



DEPARTMENT OF ECONOMICS
FACULTY OF ECONOMICS
AND BUSINESS



The 2nd International Conference
on Indonesian Economy & Development

certificate

This certificate is awarded to

ARMAN

as

PRESENTER

**in The 2nd International Conference on Indonesian
Economy and Development**

August 14-15, 2017
DoubleTree Hotel by Hilton, Jakarta



Prof. Ari Kuncoro, Ph.D.
Dean of Faculty of Economics and Business
Universitas Indonesia

Dear Arman Arman,

Thank you for submitting your abstract entitled "Strengthening the Role of Maritime Economy in a Sustainable Manner (Case Study in East Java, Indonesia)" to International Conference on Indonesian Economy and Development (ICIED).

Congratulation! The Scientific Committee has decided that your abstract is suitable to be presented at the conference on August 14-15, 2017 in Jakarta, Indonesia.

Please submit your full paper to our conference management system (conference.ui.ac.id/icied) by July 9, 2017. You can follow the status of your paper through the system. In order to meet the writing standard, please check author guideline at icied.ui.ac.id/submission.

In addition, we require you to decide the option for publication outlet. It does not necessarily guarantee that your submission will be published; however, we need to arrange the documents based on author preference. Please find and fill the attached form.

Aside from main conference, we also have pre-conference workshop which you can participate. Please find the complete information at icied.ui.ac.id/programme/#agenda

If you need an official invitation/visa recommendation letter or have any questions, please do not hesitate to contact us on icied@ui.ac.id. Thank you.

We look forward to meeting you at The 2nd ICIED!

Kiki Verico
Track Director of The 2nd ICIED
Universitas Indonesia

The 2nd International Conference on Indonesian Economy and Development

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icied@ui.ac.id



DEPARTMENT OF ECONOMICS
FACULTY OF ECONOMICS
AND BUSINESS

PROGRAM GUIDE



ICI^{ED}

The 2nd International Conference
on Indonesian Economy & Development
Economic Research and Policy in the Changing World

August 14-15, 2017
DoubleTree Hotel by Hilton
Jakarta, Indonesia

| DATE | MONDAY, 14 AUGUST 2017 |
|----------------------------|---|
| 08.00 - 08.30 | Registration |
| 08.30 - 08.45 | Opening Ceremony |
| 08.45 - 09.00 | Welcoming Speech by the Dean of FEB UI - Prof. Ari Kuncoro |
| 09.00 - 09.45 | Keynote Speech by an International Scholar - Prof. Rema Hanna |
| 09.45 - 10.15 | Keynote Speech by Ministry of National Development Planning - Prof Bambang P.S. Brodjonegoro |
| 10.15 - 12.15 | Plenary / Policy Dialogue Session 1 "The Challenges of Globalization and the Role of Regionalism: ASEAN's Open-Regionalism Advantages" |
| 12.15 - 13.15 | Lunch Break |
| 13.15 - 15.15 CIKINI | Parallel Sessions 1 : Monday, 14 August 2017 PAR 1 - A1: Demographic Transition and Labor Market I |
| | <p>Active Ageing: The influence of Social Engagement on Cognitive Function in the Elderly in Indonesia Sri Wastuti AR, Sri Moertiningsih Adioetomo; uci2thys@gmail.com University of Indonesia</p> <p>Siblings' Composition Effects on Intellectual Performance of Children in Indonesia Gisty Ajeng Septami, I Dewa Gede Karma Wisana; agiseptami@gmail.com University of Indonesia</p> <p>Suburbanization and Crime in Indonesia Metropolitan Areas Davy Hendri¹, Dorodjatun Kuntjoro-Jakti², Adrianus Meliala³; davyhendri74@gmail.com ¹UIN Imam Bonjol, ²University of Indonesia, ³University of Indonesia</p> <p>The Effect of Children on Unemployment Duration for Married Women in Indonesia Dewi Rochani; dewirochani01@gmail.com University of Indonesia</p> |
| 13.15 - 15.15 MENTENG | Parallel Sessions 1 : Monday, 14 August 2017 PAR 1 - B1: Infrastructure and Renewable Energy Financing |
| | <p>Effective Policy Support for Geothermal Development: Case Study Resource-Rich Developing Countries Bagus Mudiantoro; bagus.mudiantoro@ed.ac.uk University of Edinburgh Business School</p> <p>How Costly Indonesia's Earthquake Disaster? : An Evidence of Housing Price Data Iqbal Makbul Taher; iqbal.taherr@gmail.com Universitas Indonesia</p> <p>Multi Criteria Decision Making in The Selection of Renewable Energy Power Plants in Indonesia Zainul Makmur Pulungan; zainul.pulungan@sbm-itb.ac.id Bandung Institute of Technology</p> <p>Solar and Biomass Gasification: A Solution to Boost Shrimp Farming Business Dwiputra Ahmad Ramdani, Maesha Gusti Rianta; dwiputra.ramdani@gmail.com Ministry of National Development Planning / Bappenas</p> <p>The Impact of Road Development in Rural Papua New Guinea</p> |
| 13.15 - 15.15 THAMRIN 1 | Parallel Sessions 1 : Monday, 14 August 2017 PAR 1 - C1: Policy Design and Evaluation I |
| | <p>Allocation of Mineral License and Environmental Impact in Decentralization Context in Indonesia Ambarsari Dwi Cahyani, Vid Adrison; ambarsari.dc@gmail.com University of Indonesia</p> <p>Evaluating The Impact of Conditional Cash Transfer (CTT) Programs on Fertility: The Case of The Program Keluarga Harapan (PKH) in Indonesia Zefri Bastanta; bastanta.zg@gmail.com University of Indonesia</p> <p>Impact of Permendag No.21/M-DAG/PER/10/2005 Against Structure, Conduct, and Performance of Motorcycle Industry in Indonesia Aleknaek Martua Nababan, Ashintya Damayati; aleknaeknababan@gmail.com University of Indonesia</p> <p>Pigouvian Tax Function Analysis of Vehicle-Related Taxes in Indonesia Lourentius Dimas Setyonugroho, Riatu Mariatul Qibthiyah; lourentiusdimas@gmail.com Universitas Indonesia</p> |

| | |
|----------------------------|---|
| 13.15 - 15.15 THAMRIN 2 | Parallel Sessions 1 : Monday, 14 August 2017 PAR 1 - D1: Poverty, Inequality, Mobility and Disparity I |
| | <p>Analyzing Island Province Policy on Poverty Alleviation in Maluku Province : The Regional Spatial Econometric Modelling for Maluku Yayan Satyakti; yayan@unpad.ac.id Universitas Padjajaran</p> <p>Does Poverty Affecting Child to be Neglected in Indonesia ? Deny Armelia, Chotib Hasan; armel211184@gmail.com University of Indonesia</p> <p>Electricity Consumption of Low-Income Household in Indonesia Chaikal Nuryakin, Khairunur Rofik, Riyanto Umar, Pyan Amin Muchtar; chaikall@yahoo.com Universitas Indonesia</p> <p>Financial Reform and Wage Skill Premium: Firm Level Evidence from Indonesia Zenathan Adnin Hasannudin; zenathan@outlook.co.id Université Paris 1, Panthéon-Sorbonne</p> |

| | |
|-----------------------------|--|
| 13.15 - 15.15 DIPONEGORO | Parallel Sessions 1 : Monday, 14 August 2017 PAR 1 - E1: Islamic Economics, Zakat and Waqf I |
| | <p>Applying Islamic Economics in order to Improve Prosperity in Indonesia Fauziah Zen¹, Irfan Setiadi²; zenfauziah@gmail.com ¹National Statistical Institute, ²Open University Bogor</p> <p>Assesing the Role of Mosques in Enhancing the Islamic Economic Practices Mochammad Arif Budiman, Manik Mutiara Sadewa; mab.iium@gmail.com Politeknik Negeri Banjarmasin</p> <p>BMT Empowerment Through Revolving Fund Pakerns on SMEs Kusuma Chandra Kirana; chandrakna@gmail.com UST Yogyakarta</p> <p>Zakat as a Taxable Income Deduction: Perspective of Tax Officers and tax Consultants Indriati Sit i Pratiwi, Dodik Siswantoro; indriati.s.pratiwi@gmail.com Universitas Indonesia</p> <p>Determinant of Sukuk Rating in Indonesia Nabila Ismail, Tika Arundina; nabilaismail.4@gmail.com University of Indonesia</p> |

15.15 - 15.30
Coffee Break

| | |
|-------------------------|--|
| 15:30 – 17.30 CIKINI | Parallel Sessions 2 : Monday, 14 August 2017 PAR 2 - A2: Energy Security and Policy & Sustainable Fisheries and Food Security |
| | <p>GHG Emissions, Energy Consumptions, and Production Activity: Now and Future Dwiputra Ahmad Ramdani, Gisty Ajeng Septami; dwiputra.ramdani@gmail.com Ministry of National Development Planning / Bappenas</p> <p>Premium or Pertamina: Empirical Study for Substitution Effect on Indonesia's Gasoline Consumption Nur Laila Widayastuti, Djoni Hartono; nurlaila.w@gmail.com University of Indonesia</p> <p>The Analysis of Decomposition of Energy-Related Carbon Dioxide Emission and Its Decoupling with Manufacturing Industry in Indonesia Zaekhan Zahri; zaekhan@yahoo.com Universitas Indonesia</p> <p>Local and (un)Common Futures of the Artisan Tuna Fishing Economies: A Study on the Marketing Value Chain Governance Structures Dias Satria¹, Elvia R. Shauki²; dias.satria@gmail.com ¹Universitas Brawijaya, ²Universitas Indonesia</p> |

| | |
|--------------------------|--|
| 15:30 – 17.30 MENTENG | Parallel Sessions 2 : Monday, 14 August 2017 PAR 2 - B2: Trade, Investment and Economic Integration I |
| | <p>Analysis of Indonesia Man Apparel Export Performance to Seven Countries in Europe Union Sri Mulatsih; mulatsupardi@gmail.com</p> <p>Chinese FDI and Chinese Firms in Indonesia Pierre van der Eng; pierre.vandereng@anu.edu.au Australian National University and Peking University</p> <p>Development of Islamic Socially Responsible Investment (SRI) Index in Indonesia Stock Exchange Wiku Suryomurti; wiku.suryomurti@gmail.com STEI Tazkia</p> |

Indonesia's Short-Term Capital Inflows in 2005 - 2015 Period: A Blessing or A Curse?

