

Publications Catalogue 2025

April — March
2024 — 2025



The Economic Research Institute for ASEAN and East Asia (ERIA) publishes a diverse range of materials – including books, research reports, discussion papers, and policy briefs – to disseminate its research findings and policy recommendations. These publications cover various topics, focusing on deepening economic integration, narrowing development gaps, and sustainable development, which are the three pillars underpinning ERIA's research agenda. Additionally, ERIA is actively engaged in energy-related research and has been conducting research on healthcare, the environment, and agriculture for the past 5 years.

During fiscal year (FY) 2024, ERIA played an active role in supporting the Lao People's Democratic Republic's chairmanship of the Association of Southeast Asian Nations (ASEAN). It published numerous reports, policy briefs, and discussion papers exploring the implications of various aspects of the economy, such as trade, investment, fiscal policy, energy, and healthcare. ERIA also collaborated with leading global publishers, co-publishing books with Routledge and Springer. ERIA released four books during this period, including the *SME Policy Index: ASEAN 2024 – Enabling Sustainable Growth and Digitalisation*, on which ERIA worked closely with the Organisation for Economic Co-operation and Development (OECD) and the ASEAN Secretariat. As a deliverable to the ASEAN chairmanship in 2024, ERIA published the *Energy Security White Paper: Policy Directions for Inclusive and Sustainable Development for Lao PDR and the Implications for ASEAN*. This was followed by the launch of a book titled *Further ASEAN–China Cooperation for Joint Prosperity: Envisioning ACFTA 3.0 in the Digital Era*. It also published a further longitudinal study under the healthcare topic on *Ageing and Health in the Philippines: Wave 2*, covering data from the coronavirus disease (COVID-19) in 2019.

In FY2024 alone, ERIA published four books, 37 research project reports, 39 discussion papers, and 18 policy briefs, highlighting its commitment to generating valuable insights and recommendations for the region.

