that Iwao Ozaki passed away last year. We thank Masahiro Kuroda for a very long service on the Editorial Board. We are very happy that we could welcome four new members: Kurt Kratena, Yasuhide Okuyama, Ferran Sancho and Cuihong Yang. We are confident that they will contribute substantially to the quality of the articles appearing in Economic Systems Research.

M.J. Orsi & J. R. Santos. *Probabilistic modeling of workforce-based disruptions and input-output analysis of interdependent ripple effects*

(Note: This paper won the Leontief Memorial Prize 2009 at the 17th International Input-Output Conference in Sao Paulo)

This paper extends the formulation of the input-output model to account for events that cause time-varying and probabilistic workforce disruptions. An example of such an event is a pandemic, because the rates with which it affects the working population vary from period to period and are coupled with uncertainties. To address such complexities, the paper develops two extensions: (i) a method of translating unavailable workforce into a measure of sector productivity disruption, and (ii) a simulation framework to account for the possible variations in economic output losses. These extensions are implemented via a MATLAB program to simulate a pandemic scenario in the Commonwealth of Virginia.

T. Wiedmann, R. Wood, J. Minx, M. Lenzen, D. Guan & R. Harris *A carbon footprint time series of the UK - results from a multi-region input-output model*

The framework and results of an international multi-region input-output (MRIO) model for the UK are presented. A time series of balanced input-output tables for the UK was constructed for the period 1992 to 2004 by using a matrix balancing procedure that is able to handle conflicting external data and inconsistent constraints. Detailed sectoral and country-specific trade data for the UK were compiled and reconciled with the UK input-output data, and economic and environmental accounts for three world regions were integrated in a UK-specific MRIO model. This was subsequently used to calculate a time series of national carbon footprints for the UK from 1992 to 2004. Greenhouse gas emissions embedded in UK trade are distinguished by destination of imports to intermediate and final demand. Most greenhouse gases show a significant increase over time in consumer emissions and a widening gap between producer and consumer emissions. CO_2 emissions embedded in UK imports increased from 4.3% of producer emissions in 1992 to a maximum of 20% in 2002. The total estimated UK carbon footprint in 2004 was 730 Mt for CO_2 and 934 Mt CO_2 equivalents for all greenhouse gases.

M. Lenzen, R. Wood & T. Wiedmann. *Uncertainty analysis for multi-region input-output models – a case study of the UK's carbon footprint*

This paper reviews and demonstrates methods available for estimating standard deviations for carbon multipliers in a multi-regional input-output (MRIO) framework. We attempt to capture all possible variations of underlying data and calculation procedures in a global MRIO model constructed with particular focus on the UK. We consider these variations to be random, and determine the stochastic variation of the whole MRIO system using Monte-Carlo techniques. 5000 simulation runs were carried out to determine the standard deviations of multipliers. From these, the standard deviations of components of the UK's carbon footprint were estimated using error propagation. We estimate an 89% probability that the UK's carbon footprint has increased between 1994 and 2004.

M.V.L. Bittencourt, D.W. Larson and D.L. Kraybill. *Regional short-run effects of trade liberalization in Brazil*

This study uses a single country multi-regional computable general equilibrium model to evaluate regional short-run impacts of reduction in import tariffs resulting from recent free trade area agreements, on poverty and distribution of income in Brazil. Results show that trade can reduce inter-regional income inequality, but poor urban households lose with trade liberalization. Trade policy alone is not sufficient for achieving more equitable income distribution goals in Brazil. Without greater investment in human and physical capital, incomes in most regions of Brazil are likely to lag behind incomes in the South/Southeast, the most developed regions in the country.

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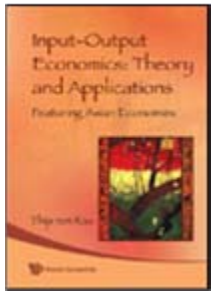
C.K. Seung & E.C. Waters. *Evaluating supply-side and demand-side shocks for fisheries: a computable general equilibrium (CGE) model for Alaska*

This study uses computable general equilibrium (CGE) models to investigate economic effects of three exogenous shocks to Alaska fisheries: (1) reduction in pollock allowable catch (TAC), (2) increase in fuel price, and (3) reduction in demand for seafood. Two different model versions, "Keynesian" and "neoclassical", were used to estimate impacts on endogenous output, employment, value added, and household income. We also estimated change in household welfare, thereby overcoming a limitation of traditional fixed-price models. There are currently few examples of CGE studies addressing fisheries issues appearing in the literature. This study is unique in that it uses a relatively disaggregated sector scheme and examines both supply-side and demand-side shocks.

Highlights in books

INPUT-OUTPUT ECONOMICS: THEORY AND APPLICATIONS. Featuring Asian Economies, Thijs ten Raa, World Scientific Books, Singapore, 2010.



Thijs ten Raa, author of the acclaimed text The Economics of Input–Output Analysis, now takes the reader to the forefront of the field. This volume collects and unifies his and his co-authors' research papers on national accounting, Input–Output coefficients, economic theory, dynamic models, stochastic analysis, and performance analysis. The research is driven by the task to analyze national economies.

The final part of the book scrutinizes the emerging Asian economies in the light of international competition. For more information visit: Thijs ten Raa's book website

ECONOMIC AND ENVIRONMENTAL IMPACT OF FREE TRADE IN EAST AND SOUTH EAST ASIA. Kakaly Mukhopadhyay and Paul J. Thomassin, Springer, Berlin, Germany, 2010.