Mohammad Alvin Prabowosunu, Kiki Verico; alvin.prabowosunu@gmail.com

University of Indonesia

15:30 – 17.30
THAMRIN 1

Parallel Sessions 2 : Monday, 14 August 2017

PAR 2 - C2: Demographic Transition and Labor Market II

Children Education Akainment: The Effect of Working Mother during Childhood Golden Age Period

Andie Sadhuputri, Arrie Damayanti; putri_7002@yahoo.com

Universitas Indonesia

Grandparenting and Mother Decision to Work

Umar Riyadi, Omas Bulan Samosir; oem1212@gmail.com

Universitas Indonesia

Impact of Immigrants to GDP in Malaysia: Manufacturing, Construction, Services and Agriculture

Heizlyn Amyneina Hamzah; heizlynamyneina@gmail.com

Universiti Putra Malaysia

The Effect of Internet Access on Contraceptive Use in Indonesia (Intercensal Population Survey Data Analysis of 2015)

Ihsan Nulhakim, Omas Bulan Samosir; ihsan.nulhakim@gmail.com

Universitas Indonesia

15:30 – 17.30
THAMRIN 2

Parallel Sessions 2 : Monday, 14 August 2017

PAR 2 - D2: Policy Design and Evaluation II

Principle-Agent Problems of Government MSME Financing Program in Indonesia

Eugenia Mardanugraha, Benedict Yappy; eugenia.marda@gmail.com

Universitas Indonesia

Reassessment the Criminal Justice System Deterrence Effect

Davy Hendri¹, Dorodjatun Kuntjoro-Jakti², Adrianus Meliala³; davyhendri74@gmail.com

¹UIN Imam Bonjol, ²University of Indonesia, ³University of Indonesia

The Analysis of Indonesian Cocoa Beans Export Tax: Impact on Indonesian and Malaysian Cocoa Processing Export Performance

Hendy Yudyanto; hyudyanto@yahoo.com

Universitas Indonesia

The Impact of Population Distribution and Economic Activity Towards land Value in Capital City of Jakarta

Mayrina Damayanti; mayrina_d@live.com

University of Indonesia

15:30 – 17.30
DIPONEGORO

Parallel Sessions 2 : Monday, 14 August 2017

PAR 2 - E2: Others I

Analysis of Maqashid Al-Shariah as the Basic of Decision Making of Muslim Consumer Behavior in Selecting Islamic Property

Atiqi Chollisni Nasution; atiqi.c@gmail.com

Sekolah Tinggi Ekonomi Syariah, Banten

Analysis on North Sulawesi's Local Tax Potential to Strengthening its Fiscal Capacity

Sherly Marlina Ering; msherly@gmail.com

Noth Minahasa Government

Competition and Innovation in Indonesia: Empirical Evidence from Manufacturing Industry

Mohammad Adhi Rachmaidi, Andi Fahmi Lubis; adhi.rach@gmail.com

Universitas Indonesia

Do Industrial Estates Promote Export Decision of Manufacturing Firms in Indonesia?

Meindra Sabri, Nachrowi Djalal Nachrowi; meindra.sabri@gmail.com

Universitas Indonesia

DATE **TUESDAY, 15 AUGUST 2017**

07.30 - 08.00

Registration

08.00 - 10.00
CIKINI

Parallel Sessions 3 : Tuesday, 15 August 2017

PAR 3 - A3: Good Governance and Corruption & Health Insurance and Social Protection

Corruption: The Determinants and Its Impact on Economic Growth in Asia-Pacific

Heppy Febrina Hariyani¹, Dominicus Saverius Priyarsono²; happyfebrina02@gmail.com

¹Tazkia University College of Islamic Economics, ²Bogor Agricultural University

Ellections Strategy in Indonesia: Analysis of Electoral System, Voters Behavior and Corruption

Irwanda Wisnu Wardhana; irwandawisnu@gmail.com

Indonesia Ministry of Finance

Estimated Cost of Health of Air Pollution Caused by Motor Vehicles in Surabaya

Daniel Jones Bernadi, Bambang Eko Afiatno; daniijonesbern@gmail.com

The Impact of Indonesia's Rapid Move Towards Universal Health Insurance on Health Expenditure

Meliyanni Johar; meliyanni.johar@uts.edu.au

TNP2K (Tim Nasional Percepatan Penanggulangan Kemiskinan)

Utilization of Aceh Health Insurance Program (JKA), What factors Influence It ?

Subhan, Sri Moertiningsih Adioetomo; subhan@bps.go.id

University of Indonesia

08.00 - 10.00
MENTENG

Parallel Sessions 3 : Tuesday, 15 August 2017
PAR 3 - B3: Islamic Economics, Zakat and Waqf II

Impacts of Sharing-based Transportation Services towards Welfare and Happiness of Workers: Case Study of Gojek and Grab Drivers in Jakarta

Rahmatina Awaliah Kasri, Akka Cendana Putri; unirahma@gmail.com

Universitas Indonesia

Indonesia Student's Intention to Invest in Sukuk: Theory of Planned Behavior Approach

Chasbi Ashidiqi, Tika Arundina; speedychasbi@gmail.com

University of Indonesia

Mitigation of Moral Hazard Risk of Mudharaba Financing (Case Study: Bank Nagari Sharia)

Sufyati HS¹, Yeni Oktaviani²; sufyati.yusuf@gmail.com

¹Universitas Nasional, ²STIE Ahmad Dahlan Jakarta

Strengthening Corporate Zakah Policy in Indonesia

Andriani Andriani, Mairijani Mairijani; andriani@akuntansipoliban.ac.id

Banjarmasin State Polytechnic

Reframing Financial Sector Rent of Indonesia's Islamic Banking Development: Does Level of Playing Field Maker?

Sigit Pramono; pramsi13@apu.ac.jp

University of Indonesia and SEBI School of Islamic Economic

08.00 - 10.00
THAMRIN 1

Parallel Sessions 3 : Tuesday, 15 August 2017
PAR 3 - C3: Others II

Dynamics of Energy, Economic Growth and Financial Development in ASEAN+3

Kartika Pramahesti; kpramahesti@gmail.com

Universitas Indonesia

Effect of Risk Preference on Choice Between Public and Private Sector in Indonesia

Apsari Anandari, Chaikal Nuryakin, Anggun Puspita Khoirun Nisa'; apsarianandari@gmail.com

Universitas Indonesia

Efficiency of Electricity Distribution in Java Bali 2005 - 2014

Kuncara Hadi Wibowo; kuncara@outlook.com

Universitas Airlangga

EKC Analysis on Air Pollution in Indonesia

Makhew Geoffrey; matthew.geof@gmail.com

Universitas Indonesia

Estimating Gap of Public Climate Finance for Mitigation Actions in Forestry Sector to Reduce Greenhouse Gas Emissions in Indonesia

Fona Lengkana; fona.lengkana@gmail.com

University of Indonesia

08.00 - 10.00
THAMRIN 2

Parallel Sessions 3 : Tuesday, 15 August 2017
PAR 3 - D3: Global Uncertainty and Micro-Macro Prudential II

Contagion and Spillover Effect From Global Financial Crisis and the Implication Toward Domestic Economy and Financial Stability in Indonesia

Nuning Tri Hadmini, Telisa Aulia Falianty; nuningtrihad@gmail.com

University of Indonesia

Early Detection of Indonesia's Vulnerability to Currency and Banking Crisis

Rosa Agustina Oyong, Rustam Didong, Sugiharso Safuan; rosaa0200@yahoo.com

Universitas Indonesia

Efficiency of Local Government Spending and Implication for Regional Economic Performance

Muhammad Heru Akhmadi¹, Imam Sumarjoko²; heru.cio@gmail.com

¹STAN State Finance Polytechnic, ²Ministry of Finance

Property Cycle of Indonesia

Justina Adamanti, Muhammad Sahirul Alim, Ariyana Abubakar; justina@bi.go.id

Bank Indonesia

08.00 - 10.00
DIPONEGORO

Parallel Sessions 3 : Tuesday, 15 August 2017
PAR 3 - E3: Poverty, Inequality, Mobility and Disparity II

Investigating Poverty and Inequality in Indonesia: a Panle Vector Autoregressive Approach

Hadi Naim, Adhitya Wardhono; hadi77.gresik@gmail.com

University of Jember

The Impact of Rural-Urban Migration on the Welfare of Migrants: Evidence from long Term Longitudinal Surveys in Indonesia

Niken Kusumawardhani, Ahmad Zuhdi, Asep Suryahadi; nkusumawardhani@smeru.or.id

The SMERU Research Institute

The Pakerns of Regional Poverty in Decentralized Indonesia: an Analysis Using Municipality Data Level

Abdul Wahid Fajar Amin; awf.amin@gmail.com

National Graduate Institute for Policy Studies, Tokyo

Inequality and Poverty Alleviation: Globalization, Access, and Gender

Ade Marsinta Arsani; ademarsinta@gmail.com

Badan Pusat Statistik

10.00 - 10.15

Coffee Break

10.15 - 12.15

CIKINI

Parallel Sessions 4 : Tuesday, 15 August 2017

PAR 4 - A4: Tourism and Creative Economy

Behaviour of Repeat Visit to Indonesia Science and Technology Center (PP-IPTEK): Review and Empirical Findings

Supiyon Supiyon; oompitt@gmail.com

Universitas Indonesia

Determining Location Model and Conceptual Design of Marina Hub Port in East Nusa Tenggara

Karno Dwi Joyoutomo; karno_dj@yahoo.com

Universitas Indonesia

Development of Creative Industry in Indonesia: Using Son Conditions Theory to Measure Creative Cities

Abrar Aulia; abraraulia@hotmail.com

Universitas Indonesia

The Influence of Houseing Akributes on Housing Price in East Surabaya

Kresno Eka Mukti; kresnokresno@yahoo.com

Universitas Airlangga

The Role of Creative Economy on Economic Growth: The Case of Indonesia Regions

Adiwan Aritenang; a.aritenang@gmail.com

Institut Teknologi Bandung

10.15 - 12.15

MENTENG

Parallel Sessions 4 : Tuesday, 15 August 2017

PAR 4 - B4: Trade, Investment and Economic Integration II

Industrial Development and Social Wellbeing in Global Production Network: Evidence from the Indonesian Automotive Sector

Sharmila Erizaputri, Padang Wicaksono, Lionel Priyadi; sharmila.eriza@gmail.com

Universitas Indonesia

Liberalization and Market Selection: Empirical Evidence from Import Tariff Decrease in Indonesian Manufacturing Sector

Armanita Kusumaningrum, Arie Damayanti; armanita.k@gmail.com

Universitas Indonesia

Patent Protection System and FDI in Developing Country

Manda Pratomo; manda.pratomo@gmail.com

Universitas Indonesia

Global Production Network: What do We Find in Indonesia?