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Books



Policy Briefs

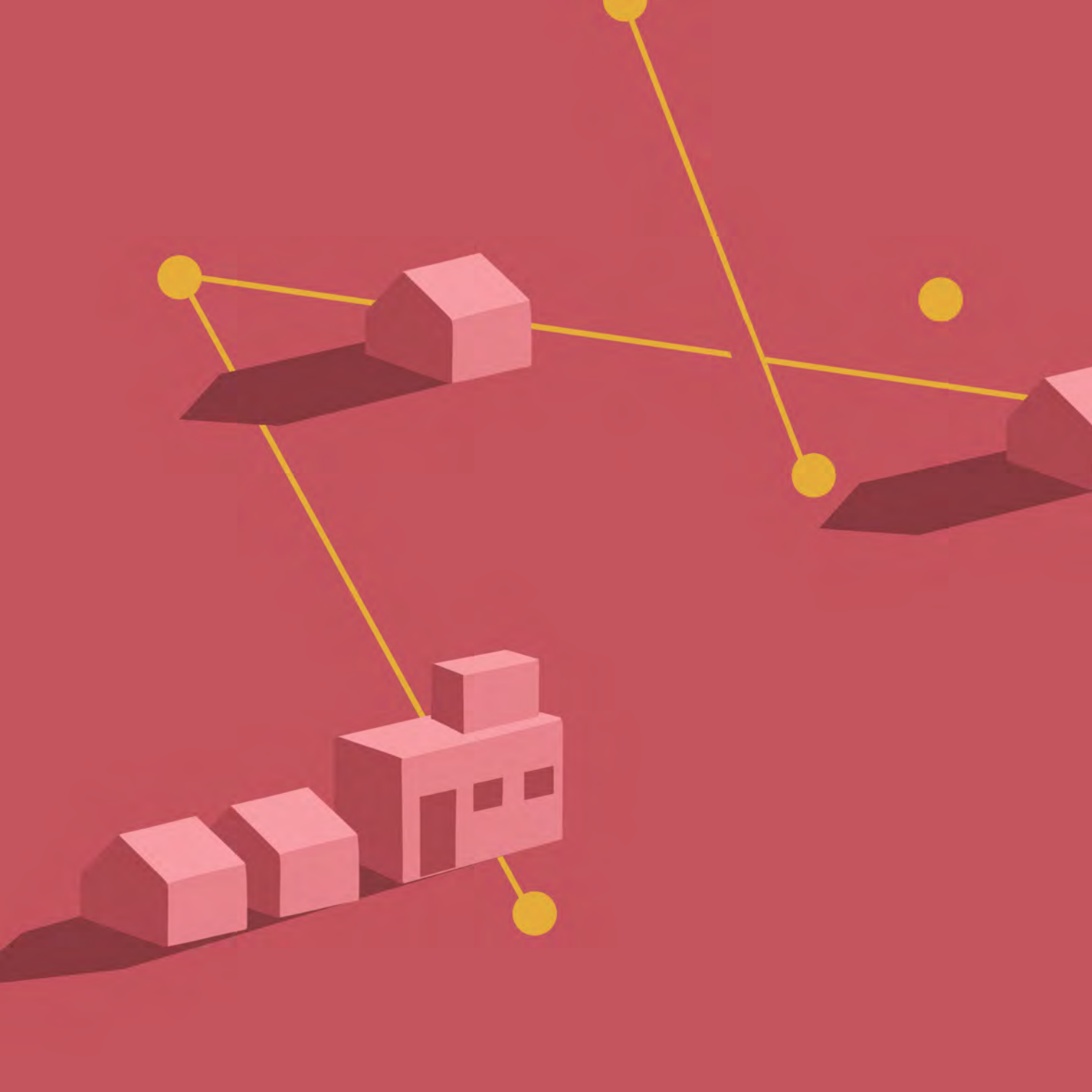


Research Project
Reports



Discussion
Papers





Connectivity

1

Further ASEAN-China Cooperation for Joint Prosperity: Envisioning ACFTA 3.0 in the Digital Era

Edited by Lurong Chen and Aladdin D Rillo

ASEAN–China relations play a pivotal role in shaping the future of the Asian economy. This ERIA report delves into the challenges arising from the evolution of the digital economy, the restructuring of Global Value Chains (GVCs), and Asia’s transition to a green economy, while envisioning the emergence of ASEAN–China Free Trade Area 3.0.

Within these pages, regional experts offer insights into the primary trends reshaping the global landscape. Building upon these observations, they present key policy recommendations that should be on policymakers’ radar when undertaking the task of upgrading the existing ACFTA. Notably, these policy suggestions hold relevance beyond ASEAN–China relations and are equally applicable to other ASEAN Free Trade Agreement negotiations.





Empowering Micro Businesses in Southeast Asia: Addressing Challenges and Harnessing Opportunities for ASEAN Economic Integration

ERIA Policy Brief, 2024-03

By Haris Zuan, Muhammad Faliq Abd Razak,
and Intan Murnira Ramli

Micro, small, and medium-sized enterprises (MSMEs) form the backbone of Southeast Asia's private sector, with microbusinesses comprising a significant majority. However, many operate informally, posing challenges for state recognition and assistance, particularly when youth manage these enterprises. More available data are needed to prioritise microbusinesses within economic policy. Nonetheless, microenterprises stand to benefit significantly from the region's robust digital, transportation, and cultural connectivity, making enhancements in these areas crucial for their success. To address these challenges, policy recommendations focus on empowering youth in the micro-economy through digital inclusion initiatives and greater participation in decision-making processes. Additionally, enhancing cross-border payment systems is essential for promoting innovation and digitalisation in payment systems. Standard harmonisation, the adoption of shared data frameworks, and regulatory frameworks are necessary for facilitating faster cross-border transactions and minimising disruptions in payment systems.