In recent years, the East and South East Asian region has witnessed a rapid expansion of regional economic cooperation through bilateral and multilateral free trade agreements. The current book attempts to comprehensively analyze the economic and environmental impacts of regional economic integration in East and South East Asia to the year 2020. This region has some of the fastest growing economies of the world.

A global economic model was used to undertake the analysis. A rare feature of the book is the detailed environmental implications of the Regional Trade Agreements focusing on air, water, and waste pollution.

Economic integration among the East and South East Asian region has been an important agenda item for the academic and policy communities in recent years.

The study provides insight into pursuing a concrete multilateral trade liberalization policy (combining ASEAN and other countries in East Asia) and throws more light on the on-going trade and environment debate.

This book will be a good addition to the field of trade and the environment. The academic community – primarily researchers and policy makers, and world bodies, such as the WTO, ADB and the World Bank, will benefit from the book.

More info at: Mukhopadhyay and Thomassin (2010)

"Input-Output Analysis explained" a new book to be launched at the next 18th IIOA Conference in Sydney (June, 2010)

Academics and sustainability I-O practitioners from around the world are contributing to a new book aimed at the non-expert audience. Their task is to develop a plain-language layman's guide to input-output analysis for sustainability decision making. The idea has grown out of participation in the development of the new GHG Protocol.

In 2008 the World Resources Institute (WRI) and the World Business Council of Sustainable Development (WBCSD) embarked on a consultative process to develop new guidelines for product life-cycle and corporate scope 3 value-chain accounting and reporting. Consultation and development has involved more than 300 stakeholders including business and NGO representatives, policymakers and academics. Academic representatives include input-output experts who support the use of input-output analysis as one of a suite of tools that should be offered to assist in accounting for scope 3 and/or product GHG emissions. Central to discussions between technical working group (TWG) members from academia and from business have been questions such as 'what constitutes a full list of scope 3 activities'; and how to determine 'which items from such a list are significant'. As readers of this Newsletter know, input-output analysis can elegantly address these central concerns.

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Members of the Integrated Sustainability Analysis team (University of Sydney, Australia & Stockholm Environment Institute, UK) who support the use of input-output analysis are represented on three of the TWGs. Colleagues from other academic institutions around the world are also represented on TWGs. Through our participation it has become apparent that those outside of academic circles are not sufficiently familiar with input-output analysis to recognise its potential to address the issues raised by representatives of business and industry.

To some extent this is likely to be because very few publications exist that address this topic in plain language. To help redress the lack of materials and to assist the WRI/WBCSD GHG Protocol development process TWG members from Australia, UK and USA have developed and circulated plain language texts explaining the methodology and its application. The idea for the book has grown out of this process.

The text will cover:
- Introduction to input-output analysis: what it is; where it came from; what it does and does not do
- Case studies of use at a macro/industry sector level
- Case studies of use at company level
- Case studies of use at a population level (national, state/council, community; household)
- IOA tools such as: ISA, EIO-LCA, CEDA, REAP, SimaPro
- Global trade – environmentally extended multi-region input-output (EE-MRIO) model
- Teaching resources

It is likely that the new GHG protocol will recommend use of input-output analysis along with process life cycle assessment as an analytical reporting tool for business and industry. Thus the target audiences for the book are people working in business and industry; in classrooms focused on sustainability; and participants in professional development and retraining for the green economy.

Contributors are input-output experts – practitioners and academics – from UK, USA, Europe, New Zealand, Japan and Australia. The book is co-edited by Joy Murray, from the Integrated Sustainability Analysis (ISA) group, School of Physics, University of Sydney and Richard Wood from the Industrial Ecology Program at the Norwegian University of Science and Technology (NTNU). The book will be published by Common-Ground, The University Press, at the University of Illinois.

Joy Murray
Centre for Integrated Sustainability Analysis
University of Sydney, Australia

Note by the editor:
The editor wants to acknowledge Joy Murray for her highly appreciated various contributions to this issue, including that of the carbon footprint calculator

Input-Output Database

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT
OECD

New OECD Input-Output Database

The latest OECD Input-Output Database covering 29 OECD countries and 13 non-major, non-member countries is currently available for years around the mid-2000s. The most recent database can be accessed via OECD's data dissemination service OECD.STAT and as a suite of Excel files.

To receive the MS Excel files, for free, please write to: sti.contact@oecd.org , mentioning **Input Output** in the title of your message or visit: www.oecd.org/sti/inputoutput

Short news:

Our IIOA Fellow, Prof. **Karen R. Polenske** has been given the Peter de Florez professorship at the Massachusetts Institute of Technology for her significant contributions to research and teaching.

New Publications of the WPIOX Series in 2009

WPIOX09-013 Gulay Gunluk-Senesen and Umit Senesen
Decomposition of Labor Demand by Employer Sectors and Gender for Turkey: Findings for Major Exporting Sectors: Abstract | PDF

WPIOX09-012 Cristela Goce-Dakila and Francisco G. Dakila Jr.
Vulnerability of a Developing Economy to Reduction in Overseas Remittances: A CGE Approach: Abstract | PDF

WPIOX09-011 José M. Rueda-Cantuche and Thijs ten Raa
Testing the Assumptions Made in the Construction of Input-Output Tables: Abstract | PDF

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