Agus Minahul Ilmi; agus.ilmi@gmail.com

University of Indonesia

10.15 - 12.15

THAMRIN 1

Parallel Sessions 4 : Tuesday, 15 August 2017

PAR 4 - C4: Others III

Natural Versus Artificial View Premium on Apartment

Andi Nidaul Hasanah; andinidaul@gmail.com

University of Indonesia

Parental Matchmaking and Intergenerational Transfer: The Case of Indonesia

Adinda Rizky Herdianti, Diahhadi Setyonaluri; adindarizky@gmail.com

Universitas Indonesia

The Analysis of the Economic Behaviour of Papalele Woman Group in Ambon

Jani Effendy; janieffendy77@gmail.com

The Effect of Court Delay in the Prison Population on Crime Rates

Davy Hendri¹, Dorodjatun Kuntjoro-Jakti², Adrianus Meliala³; davyhendri74@gmail.com

¹UIN Imam Bonjol, ²University of Indonesia, ³University of Indonesia

The Impact of Government Spending on Basic Education at the District Level in Indonesia: Does Capacity of Local government Hamper Improvement of Education?

Thia Jasmina; ps0291ie@ed.ritsumeikan.ac.jp

Graduate School of Policy Science Ritsumeikan University, Japan

10.15 - 12.15

THAMRIN 2

Parallel Sessions 4 : Tuesday, 15 August 2017

PAR 4 - D4: Microfinance and Financial Inclusion & Trade, Investment and Economic Integration III

Analysis of Target Achievement in Bank Indonesia 2015 Regulation on Lending for Micro, Small and Medium Enterprises

Dewi Ratna Sjari Martokoemo; pinkmarto@gmail.com

Universitas Indonesia

Identifyin Gross Spread Pakern in Indonesian Initial Public Offering Market

Nur Aida Arifah Tara; nur.tara@live.vu.edu.au

College of Business, Victoria University

Linkage Program and Triangle Microfinance

Triani Fitriasaki, Zuliani Dalimunthe; triani.fitriasaki@gmail.com

Universitas Indonesia

What Can We Learn from Economic and Social Realm in Global Value Chain?: Evidence from Indonesian Electronics Industry

Khosirotul Fajri Hududurohim Alkhour¹, Padang Wicaksono², Toni Bakhtiar³; ashialkhair@gmail.com

¹Universitas Indonesia, ²Universitas Indonesia, ³Bogor Agricultural University

10.15 - 12.15
DIPONEGORO

Parallel Sessions 4 : Tuesday, 15 August 2017

PAR 4 - E4: Innovation and Digital Enhancement & Others IV

A Third-Order Formative Model: An Empirical Insight from SME's Website Interface Quality in West Sumatra, Indonesia

Meuthia; meuthia.ute@gmail.com

Universitas Andalas

The Middle Class is Us: Geong Along with Indonesian Middle Class

Ketut Krisna¹, Turro S. Wongkaren²; krisnachandrawisika@yahoo.com

¹Universitas Indonesia, ²Lembaga Demografi FEB UI

The Politics of District Budget Formulation in Indonesia Multy-Party System

Ahmad Irsan A. Moeis; airsan2012@gmail.com

Universitas Indonesia

Does Community-Based Development Program Boost Rural Households Access to Utilities and Services? Evidence from a Randomized Experiment in Afghanistan

Bilal Kakar; bilal2kakar@gmail.com

Waseda University

The Role of Entrepreneurship on Regional Economic Growth in Indonesia

Nurmalia¹, Djoni Hartono², Irfani Fithria³; irfanifum@gmail.com

¹Ministry of Trade, ²University of Indonesia, ³University of Indonesia

12.15 - 13.15

Lunch Break

13.15 - 15.15

Plenary / Policy Dialogue Session 2

"Creative Economy ad the New Source of Economic Growth"

15.15 - 17.15
CIKINI

Parallel Sessions 5 : Tuesday, 15 August 2017

PAR 5 - A5: Demographic Transition and Labor Market III

The Effect of Social Capital on Fertility in Indonesia (National Socio-Economic Data Analysis of 2014)

Lidya Sri Yeni, Omas Bulan Samosir; lidya_sy@yahoo.com

University of Indonesia

The Impact of Sanitation and Water to Child Growth

Nizaruddin Nizaruddin, Sri Moertiningsih Adioetomo; nizarkarim@bps.go.id

Universitas Indonesia

The Relationship Between Mother's Fertility Behavior and Daughter's Fertility Intention

Purnama Cahyasaki Silalahi, Diahhadi Setyonaluri; pur766hi@gmail.com

Universitas Indonesia

Overeducation: Does it Motivate Workers to Look for Another Job?

Aristrina Sugiyanti; aristrina.s@gmail.com

University of Indonesia

Wage Disparity Against Workers with Disabilities

Agus Saefulah, I Dewa Gede Karma Wisana; mpun1516@gmail.com

Universitas Indonesia

15.15 - 17.15
MENTENG

Parallel Sessions 5 : Tuesday, 15 August 2017

PAR 5 - B5: Islamic Economics, Zakat and Waqf III

Sukuk Market Liquidity Determinants: Case Study of Sovereign Sukuk in Indonesia

Farah Rizky Ariyana, Tika Arundina; farah.ariyana@hotmail.com

University of Indonesia

The Influence of Earning Management and Financial Performance on the Islamic Socially Responsibility in Islamic Banks in Indonesia

Evony Silvino Violita; evony.silvino@gmail.com

Universitas Indonesia

The Influence of Islamic Social Responsibility on Efficiency in Islamic Banks Using Stochastic Frontier Approach

Dimas Maulana, Evony Silvino Violita; mdimas103@gmail.com

Universitas Indonesia

Determinants of Underpricing in Treasury Auction: Evidence from Indonesian Sovereign Sukuk Auction (2012-2016)

Ristiyanti Hayu Pertiwi, Tika Arundina; risti.hayu@gmail.com

Universitas Indonesia

Towards Sustainable Development: Indonesia Project Based Sukuk for Infrastructure
Nila Dewi; nila.dewi@widyatama.ac.id
Widyatama University

15.15 - 17.15
THAMRIN 1

Parallel Sessions 5 : Tuesday, 15 August 2017
PAR 5 - C5: Trade, Investment and Economic Integration III

Tariff Protection Policy and Heterogeneity Response of Productivity of Domestic Import- Competing Firms: Evidence of Indonesia
Ditanika Karisma Nur Tristita; ditanika.knt@gmail.com
Universitas Indonesia

The Analysis of Two Way Relationship among Economic Development and Environmental Degradation in ASEAN: An Empirical Finding of the Environmental-Based Economic
M. Irsyad Ilham; irsyadilham65@gmail.com
Institute of Statistics, Jakarta

The Dynamics of ASEAN's Trade in Services: The Process Towards Integration
Arkan Fadhil; fadhil.arkan7@gmail.com
Universitas Indonesia

The Industrial Determinants of Export Competitiveness for the Indonesian Manufacturing Sector 2001-2014
England Rhys Can; england.rhys.can@gmail.com
Universitas Indonesia

Trade Creation and Trade Diversion Effects of the ASEAN-China FTA, ASEAN-India Free Trade Agreement Implementation on the Export of Indonesia's
Wahyudi Setia Darma; yudi7111@gmail.com
University of Indonesia

15.15 - 17.15
THAMRIN 2

Parallel Sessions 5 : Tuesday, 15 August 2017
PAR 5 - D5: Global Uncertainty and Micro-Macro Prudential III & Poverty, Inequality, Mobility and Disparity III

The Spillover Effect of Us Unconventional Monetary Policy, Oil Price Shocks on Reaction Monetary Policy and Economics Growth: Empirical Evidence on ASEAN-4
Lucik, Adhitya Wardhono; lucik.soka@gmail.com
University of Jember

The Impact of Interbank Market Interconnectedness to Indonesian Banking Efficiency
Ndari Surjaningsih, Januar Hafidz, Justina Adamanti; ndari@bi.go.id
Bank Indonesia

Who and Why the Indonesian Elderly Move?
Yeni Rachmawati, Chotib Hasan; rahmawati.yeni@gmail.com
Universitas Indonesia

Too Young to Marry: Households Decision on Child Marriage in Indonesia
Luh Putu Ratih Kumala Dewi, Teguh Dartanto; kratih96@gmail.com
Universitas Indonesia

15.15 - 17.15
DIPONEGORO

Parallel Sessions 5 : Tuesday, 15 August 2017
PAR 5 - E5: Demographic Transition and Labor Market IV & Trade, Investment and Economic Integration IV

Quality versus Quantity of Children: The Role of Parental Expectation in Shaping Fertility Behavior in Indonesia
Benny Kristiyan Adi, Diahadi Setyonaluri ; k4benny@gmail.com
Universitas Indonesia

Who Gets Paid Beker: A Study on Inter-Industry Wage Differentials in Indonesian Manufacturing Sector
I Dewa Gede Karma Wisana, Putri Faradina Iskandar; dewa_wisana@yahoo.com
Universitas Indonesia

Pricing to Market Behaviour on Indonesian Industrial Export Products
Pratiwi Dasaningtias Chondro, Telisa Aulia Falianty; tyas.chondro@gmail.com
University of Indonesia

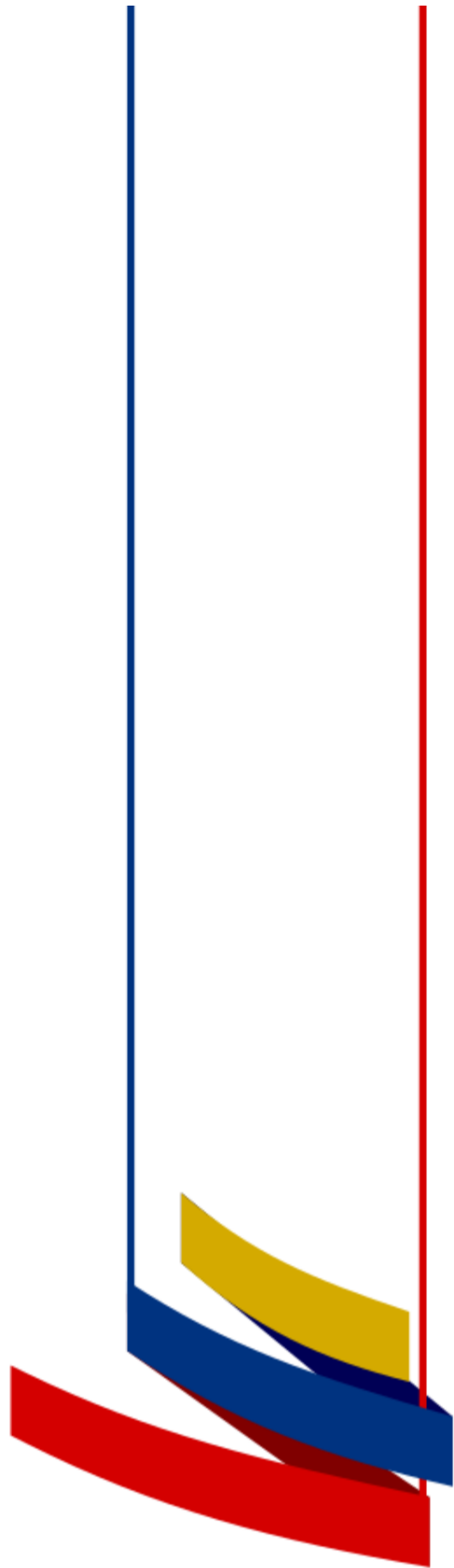
Strengthening the Role of Maritime Economy in Sustainable Manner (Case Study in East Java, Indonesia)
Arman; arman@universitas-trilogi.ac.id
Universitas Trilogi

17.15 - 17.30

Coffee Break

17.30 - 18.00

Closing Remarks



ICI^{ED}

The 2nd International Conference
on Indonesian Economy & Development

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Sent

Drafts

More

Labels +

icied@ui.ac.id

[ICIED] Draft of presentation schedule External Inbox x

International Conference on Indonesian Economy and Development <icied@ui.ac.id> Thu, Jul 27, 2017, 11:27 PM

Dear Presenters,

Thank you for your participation in submitting paper to The 2nd ICIED. We are looking forward to see you at the conference.