India-ASEAN Cooperation: Pilot Study on Digital Public Infrastructure Collaboration

ERIA Research Project Report FY2024, No. 21
Edited by ERIA



At the 21st ASEAN–India Summit held in Vientiane, Lao PDR, on 10 October 2024, India and ASEAN issued the ‘ASEAN–India Joint Statement on Advancing Digital Transformation.’ This statement sets the foundation for cooperation between India and ASEAN in building Digital Public Infrastructure (DPI), aimed at deeper economic and social integration as well as capacity building. During the ASEAN–India Summit in Jakarta on 7 September 2023, Indian Prime Minister Narendra Modi highlighted the importance of digital connectivity as a key pillar of ASEAN–India connectivity.

This study addresses the digital aspect of ASEAN–India connectivity, focusing on the development of a Digital Architecture that enables businesses and social activities between India and ASEAN to operate more efficiently, drive innovation, and respond to evolving customer demands in the digital and fintech sectors.

India’s DPI is supported by a range of government, regulatory, market, and civil society initiatives. Key components include Aadhaar, a biometric identity system with 1.38 billion users; the Jan-Dhan Scheme, which has onboarded over 500 million bank accounts and holds US\$24 billion in deposits; the Unified Payments Interface (UPI), facilitating over 12 billion monthly transactions; and the Direct Benefits Transfers (DBT) programme, delivering over US\$427 billion in cash and in-kind benefits, saving US\$42 billion in the past decade. These initiatives have advanced financial inclusion, credit access, insurance penetration, and economic growth in India.

This report explores the DPI ecosystem in India and ASEAN, providing strategic recommendations for implementing DPI to support ASEAN’s digital transformation efforts.





Education, Training, and Human

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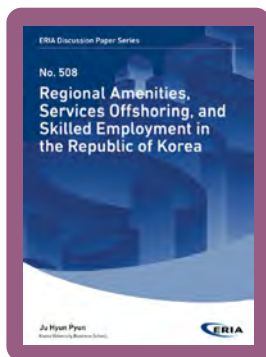


Patent Information Utilisation to Promote Innovation in the ASEAN Region

ERIA Research Project Report FY2024, No. 01

By Yoshitoshi Tanaka

Patent information is required for prior art research when applying for a patent as well as technology prediction, policy planning, corporate management strategies, corporate value evaluations, and research theme setting. This project seeks to understand the needs of Association of Southeast Asian Nations (ASEAN) Member States (AMS) in relation to patent information searches and construction of national patent information databases and to create and to provide education and training support that meets these needs. A survey of intellectual property offices (IPOs), universities, private companies, and law firms in each AMS was undertaken as well as an analysis of the current status of national patent information search systems. Results then helped shape patent information utilisation workshops and invention business contests in AMS to support practical education and training. The survey found that only 4 AMS are building their own patent information databases; patent searches are instead being conducted using global or commercial databases. The workshops and contests under this project thus helped promote patent information searching education, and many participants expressed expectations for future project activities.



Regional Amenities, Services Offshoring, and Skilled Employment in the Republic of Korea

ERIA Discussion Paper 2024-01, No. 508

By Ju Hyun Pyun

This study empirically examines the effect of services offshoring and regional amenities on the composition of skilled employment for services firms. Analysing Korean firm-level data spanning from 2006 to 2019, we find that services offshoring, characterised by the import of services intermediate inputs, correlates with an increase in the proportion of skilled workers within firms.

Additionally, the effects of this shift are nuanced based on different skill levels: services offshoring leads to an increase in the share of permanent headquarters workers to total workers. However, it does not affect the share of high-end skilled workers, such as headquarters' share of management and research and development (R&D) workers. Moreover, regional amenities promote the positive effect of services offshoring on permanent headquarters workers' shares. Lastly, the positive effect of offshoring on demand for high-end skilled workers in headquarters is significantly greater for firms with higher R&D intensity.