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Strengthening the Role of Sustainable Maritime Economy in East Java, Indonesia

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Abstract – East Java becomes one of the strategic areas in strengthening the maritime economy in Indonesia. This study aims to (1) know the role of the maritime sector on the performance of economic development in East Java, especially in the period 2010-2015 in East Java, Indonesia and (2) to understand more closely how the government's efforts to regulate the maritime sector in order to strengthen the strategic and safeguard and protect maritime users on an ongoing basis. The method used is input output (IO) method using data of IO year 2010 and 2015 East Java. The analysis shows that the maritime industry sector is a strategic sector in boosting regional economic performance. Some indications that cause the sector to be strategic are (1) the output of the maritime sector has been much processed first before it reaches the end of demand, (2) the consumption of more people in the processed industry, (3) the fishery product is processed before it is exported and (4) Widespread market run and (5) possess a wider range of investments and (6) stronger sector linkages. Furthermore, government regulations through ministerial laws help the maritime industry be more strategic and promote environmentally sound maritime development.

Key words; Strengthening, role, maritime economy, sustainable

I. INTRODUCTION

Currently, the Government of Indonesia is paying full attention to maritime conditions and sovereignty, after a long period of development more directed in the mainland. The government and the public believe that the wealth of Indonesia is sourced from the sea. Government under the control of the ministry of marine and fisheries (KKP) to reform the bureaucracy through the ministerial regulation changes ~~NO~~ No. 2/MEN/2011 minister becomes Minister of Regulation No. 42/PERMEN-KP/2014 [1]. The CTF is moving quickly to prevent and resolve illegal fishing problems, unregistered vessels and unregulated vessels, called IUU fishing. Ministerial Regulation shall remain based on Law Number 45 Year 2009 concerning fisheries [2].

The Maritime Economy in this study takes into account the sectors/commodities of capture fisheries, aquaculture, processing and fish preservation, and marine transportation. This study aims to determine the role of the maritime sector on the performance of economic development in East Java, especially in the period 2010-2015 in East Java, Indonesia. Second, a closer understanding of how the government's efforts to regulate the maritime sector to play a role in strengthening the strategic sector and environmentally sound and sustainable.

East Java became one of the areas in Indonesia, which has a large production amount in the field of fisheries and marine, fish processing industry and salt industry. East Java is classified as the third cluster for the production of capture fisheries, which is a group of areas capable of producing average capture fisheries between 220-400 thousand tons per year [3]. The third largest production of capture fishery in East Java after North Maluku and North Sumatera is 352,779 tons in 2010, 375,827 tons in 2011 and 399,371 tons in 2014. Average production of aquaculture is classified as cluster 2, Cultivation fisheries amounted to 490 thousand-1 million tons. Throughout 2010-2014 the average production of aquaculture is 863,593 tons, representing the fourth largest average production after South Sulawesi, Central Sulawesi and East Nusa Tenggara.

Aquaculture continues to show its role in the fisheries and marine sector, which is shown by the increasing amount of production compared with capture fisheries. This situation also occurs in South Korea where the role and production of the aquaculture sector far surpasses capture fisheries [4].

However, the growth and development of the terrestrial fisheries sector has environmental impacts, such as the threat of mangrove damage, excessive use of chemical fertilizers and pollution. Environmental problems also occur in the marine fishery sector (capture fisheries) due to overfishing, bombing, toxic use and coral-shell damaged by fishing gear and social conflicts. This is a threat to maritime economic development in East Java and Indonesia.

One of the efforts to maintain maritime sustainability and sustainability is the existence of Marine Protected Area (MPAs). MPAs not only protect the threat of environmental damage but can provide economic benefits for fishermen. The objectives of MPAs are (1) increasing tourism production and recreation opportunities; (2) conservation of critical ecosystems; and (3) sustainable use of coastal resources [5]. MPAs can protect critical habitats, cultural heritage sites and conserve biodiversity [6]. Thus, Hanna asserts that the economic dimension creates a fit between economic incentives and ecosystem goals [7].

Furthermore, a comprehensive formula is needed to encourage the marine sector as the national flagship sector [8]. Therefore, coastal zones require the management of integrally between land and sea [9]. Indeed development does not separate local wisdom and local economics in the dimensions of maritime development. Lampe states that there are at least

four insights of maritime culture with insight into the archipelago and local wisdom (1) insight about the environment, (2) insights about the sea and its contents as open-closed space, (3) insights on marine ethnic diversity and Maritime culture, and (4) the concept of unity of the homeland and maritime nation of the archipelago [10].

Furthermore, maritime policy in a political and sustainable way should pay attention to traditional ecological knowledge and eco systems. He divided into five things: (1) there is rice in the field and fish in the waters, (2) where there is water there are fish, (3) the sea begins in the mountains, (4) the wealth of the sea belongs to the dead, the living and those yet to be born, and (5) our Struggle is for the future: ours and that of the fish. Thus the maritime development policy should be based on local wisdom, culture, economy and ecosystem [11].

The Government has established sustainable development plans to achieve Sustainable Development Goals (SDGs) on marine resource midwives (1) to prevent and significantly reduce all types of marine pollution, (2) to manage and protect marine and coastal ecosystems sustainably to avoid excessive adverse impacts, and (3) arrange for non-excessive harvesting, illegal fishing and destructive fishing practices [12].

Currently, the production of the fisheries sector is not as good as the terrestrial fisheries in East Java. Therefore, inter-sectoral linkages are necessary in order to encourage investment and strengthen the economic base [13]. This will be more strategic if supported by a good port infrastructure. The port sector strongly supports the maritime industry's import export economy. This is reflected in the forward linkage value tends to be greater than the backward linkage value [14].

The novelty in this study is to assess the role of the maritime economy by juxtaposing the role of government in strengthening the maritime sector through regulation of laws and governmental affairs.

II. RESEARCH METHOD

A. Data

The data used in this research is Input-Output (IO) data in 2010 and 2015. The data is obtained directly from the Central Statistics Agency (BPS) of East Java. Other data used in supporting this research are the laws and government regulations relating to fisheries and the management of fisheries resources in a sustainable way. Legislation data is used to compare with IO estimates.

B. Method

This research uses Input-Output (IO) analysis to assess and evaluate the role of maritime economy in East Java-Indonesia. IO has 3 basic assumptions: (1) homogeneity, (2) proportionality, and (3) additivity [15,16]. The advantage of the IO method is its ability to assess changes in final demand in the event of economic changes and the ability to tune the economic performance in the short and medium term. In general the equation can be formulated as follows;

$$\begin{aligned} x_{11} + x_{12} + x_{13} + F_1 &= X_1 + M_1 \\ x_{21} + x_{22} + x_{23} + F_2 &= X_2 + M_2 \end{aligned} \quad (1)$$

Equation (1) shows the number of inter request added to the final request equal to the amount of output plus the import. Equation (1) can be simplified to be

$$X_i = \sum_{j=1}^n x_{ij} + F_i - M_i \quad (2)$$

If the equation is based on a column, then it can be written,

$$\begin{aligned} x_{11} + x_{21} + x_{31} + V_1 &= X_1 \\ x_{12} + x_{22} + x_{32} + V_2 &= X_2 \end{aligned} \quad (3)$$

Equation (3) can be simplified to be

$$\sum_{j=1}^n x_{ij} + V_j = X_j \quad (4)$$

x_{ij} : The number of i-sector outputs used as the j sector input

F_i : Final demand for sector i

X_i : Total output of sector i

M_i : Import production i

V_j : Primer input sector j

X_j : Total input sector j

By using the algebraic equation, combining equation 4 is obtained by a new equation ie

$$\sum_{i=1}^n F_i - \sum_{i=1}^n M_i = \sum_{i=1}^n V_j \quad (5)$$

C. Leontif Matrix

Furthermore, the identity matrix is reduced by the coefficient value through the inverse matrix. This is a fundamental and amazing finding of an economist who is Leontif, so it is commonly referred to as Leontief matrix. Can be written;

$$B = (I - A)^{-1} \quad (6)$$

III. RESULT AND DISCUSSION

This research studies about the influence and role of maritime sector on the performance of economic development in East Java, especially in the period 2010-2015 in East Java, Indonesia. Further, a closer look at how the government's efforts to regulate the maritime sector play a role in strengthening the strategic sector in the East Java region of Indonesia, which is environmentally sound and sustainable. There are four sectors related to the maritime economy in the input-output table (IO) of 2010 and 2015, namely the marine fish sector and marine fishery products, the terrestrial fish sector and the fishery products, the processing and preservation of fish and marine biota, and the transportation sector Sea. The results of maritime sector role analysis in the period 2010-2015 seen from the side of backward linkage (BL) and forward linkage (FL) presented in Table 1.

Table 1. The [maritime-Maritime sector-Sector](#) in 2010 and 2015 in East Java

| Sector | 2010 | | | | 2015 | | | |
|--------|------|------|------|------|------|------|------|------|
| | BL | Rank | FL | Rank | BL | Rank | FL | Rank |
| 1 | 1.27 | 73 | 1.22 | 50 | 1.25 | 94 | 1.24 | 58 |
| 2 | 1.54 | 28 | 1.40 | 33 | 1.36 | 75 | 1.72 | 27 |
| 3 | 1.84 | 5 | 1.07 | 75 | 1.92 | 17 | 1.79 | 21 |
| 4 | 1.34 | 59 | 1.37 | 36 | 2.17 | 2 | 1.47 | 38 |

Source: Data IO BPS, 2010 and 2015, after being processed

(1) Sea Fish ~~And~~ Sea Fishery Products, (2) Land Fish and Fishery Products, (3) Processing and Preservation of Fish and Biota, and (4) Sea Transportation.