The COVID-19 Pandemic, Structural Transformation, and Training Programme Outcomes in Indonesia

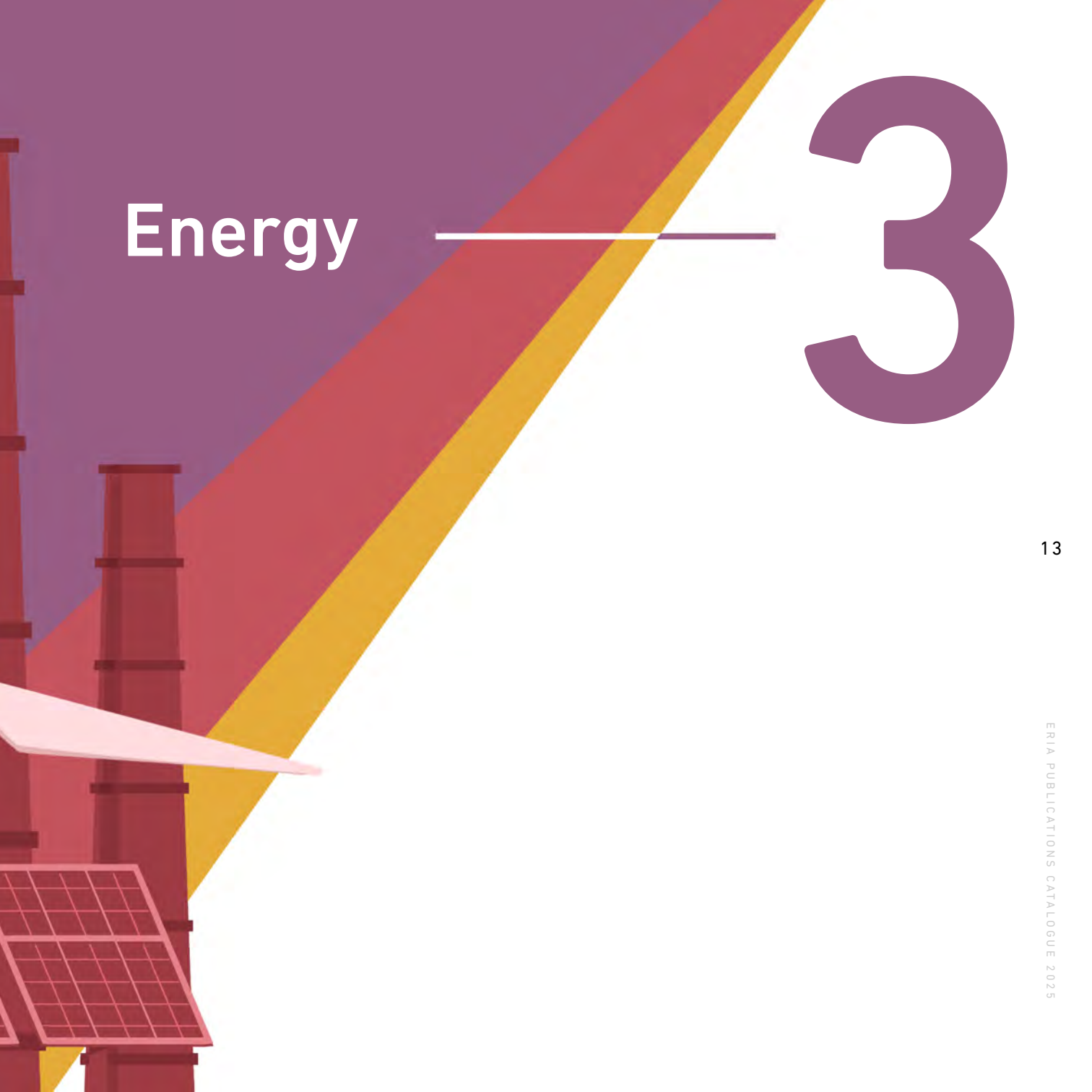
ERIA Discussion Paper 2024-15, No. 522

By Widdi Mugijayani, Titik Anas, Erizqa Mahardhika, and Yolanda Orient

The Government of Indonesia introduced Program Kartu Prakerja to develop workforce competencies, increase workforce productivity and competitiveness, and develop entrepreneurship in the country. The programme also responded to the COVID-19 pandemic-induced increase in unemployment and other labour market consequences. This study assessed the impact of Kartu Prakerja and internet access on the improvement of perceived competencies, productivity, competitiveness, and entrepreneurial skills. It used an online survey of 2,156 individuals and a combination of econometrics methods to evaluate the impact. It found that the programme significantly improved competencies, productivity, competitiveness, and entrepreneurship skills. Some personal characteristic variables – such as age, sex, and schooling – also affected optimal outcomes. Since the programme was conducted online during the pandemic, internet access – proxied by the number of telecommunications towers in each district – was found to have played an important role. Through better internet access, competencies, productivity, and competitiveness can be improved. Thus, the government should ensure that all regions in Indonesia have good internet access and other relevant infrastructure.