Table 1 shows that changes in the value of BL and FL in 2010 and 2015 for each maritime sector. These changes have implications for the rankings of each maritime sector in boosting regional economic performance. The land fishery sector shows a good change from the forward linkage side but decreases significantly from the backward linkage side. The rank and value of the terrestrial fishery sector declined significantly from 28th in 2010 to 75th place in 2015, where there was a change in the value of BL from 1.54 to 1.36.

Different from the production side where the sector of fisheries products showed an increase of FL value from 1.40 in 2010 to 1.72 in 2015. This also resulted in the ranking of the sector has increased from 33rd rank 2010 to rank 27 of 2015. This indicates that the increase of production from 634,279 tons in 2010 to 1,043,866 tons the year 2014 has an influence in the performance drivers of the region. This positive change indicates that government regulation boosted the maritime sector on land fisheries has an effect on increasing production.

The government seeks to increase the production of terrestrial fisheries by taking into account environmental and sustainability factors, especially those related to the extension of terrestrial aquaculture that potentially damages mangrove crops. Furthermore, the government advocates the use of environmentally friendly feed sources in order to reduce coastal and coastal pollution. Local and central government also increased the budget allocation in order to help the business of aquaculture through the provision of superior seeds, business assistance and empowerment of fishing communities.

The development of the fisheries sector is not as good as the sea fisheries sector. Marine fishery sector has not provided significant changes to the economic performance of East Java. Overall, this sector shows relatively stagnant influence. This sector tends to decrease its ranking from 2010-2015. Year 2010-2015, this sector is ranked 73rd and in year 2010 down to rank 94th Year 2015 based on backward linkage (BL).

Furthermore, the ranking of marine fish sector and marine fishery products based on forward linkage (FL) decreased (ranked 50th in year 2010 to rank 58th in year 2015). Although the value of forward linkage increased on the vulnerable of the year (1.22 in year 2010 to 1.24 in year 2015), but supply-side performance decreased when compared with other sectors. This is because other sectors produce relatively higher outputs at vulnerable years 2010-2015. But forward linkage changes are better than backward linkage where the forward linkage value is greater than backward linkage. This shows that the production of marine fish sector and marine fishery products is relatively increasing (although small) in the time frame of the year 2010-2015. There are several indications that cause (1) the production of marine fishery products shows an increasing trend in the vulnerable year 2010-2015, (2) East Java Province is the largest contributor to the export value of fishery products nationally in 2014, where Tuna, Tongkol and Cakalang (TTC) of US \$-212 million, (3) the ministry of

fisheries and maritime policy has an influence factor, particularly related to the Ministerial Regulation No. 42-/PERMEN-KP-/2014 and Law 31/2006 on fisheries.

Implementation of the law and regulations of the minister as an effort of the government to protect the sea to stay sustainable and prevent the occurrence of marine resource utilization that is not in accordance with environmental rules. The regulation restricts and prohibits the use of tank equipment that can damage the marine environment and regulate fishing lanes in every Fisheries Management Territory of the Republic of Indonesia (WPPNRI). Some of the things that the government's focus relates to the regulation are illegal, unregulated and unregistered (IUU) fishing. Furthermore, the regulation governs the sinking of vessels not in accordance with procedures. The regulation has not made a big change in terms of demand, although from the production side it shows a relatively small change. The marine fisheries sector shows an increase in production from 352,779 tons in 2010 to 399,371 in 2014. The government regulation that gives a big change is happening in the processing and fish preservation industry.

The fish processing industry sector has a strategic value because it can increase the added value and attract various other economic activities to grow faster. The processing and fish preservation sector is experiencing a vulnerable development in 2010-2015. The value of backward linkage and forward linkage on the vulnerable of the year has increased, although its ranking decreases from the backward linkage side. The downgrade of the sector does not mean that output and spread on other sectors go down but other sectors produce output or increase faster. This shows that other sectors are more able to accelerate and attract investment.

Furthermore, the processing industry and fish preservation have increased from the production or supply side quite well. This is reflected in the increase in the value of forward linkage from 1.07 in 2010 to 1.79 in 2015. The increase causes the fish processing industry ranked 21st in 2015, which was originally in the 75th position in 2010. This indicates that the fish processing industry in East Java is experiencing tremendous positive developments.

The processing and preservation of fish and biota produces good performance in terms of demand and production in the period 2010-2015. One of the things that encourage this sector is growing because of the government's commitment to encourage small and large-scale industrial sectors to grow in the country. Furthermore, the support of the government through the regulation of instruction of the President of the Republic of Indonesia Number 7 of 2016 on the Acceleration of Development of National Fishery Industry. This regulation is to limit the export of fish raw materials by prioritizing the export of finished or semi-finished materials. East Java benefited from a strategic position as an agglomeration area, which encouraged the demand for processed fish to have a positive increase as well as trigger the fish processing industry began to grow.

The development of the maritime sector is strongly supported and influenced by sea transportation. East Java

benefits from the port and as a national and international hub. Marine transportation industry plays an important role in accelerating the flow of goods between regions and internationally. Marine transportation has developed very rapidly in supporting the economy in East Java. This sector has a huge impact on other sectors and encourages investment and development of various sectors in East Java. This is reflected in the substantial increase in the value of BL in 1,345 in 2010 to 2,178 in 2015. However, the performance is not accompanied by inventories and increase in sea transport. This can be seen in the value of FL, which increased in a relatively small amount from 1.37 in 2010 to 1.47 in 2015. Development and planning in developing sea transportation is needed in strengthening the maritime sector. Development of technology and innovation is the time to realize in order to build marine transportation industry as a strategic sector.

A. Strategic Maritime Sector

The analysis shows that the strategic maritime sector in East Java in 2015 is the manufacturing sector. Previously, the strategic sector in the year 2010 is the sector of land fisheries and marine transportation sector. Changes in the structure of this sector indicate that the manufacturing sector has begun to develop, while the decline of the role of the land fishery sector as a strategic sector is influenced by the investment power and the relation on the sector has not changed. Meanwhile, the decline in the marine transportation sector is influenced by the decline of sea transport facilities. This is reflected in the BL scatter/BL index and sensitivity/FL index in Table 2.

Table 2. The Value of BL and FL Index of Maritime Sector in East Java.

| Sector | 2010 | | 2015 | |
|--------|----------|----------|----------|----------|
| | BL Index | FL Index | BL Index | FL Index |
| 1 | 0.97 | 0.93 | 0.80 | 0.79 |
| 2 | 1.18 | 1.07 | 0.87 | 1.10 |
| 3 | 1.41 | 0.81 | 1.23 | 1.15 |
| 4 | 1.34 | 1.37 | 1.39 | 0.94 |

Source: Data IO BPS, 2010 and 2015, after being processed

(1) Sea Fish and Sea Fishery Products, (2) Land Fish and Fishery Products, (3) Processing and Preservation of Fish and Biota, and (4) Sea Transportation

The estimation results in Table 2 indicate that the role of the terrestrial fishery sector is on average decreasing from 2010 to 2015. In 2010 the terrestrial fisheries sector is a strategic sector. This is reflected in the value of the BL index and the FL index that exceeds 1. However, by 2015 the value of the sector BL index no longer exceeds 1. This indicates that the terrestrial sector is no longer an strategic sector on average compared to all sectors in Java East. This shift was driven by the driving force of investment and inter-sectoral linkages declining. This situation indicates that regulatory requirements may trigger related sectors to grow through increased investment. Regulation of business licensing and extensification of the sector is very necessary to be the government's attention.

The land fish sector is increasing its supply because the production of terrestrial fish such as catfish, tilapia and carp and shrimp is growing every year, but the investment and relation of the sector has not changed significantly. Especially

catfish that shows increased production and increasing export capacity to various countries. Looking closely at the increasing need of land fish in the larger European and Asian countries, the East Java government developed the upstream-downstream concept in developing the competitiveness of the terrestrial and terrestrial fish processing sectors. However, the development of supply side has not been followed by the development of investment and extensification of the sector.

Furthermore, the shift in the marine transportation sector as a strategic sector is on average due to the lack of sea transportation. This could be due to the lack of strong marine transportation industry in East Java. The transportation industry has become the priority of the government in supporting the maritime sector as a whole. This is very important in supporting the flow of goods between regions and international.

On the other hand, the marine fishery sector has not shown significant changes on average. This is reflected in the value of BL and FL index sector has not reached 1. This situation indicates that the marine fishery sector has not been able to push optimally from the demand side and supply side. The sector's linkages, investment and production value are still lower than the maritime sector and all sectors in East Java. The decline in the number of fishermen, especially small fishermen, could be the cause of low average output. Furthermore, the transition to regulatory change has not been fully able to encourage small-scale fishermen to play an active role in strengthening production in East Java. Although the production of marine fisheries sector 2010-2015 increased, but the output has not been able to exceed the value of other sector production in East Java. The capability of resources and venture capital, especially the small fishermen, which is still very low, affects the output of the sector.

The decrease in the average value of backward linkage indicates that the attractiveness of the land fisheries sector does not increase. The effect of the sector on other sectors has not changed much or is relatively constant. This may be due to (1) the sectors directly related to the land fisheries sector have not changed much, (2) the output of other sectors used by the land fishery sector has not changed much, and (3) the investment sector investment spending has not changed much. This situation causes the land-based fisheries sector to be no longer declared as a strategic sector by 2015, as it is still considered as a strategic sector in 2010.

The processing and fish preservation industry shows relatively better development compared to other maritime sectors. This is reflected in the larger scattering and sensitivity value 1. This situation indicates that the fish processing industry has significant added value as well as being a strategic sector. It gives a considerable influence on other sectors and economy of East Java.

Large, medium and small industries and household industries have an important role in strengthening the fish processing industry. This will trigger a more positive increase in trade in industrial products and stronger inter-sector linkages. Local and central governments need to pay more attention to this change so that the maritime processing

industry development policy can be more advanced. Innovation and technology programs, especially in small industries and households need to be further improved.

IV. CONCLUSION

The analysis shows that the maritime sector in year 2010 and 2015 changed structure. The change resulted in changes the strategic sectors classified as strategic in 2010 to be non-strategic in 2015. The change is one of them influenced by policy regulation in the form of laws and government regulations.

The marine fisheries sector shows the ratings from 2010 to 2015 from both the forward linkage (FL) and backward linkage (BL) sides. This indicates that the seafood sector still has an average output value of less than other sectors, relative stagnant sector relationships, declining number of fishermen and limited market reach.

The land fishery sector is quite developed from the production side but relatively stagnant from the demand side. This is reflected in the value of BL decreased in 2015 to 133, where in 2010 amounted to 154. This indicates that sectorial linkages, investment attractiveness and economic activity expansion are still relatively stagnant. The sector is no longer a strategic sector due to the decline in the average value of BL in the Year 2015. But different from the supply side where production sector showed a significant increase where the value of FL increased from 1.40 in 2010 increased to 172 in 2015. Ranking sector is also ~~h~~increasing from 33 to 27 in 2015.

Positive and significant changes are experienced by the processing and preservation industries and marine biota. This sector experienced an increase in the value of BL and FL in 2015. Although the average rating decreased from the BL side, the average value of BL still exceeds 1. This shows the fishery processing industry sector is classified as the strategic sector on average. This indicates that the maritime industry (1) the output of the maritime sector has been much processed first before it reaches the final demand, (2) the consumption of the community more in the processed industry, (3) the fishery product is processed prior to export, and (4) Market (5) possess a wider range of investments, and (6) stronger sector linkages. Unlike the maritime transport sector, the sector has decreased from the supply side, where the value of FL decreased. However, the BL value has increased significantly so that the sector is in second position. The maritime sector is no longer a strategic sector in 2015 due to the declining value of FL on average.

Furthermore, the active role of the government is very strategic in preserving natural resources through the regulation of ministerial laws and regulations. Ministerial Regulation and Law No. 45 2009 on fisheries have a very big role in maintaining the utilization of marine resources sustainably. Furthermore, Ministerial Regulation No. 42/PERMEN-KP/2014 plays a role in preventing the processing of marine resources that are not environmentally friendly.

This study needs to focus more on estimating the impact of regulatory changes and government policies on marine and fisheries sector and regional development. A relevant research methods to estimate the impact are Computable General Equilibrium (CGI) and simultaneous regression methods using panel data and time series.

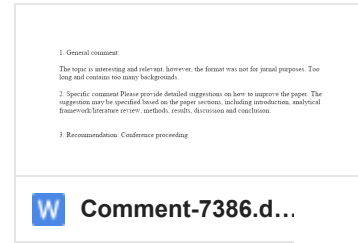
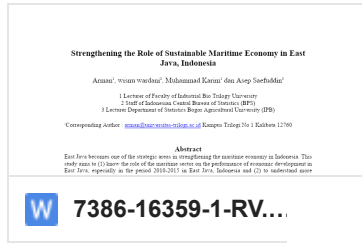
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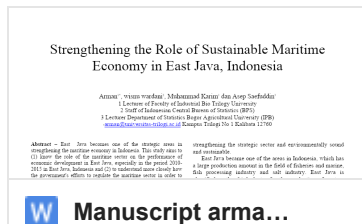
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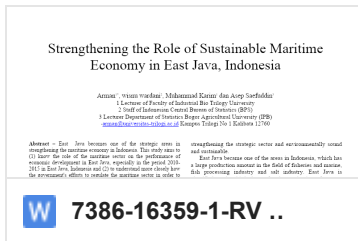
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Strengthening the Role of Sustainable Maritime Economy in East Java, Indonesia

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Intoduction

Currently, the Government of Indonesia is paying full attention to maritime conditions and sovereignty, after a long period of development more directed in the mainland

Government under the control of the ministry of marine and fisheries (KKP) to reform the bureaucracy through the ministerial regulation changes NO.2/MEN/2011 minister becomes Minister of Regulation No.42/PERMEN-KP/2014.

Introduction

East Java became one of the areas in Indonesia, which has a large production amount in the field of fisheries and marine, fish processing industry and salt industry.

Throughout 2010-2014 the average production of aquaculture is 863,593 tons, representing the fourth largest average production after South Sulawesi, Central Sulawesi and East Nusa Tenggara.

The Objective Research

to determine the role of the maritime sector on the performance of economic development in East Java, especially in the period 2010 and 2015 in East Java, Indonesia

A closer understanding of how the government's efforts to regulate the maritime sector to play a role in strengthening the strategic sector and environmentally sound and sustainable

State Of The Art

- The port sector strongly supports the maritime industry's import export economy. This is reflected in the forward linkage value tends to be greater than the backward linkage value (Chang, et.al 2014).
- Aquaculture continues to show its role in the fisheries and marine sector, which is shown by the increasing amount of production compared with capture fisheries. This situation also occurs in South Korea where the role and production of the aquaculture sector far surpasses capture fisheries (Lee and Yoo, 2013).

State Of The Art

1) there is rice in the field and fish in the waters, (2) where there is water there are fish. (3) the sea begins in the mountains, (4) the wealth of the sea belongs to the dead, the living and those yet to be born and (5) our Struggle is for the future: ours and that of the fish (Kurien 1998)

Data And Method

The data used in this research is Input-Output (IO) data in 2010 and 2015. The data is obtained directly from the Central Statistics Agency (BPS) of East Java. Other data used in supporting this research are the laws and government regulations relating to fisheries and the management of fisheries resources in a sustainable way. Legislation data is used to compare with IO estimates.

Result and Discussion

Table 1. The role of the maritime sector in 2010 and 2015 in East Java

| Sector | 2010 | | | | 2015 | | | |
|---|-------|------|-------|------|-------|------|-------|------|
| | BL | Rank | FL | Rank | BL | Rank | FL | Rank |
| Sea Fish And Sea Fishery Products | 1.279 | 73 | 1.229 | 50 | 1.252 | 94 | 1.246 | 58 |
| Land Fish and Fishery Products | 1.545 | 28 | 1.408 | 33 | 1.367 | 75 | 1.724 | 27 |
| Processing and Preservation of Fish and Biota | 1.848 | 5 | 1.073 | 75 | 1.926 | 17 | 1.795 | 21 |
| Sea Transportation | 1.345 | 59 | 1.378 | 36 | 2.178 | 2 | 1.477 | 38 |

Result and Discussion

The land fishery sector shows a good change from the forward linkage side but decreases significantly from the backward linkage side. The rank sector declined from 28th in 2010 to 75th in 2015.

Different from the production side where the sector of fisheries products showed an increase of FL value from 1,408 in 2010 to 1,724 in 2015. This also resulted in the ranking of the sector has increased from 33rd rank 2010 to rank 27 of 2015.

Result and Discussion

Sea fishery Product sector has not provided significant changes to the economic performance of East Java. This sector tends to decrease its ranking from 2010-2015. This sector is ranked 73rd and in 2010 down to rank 94th Year 2015 based on backward linkage (BL).

The ranking of Sea fish sector and Sea fishery products based on forward linkage (FL) decreased (ranked 50th in year 2010 to rank 58th in 2015).

Result and Discussion

There are several indications that cause (1) the production of marine fishery products shows an increasing trend in 2010-2015, (2) East Java Province is the largest contributor to the export value of fishery products nationally in 2014, where Tuna, Tongkol and Cakalang (TTC) of US \$ 212 million, (3) the ministry of fisheries and maritime policy has an influence factor, particularly related to the Ministerial Regulation **No. 42 / PERMEN-KP / 2014** and **Law 31/2006 on fisheries**

Result and Discussion

The processing industry and fish preservation have increased from supply side. The value of forward linkage from 1.073 in 2010 to 1.795 in 2015. The rank is 21st in 2015 and 75th in 2010. Even though, the rank BL decreases, but the value increases

That means, the government's commitment to encourage small and large-scale industrial sectors to grow in the country

Furthermore, the support of the government through the regulation of instruction of the President of the Republic of Indonesia Number 7 of 2016 on the Acceleration of Development of National Fishery Industry. This regulation is to limit the export of fish raw materials by prioritizing the export of finished or semi-finished materials.

Result and Discussion

- The development of the maritime sector is strongly supported and influenced by sea transportation
- This sector has a huge impact on other sectors and encourages investment and development of various sectors in East Java.
- This is reflected in the substantial increase in the value of BL in 1,345 in 2010 to 2,178 in 2015.

Result and Discussion

- However, the performance is not accompanied by inventories and increase in sea transport. This can be seen in the value of FL, which increased in a relatively small amount from 1.378 in 2010 to 1.477 in 2015
- Development and planning in developing sea transportation is needed in strengthening the maritime sector. Development of technology and innovation is the time to realize in order to build marine transportation industry as a strategic sector.

Strategic Sectors

Table 2. The value of BL and FL index of maritime sector in East Java.

| Sector | 2010 | | 2015 | |
|---|----------|----------|----------|----------|
| | BL Index | FL Index | BL Index | FL Index |
| Sea Fish And Sea Fishery Products | 0.976 | 0.939 | 0.802 | 0.799 |
| Land Fish and Fishery Products | 1.180 | 1.075 | 0.876 | 1.105 |
| Processing and Preservation of Fish and Biota | 1.411 | 0.819 | 1.234 | 1.150 |
| Sea Transportation | 1.345 | 1.378 | 1.396 | 0.947 |

- The processing and fish preservation industry shows relatively better development compared to other maritime sectors
- This situation indicates that the fish processing industry has significant added value as well as being a strategic sector.
- That's why the low and government regulation can improve marine sector and keep sustainable manner

Conclusion

The analysis shows that the maritime sector in year 2010 and 2015 changed structure. The change is one of them influenced by policy regulation in the form of laws and government regulations.

Positive and significant changes are experienced by the processing and preservation industries and marine biota. This sector experienced an increase in the value of BL and FL in 2015. The sector is a strategic sector

Conclusion

This indicates that the maritime industry (1) the output of the maritime sector has been much processed first before it reaches the final demand, (2) the consumption of the community more in the processed industry, (3) the fishery product is processed prior to export and (4) Market and (5) possess a wider range of investments and (6) stronger sector linkages.

Conclusion

the active role of the government is very strategic in preserving natural resources through the regulation of ministerial laws and regulations. Ministerial Regulation and Law No.45 2009 on fisheries have a very big role in maintaining the utilization of marine resources sustainably.

Ministerial Regulation No. 42/PERMEN-KP/2014 plays a role in preventing the processing of marine resources that are not environmentally friendly

Sustainable Policy Implications

To strengthen the maritime sector as a strategic sector, the government needs to develop a comprehensive policy. The development of marine aquaculture by offshore can help fish production and encourage investment in various fishery and marine lines

Policy regulations and regulations are needed in order to encourage fisheries production but on the other hand do not damage the aquatic environment.

Sustainable Policy Implications

Government efforts in maintaining and preserving the marine wealth and preventing overfishing should continue to be inflated. Simultaneously, the government is expected to be able to strengthen the fishing fleet to prevent illegal fishing. This policy can have an impact on increasing production, investment and sector linkages.

The Government is committed to providing education, training, funding and marketing assistance in developing the cultivation and processing of terrestrial fish

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Strengthening the Role of Sustainable Maritime Economy in East Java, Indonesia

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Abstract – East Java becomes one of the strategic areas in strengthening the maritime economy in Indonesia. This study aims to (1) know the role of the maritime sector on the performance of economic development in East Java, especially in the period 2010-2015 in East Java, Indonesia and (2) to understand more closely how the government's efforts to regulate the maritime sector in order to strengthen the strategic and safeguard and protect maritime users on an ongoing basis. The method used is input output (IO) method using data of IO year 2010 and 2015 East Java. The analysis shows that the maritime industry sector is a strategic sector in boosting regional economic performance. Some indications that cause the sector to be strategic are (1) the output of the maritime sector has been much processed first before it reaches the end of demand, (2) the consumption of more people in the processed industry, (3) the fishery product is processed before it is exported and (4) Widespread market run and (5) possess a wider range of investments and (6) stronger sector linkages. Furthermore, government regulations through ministerial laws help the maritime industry be more strategic and promote environmentally sound maritime development.

Key words; Strengthening, role, maritime economy, sustainable

I. INTRODUCTION

Currently, the Government of Indonesia is paying full attention to maritime conditions and sovereignty, after a long period of development more directed in the mainland. The government and the public believe that the wealth of Indonesia is sourced from the sea. Government under the control of the ministry of marine and fisheries (KKP) to reform the bureaucracy through the ministerial regulation changes ~~NONo.~~ 2/MEN/2011 minister becomes Minister of Regulation No. 42/PERMEN-KP/2014 [1]. The CTF is moving quickly to prevent and resolve illegal fishing problems, unregistered vessels and unregulated vessels, called IUU fishing. Ministerial Regulation shall remain based on Law Number 45 Year 2009 concerning fisheries [2].

The Maritime Economy in this study takes into account the sectors/commodities of capture fisheries, aquaculture, processing and fish preservation, and marine transportation. This study aims to determine the role of the maritime sector on the performance of economic development in East Java, especially in the period 2010-2015 in East Java, Indonesia. Second, a closer understanding of how the government's efforts to regulate the maritime sector to play a role in

strengthening the strategic sector and environmentally sound and sustainable.

East Java became one of the areas in Indonesia, which has a large production amount in the field of fisheries and marine, fish processing industry and salt industry. East Java is classified as the third cluster for the production of capture fisheries, which is a group of areas capable of producing average capture fisheries between 220-400 thousand tons per year [3]. The third largest production of capture fishery in East Java after North Maluku and North Sumatera is 352,779 tons in 2010, 375,827 tons in 2011 and 399,371 tons in 2014. Average production of aquaculture is classified as cluster 2, Cultivation fisheries amounted to 490 thousand-1 million tons. Throughout 2010-2014 the average production of aquaculture is 863,593 tons, representing the fourth largest average production after South Sulawesi, Central Sulawesi and East Nusa Tenggara.

Aquaculture continues to show its role in the fisheries and marine sector, which is shown by the increasing amount of production compared with capture fisheries. This situation also occurs in South Korea where the role and production of the aquaculture sector far surpasses capture fisheries [4].

However, the growth and development of the terrestrial fisheries sector has environmental impacts, such as the threat of mangrove damage, excessive use of chemical fertilizers and pollution. Environmental problems also occur in the marine fishery sector (capture fisheries) due to overfishing, bombing, toxic use and coral-shell damaged by fishing gear and social conflicts. This is a threat to maritime economic development in East Java and Indonesia.

One of the efforts to maintain maritime sustainability and sustainability is the existence of Marine Protected Area (MPAs). MPAs not only protect the threat of environmental damage but can provide economic benefits for fishermen. The objectives of MPAs are (1) increasing tourism production and recreation opportunities; (2) conservation of critical ecosystems; and (3) sustainable use of coastal resources [5]. MPAs can protect critical habitats, cultural heritage sites and conserve biodiversity [6]. Thus, Hanna asserts that the economic dimension creates a fit between economic incentives and ecosystem goals [7].

Furthermore, a comprehensive formula is needed to encourage the marine sector as the national flagship sector [8].

Therefore, coastal zones require the management of integrally between land and sea [9]. Indeed development does not separate local wisdom and local economics in the dimensions of maritime development. Lampe states that there are at least four insights of maritime culture with insight into the archipelago and local wisdom (1) insight about the environment; (2) insights about the sea and its contents as open-closed space; (3) insights on marine ethnic diversity and Maritime culture; and (4) the concept of unity of the homeland and maritime nation of the archipelago [10].

Furthermore, maritimpolicy in a political and sustainable way should pay attention to traditional ecological knowledge and eco systems. He divided into five things: (1) there is rice in the field an fish in the waters; (2) where there is water there are fish; (3) the sea begins in the mountains; (4) the wealth of the sea belongs to the dead, the living and those yet to be born; and (5) our Struggle is for the future: ours and that of the fish. Thus the maritime development policy should be based on local wisdom, culture, economy and ecosystem [11].

The Government has established sustainable development plans to achieve Sustainable Development Goals (SDGs) on marine resource midwives (1) to prevent and significantly reduce all types of marine pollution; (2) to manage and protect marine and coastal ecosystems sustainably to avoid excessive adverse impacts; and (3) arrange for non-excessive harvesting, illegal fishing and destructive fishing practices [12].

Currently, the production of the fisheries sector is not as good as the terrestrial fisheries in East Java. Therefore, inter-sectoral linkages are necessary in order to encourage investment and strengthen the economic base [13]. This will be more strategic if supported by a good port infrastructure. The port sector strongly supports the maritime industry's import export economy. This is reflected in the forward linkage value tends to be greater than the backward linkage value [14].

The novelty in this study is to assess the role of the maritime economy by juxtaposing the role of government in strengthening the maritime sector through regulation of laws and governmental affairs.

II. RESEARCH METHOD

A. Data

The data used in this research is Input-Output (IO) data in 2010 and 2015. The data is obtained directly from the Central Statistics Agency (BPS) of East Java. Other data used in supporting this research are the laws and government regulations relating to fisheries and the management of fisheries resources in a sustainable way. Legislation data is used to compare with IO estimates.

B. Method

This research uses Input-Output (IO) analysis to assess and evaluate the role of maritime economy in East Java-Indonesia. IO has 3 basic assumptions: (1) homogeneity; (2) proportionality; and (3) additivity [15,16]. The advantage of the IO method is its ability to assess changes in final demand

in the event of economic changes and the ability to tune the economic performance in the short and medium term. In general the equation can be formulated as follows;

$$\begin{aligned} x_{11} + x_{12} + x_{13} + F_1 &= X_1 + M_1 \\ x_{21} + x_{22} + x_{23} + F_2 &= X_2 + M_2 \end{aligned} \quad (1)$$

Equation (1) shows the number of inter request added to the final request equal to the amount of output plus the import. Equation (1) can be simplified to be

$$X_1 = \sum_{j=1} x_{1j} + F_1 - M_1 \quad (2)$$

If the equation is based on a column, then it can be written,

$$\begin{aligned} x_{11} + x_{21} + x_{31} + V_1 &= X_1 \\ x_{12} + x_{22} + x_{32} + V_2 &= X_2 \end{aligned} \quad (3)$$

Equation (3) can be simplified to be

$$\sum_{j=1} x_{ij} + V_j = X_j \quad (4)$$

x_{ij} : The number of i-sector outputs used as the j sector input

F_i : Final demand for sector i

X_i : Total output of sector i

M_i : Import production i

V_j : Primer input sector j

X_j : Total input sector j

By using the algebraic equation, combining equation 4 is obtained by a new equation ie

$$\sum_{i=1} F_i - \sum_{i=1} M_i = \sum_{i=1} V_j \quad (5)$$

C. Leontif Matrix

Furthermore, the identity matrix is reduced by the coefficient value through the inverse matrix. This is a fundamental and amazing finding of an economist who is Leontif, so it is commonly referred to as Leontief matrix. Can be written;

$$B = (I - A)^{-1} \quad (6)$$

III. RESULT AND DISCUSSION

This research studies about the influence and role of maritime sector on the performance of economic development in East Java, especially in the period 2010-2015 in East Java, Indonesia. Further, a closer look at how the government's efforts to regulate the maritime sector play a role in strengthening the strategic sector in the East Java region of Indonesia, which is environmentally sound and sustainable. There are four sectors related to the maritime economy in the input-output table (IO) of 2010 and 2015, namely the marine fish sector and marine fishery products, the terrestrial fish sector and the fishery products, the processing and preservation of fish and marine biota, and the transportation sector Sea. The results of maritime sector role analysis in the period 2010-2015 seen from the side of backward linkage (BL) and forward linkage (FL) presented in Table 1.

Table 1. The ~~maritime~~ Maritime sector Sector in 2010 and 2015 in East Java

| Sector | 2010 | | | | 2015 | | | |
|--------|------|------|------|------|------|------|------|------|
| | BL | Rank | FL | Rank | BL | Rank | FL | Rank |
| 1 | 1.27 | 73 | 1.22 | 50 | 1.25 | 94 | 1.24 | 58 |
| 2 | 1.54 | 28 | 1.40 | 33 | 1.36 | 75 | 1.72 | 27 |

| | | | | | | | | |
|---|------|----|------|----|------|----|------|----|
| 3 | 1.84 | 5 | 1.07 | 75 | 1.92 | 17 | 1.79 | 21 |
| 4 | 1.34 | 59 | 1.37 | 36 | 2.17 | 2 | 1.47 | 38 |

Source: Data IO BPS, 2010 and 2015, after being processed

(1) Sea Fish ~~And~~ Sea Fishery Products, (2) Land Fish and Fishery Products, (3) Processing and Preservation of Fish and Biota, and (4) Sea Transportation.

Table 1 shows that changes in the value of BL and FL in 2010 and 2015 for each maritime sector. These changes have implications for the rankings of each maritime sector in boosting regional economic performance. The land fishery sector shows a good change from the forward linkage side but decreases significantly from the backward linkage side. The rank and value of the terrestrial fishery sector declined significantly from 28th in 2010 to 75th place in 2015, where there was a change in the value of BL from 1.54 to 1.36.

Different from the production side where the sector of fisheries products showed an increase of FL value from 1.40 in 2010 to 1.72 in 2015. This also resulted in the ranking of the sector has increased from 33rd rank 2010 to rank 27 of 2015. This indicates that the increase of production from 634,279 tons in 2010 to 1,043,866 tons the year 2014 has an influence in the performance drivers of the region. This positive change indicates that government regulation boosted the maritime sector on land fisheries has an effect on increasing production.

The government seeks to increase the production of terrestrial fisheries by taking into account environmental and sustainability factors, especially those related to the extension of terrestrial aquaculture that potentially damages mangrove crops. Furthermore, the government advocates the use of environmentally friendly feed sources in order to reduce coastal and coastal pollution. Local and central government also increased the budget allocation in order to help the business of aquaculture through the provision of superior seeds, business assistance and empowerment of fishing communities.

The development of the fisheries sector is not as good as the sea fisheries sector. Marine fishery sector has not provided significant changes to the economic performance of East Java. Overall, this sector shows relatively stagnant influence. This sector tends to decrease its ranking from 2010-2015. Year 2010-2015, this sector is ranked 73rd and in year 2010 down to rank 94th Year 2015 based on backward linkage (BL).

Furthermore, the ranking of marine fish sector and marine fishery products based on forward linkage (FL) decreased (ranked 50th in year 2010 to rank 58th in year 2015). Although the value of forward linkage increased on the vulnerable of the year (1.22 in year 2010 to 1.24 in year 2015), but supply-side performance decreased when compared with other sectors. This is because other sectors produce relatively higher outputs at vulnerable years 2010-2015. But forward linkage changes are better than backward linkage where the forward linkage value is greater than backward linkage. This shows that the production of marine fish sector and marine fishery products is relatively increasing (although small) in the time frame of the year 2010-2015. There are several indications that cause (1) the production of marine fishery products shows an increasing trend in the vulnerable year 2010-2015, (2) East Java Province

is the largest contributor to the export value of fishery products nationally in 2014, where Tuna, Tongkol and Cakalang (TTC) of US \$-212 million, (3) the ministry of fisheries and maritime policy has an influence factor, particularly related to the Ministerial Regulation No. 42-/- PERMEN-KP-/-2014 and Law 31/2006 on fisheries.

Implementation of the law and regulations of the minister as an effort of the government to protect the sea to stay sustainable and prevent the occurrence of marine resource utilization that is not in accordance with environmental rules. The regulation restricts and prohibits the use of tank equipment that can damage the marine environment and regulate fishing lanes in every Fisheries Management Territory of the Republic of Indonesia (WPPNRI). Some of the things that the government's focus relates to the regulation are illegal, unregulated and unregistered (IUU) fishing. Furthermore, the regulation governs the sinking of vessels not in accordance with procedures. The regulation has not made a big change in terms of demand, although from the production side it shows a relatively small change. The marine fisheries sector shows an increase in production from 352,779 tons in 2010 to 399,371 in 2014. The government regulation that gives a big change is happening in the processing and fish preservation industry.

The fish processing industry sector has a strategic value because it can increase the added value and attract various other economic activities to grow faster. The processing and fish preservation sector is experiencing a vulnerable development in 2010-2015. The value of backward linkage and forward linkage on the vulnerable of the year has increased, although its ranking decreases from the backward linkage side. The downgrade of the sector does not mean that output and spread on other sectors go down but other sectors produce output or increase faster. This shows that other sectors are more able to accelerate and attract investment.

Furthermore, the processing industry and fish preservation have increased from the production or supply side quite well. This is reflected in the increase in the value of forward linkage from 1.07 in 2010 to 1.79 in 2015. The increase causes the fish processing industry ranked 21st in 2015, which was originally in the 75th position in 2010. This indicates that the fish processing industry in East Java is experiencing tremendous positive developments.

The processing and preservation of fish and biota produces good performance in terms of demand and production in the period 2010-2015. One of the things that encourage this sector is growing because of the government's commitment to encourage small and large-scale industrial sectors to grow in the country. Furthermore, the support of the government through the regulation of instruction of the President of the Republic of Indonesia Number 7 of 2016 on the Acceleration of Development of National Fishery Industry. This regulation is to limit the export of fish raw materials by prioritizing the export of finished or semi-finished materials. East Java benefited from a strategic position as an agglomeration area, which encouraged the demand for

processed fish to have a positive increase as well as trigger the fish processing industry began to grow.

The development of the maritime sector is strongly supported and influenced by sea transportation. East Java benefits from the port and as a national and international hub. Marine transportation industry plays an important role in accelerating the flow of goods between regions and internationally. Marine transportation has developed very rapidly in supporting the economy in East Java. This sector has a huge impact on other sectors and encourages investment and development of various sectors in East Java. This is reflected in the substantial increase in the value of BL in 1,345 in 2010 to 2,178 in 2015. However, the performance is not accompanied by inventories and increase in sea transport. This can be seen in the value of FL, which increased in a relatively small amount from 1.37 in 2010 to 1.47 in 2015. Development and planning in developing sea transportation is needed in strengthening the maritime sector. Development of technology and innovation is the time to realize in order to build marine transportation industry as a strategic sector.

D. Strategic Maritime Sector

The analysis shows that the strategic maritime sector in East Java in 2015 is the manufacturing sector. Previously, the strategic sector in the year 2010 is the sector of land fisheries and marine transportation sector. Changes in the structure of this sector indicate that the manufacturing sector has begun to develop, while the decline of the role of the land fishery sector as a strategic sector is influenced by the investment power and the relation on the sector has not changed. Meanwhile, the decline in the marine transportation sector is influenced by the decline of sea transport facilities. This is reflected in the BL scatter/BL index and sensitivity/FL index in Table 2.

Table 2. The ~~value-Value~~ of BL and FL ~~index-Index~~ of ~~maritime-Maritime sector-Sector~~ in East Java.

| Sector | 2010 | | 2015 | |
|--------|----------|----------|----------|----------|
| | BL Index | FL Index | BL Index | FL Index |
| 1 | 0.97 | 0.93 | 0.80 | 0.79 |
| 2 | 1.18 | 1.07 | 0.87 | 1.10 |
| 3 | 1.41 | 0.81 | 1.23 | 1.15 |
| 4 | 1.34 | 1.37 | 1.39 | 0.94 |

Source: Data IO BPS, 2010 and 2015, after being processed

(1)Sea Fish and Sea Fishery Products, (2) Land Fish and Fishery Products, (3) Processing and Preservation of Fish and Biota, and (4) Sea Transportation

The estimation results in Table 2 indicate that the role of the terrestrial fishery sector is on average decreasing from 2010 to 2015. In 2010 the terrestrial fisheries sector is a strategic sector. This is reflected in the value of the BL index and the FL index that exceeds 1. However, by 2015 the value of the sector BL index no longer exceeds 1. This indicates that the terrestrial sector is no longer an strategic sector on average compared to all sectors in Java East. This shift was driven by the driving force of investment and inter-sectoral linkages declining. This situation indicates that regulatory requirements may trigger related sectors to grow through increased investment. Regulation of business licensing and

extensification of the sector is very necessary to be the government's attention.

The land fish sector is increasing its supply because the production of terrestrial fish such as catfish, tilapia and carp and shrimp is growing every year, but the investment and relation of the sector has not changed significantly. Especially catfish that shows increased production and increasing export capacity to various countries. Looking closely at the increasing need of land fish in the larger European and Asian countries, the East Java government developed the upstream-downstream concept in developing the competitiveness of the terrestrial and terrestrial fish processing sectors. However, the development of supply side has not been followed by the development of investment and extensification of the sector.

Furthermore, the shift in the marine transportation sector as a strategic sector is on average due to the lack of sea transportation. This could be due to the lack of strong marine transportation industry in East Java. The transportation industry has become the priority of the government in supporting the maritime sector as a whole. This is very important in supporting the flow of goods between regions and international.

On the other hand, the marine fishery sector has not shown significant changes on average. This is reflected in the value of BL and FL index sector has not reached 1. This situation indicates that the marine fishery sector has not been able to push optimally from the demand side and supply side. The sector's linkages, investment and production value are still lower than the maritime sector and all sectors in East Java. The decline in the number of fishermen, especially small fishermen, could be the cause of low average output. Furthermore, the transition to regulatory change has not been fully able to encourage small-scale fishermen to play an active role in strengthening production in East Java. Although the production of marine fisheries sector 2010-2015 increased, but the output has not been able to exceed the value of other sector production in East Java. The capability of resources and venture capital, especially the small fishermen, which is still very low, affects the output of the sector.

The decrease in the average value of backward linkage indicates that the attractiveness of the land fisheries sector does not increase. The effect of the sector on other sectors has not changed much or is relatively constant. This may be due to (1) the sectors directly related to the land fisheries sector have not changed much, (2) the output of other sectors used by the land fishery sector has not changed much, and (3) the investment sector investment spending has not changed much. This situation causes the land-based fisheries sector to be no longer declared as a strategic sector by 2015, as it is still considered as a strategic sector in 2010.

The processing and fish preservation industry shows relatively better development compared to other maritime sectors. This is reflected in the larger scattering and sensitivity value 1. This situation indicates that the fish processing industry has significant added value as well as being a strategic sector. It gives a considerable influence on other sectors and economy of East Java.

Large, medium and small industries and household industries have an important role in strengthening the fish processing industry. This will trigger a more positive increase in trade in industrial products and stronger inter-sector linkages. Local and central governments need to pay more attention to this change so that the maritime processing industry development policy can be more advanced. Innovation and technology programs, especially in small industries and households need to be further improved.

IV. CONCLUSION

The analysis shows that the maritime sector in year 2010 and 2015 changed structure. The change resulted in changes the strategic sectors classified as strategic in 2010 to be non-strategic in 2015. The change is one of them influenced by policy regulation in the form of laws and government regulations.

The marine fisheries sector shows the ratings from 2010 to 2015 from both the forward linkage (FL) and backward linkage (BL) sides. This indicates that the seafood sector still has an average output value of less than other sectors, relative stagnant sector relationships, declining number of fishermen and limited market reach.

The land fishery sector is quite developed from the production side but relatively stagnant from the demand side. This is reflected in the value of BL decreased in 2015 to 133, where in 2010 amounted to 154. This indicates that sectorial linkages, investment attractiveness and economic activity expansion are still relatively stagnant. The sector is no longer a strategic sector due to the decline in the average value of BL in the Year 2015. But different from the supply side where production sector showed a significant increase where the value of FL increased from 1.40 in 2010 increased to 172 in 2015. Ranking sector is also ~~increasing~~ increasing from 33 to 27 in 2015.

Positive and significant changes are experienced by the processing and preservation industries and marine biota. This sector experienced an increase in the value of BL and FL in 2015. Although the average rating decreased from the BL side, the average value of BL still exceeds 1. This shows the fishery processing industry sector is classified as the strategic sector on average. This indicates that the maritime industry (1) the output of the maritime sector has been much processed first before it reaches the final demand; (2) the consumption of the community more in the processed industry; (3) the fishery product is processed prior to export; and (4) Market and (5) possess a wider range of investments; and (6) stronger sector linkages. Unlike the maritime transport sector, the sector has decreased from the supply side, where the value of FL decreased. However, the BL value has increased significantly so that the sector is in second position. The maritime sector is no longer a strategic sector in 2015 due to the declining value of FL on average.

Furthermore, the active role of the government is very strategic in preserving natural resources through the regulation of ministerial laws and regulations. Ministerial Regulation and Law No. 45 2009 on fisheries have a very big role in maintaining the utilization of marine resources sustainably.

Furthermore, Ministerial Regulation No. 42/PERMEN-KP/2014 plays a role in preventing the processing of marine resources that are not environmentally friendly.

This study needs to focus more on estimating the impact of regulatory changes and government policies on marine and fisheries sector and regional development. A relevant research methods to estimate the impact are Computable General Equilibrium (CGI) and simultaneous regression methods using panel data and time series.

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