Energy

3

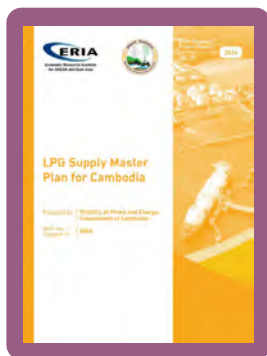


Energy Security White Paper: Policy Direction for Inclusive and Sustainable Development for Lao PDR

Edited by Han Phoumin and Anousak Phongsavath

The Energy Security White Paper outlines broad policy directions tailored to various energy systems, drawing from evidence-based research conducted by energy experts and incorporating input from a wide range of stakeholders. By analysing the entire energy system of Lao PDR in the context of its neighbouring countries, key energy security issues were identified, including fossil fuel import dependency, energy efficiency, power grid connectivity, power systems, transportation (including the adoption of electric vehicles), carbon credits and mechanisms, carbon markets, regional and international cooperation for innovative technology transfer, financing sustainable energy infrastructure, and addressing knowledge gaps.

A Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis was employed to delve into the specific opportunities and challenges, such as establishing energy security mechanisms, scaling up renewable energy penetration, introducing electric vehicles and hydrogen fuel, and developing the carbon market. The White Paper aims to open new avenues for developing detailed policies that encourage investment in clean technologies and the adoption of renewable resources. Additionally, it calls for collaboration from all stakeholders in policy design and implementation at all levels.



LPG Supply Master Plan for Cambodia

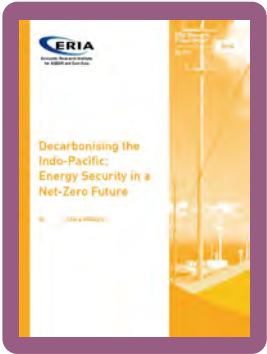
ERIA Research Project Report FY2024, No. 02

Edited by Ministry of Mines and Energy, Government of Cambodia, and ERIA

LPG demand in Cambodia has been increasing rapidly over the past 20 years. One reason is the remarkable increase in LPG use for road transport, particularly in major cities such as Phnom Penh, due to the explosive rise in the number of three-wheel tuk-tuks, known as Pas-APP. These vehicles, produced in India, are imported into Cambodia. Additionally, LPG use in residential and commercial sectors has significantly increased, shifting from biomass such as fuelwood to LPG due to rising income levels. While LPG demand is currently concentrated in urban areas, it is expected to penetrate rural areas in the future.

According to this report, Cambodian LPG demand will increase 3.6 times from 2021 to 2040 across the entire country. Therefore, this study analysed whether the current LPG delivery network will be sustainable in the future. Currently, there are four major LPG import points: Sihanoukville (receiving LPG from Singapore), Phnom Penh (via the Mekong River), and the borders with Viet Nam and Thailand (land transport). The Viet Nam border is the dominant import route (65%), followed by Sihanoukville (23%).

This study sought to identify an optimal LPG transport network (i.e. cost-minimised) from these four major import points to the capital city of each province by 2040, using the Linear Programming tool. After the LP calculation, several policy implications were derived to inform the General Department of Petroleum, Ministry of Mines and Energy, Cambodia.



Decarbonising the Indo-Pacific: Energy Security in a Net-Zero Future

ERIA Research Project Report FY2024, No. 05
By Clara Gillispie

Decarbonising the Indo-Pacific’s energy systems is essential for setting the region on a more secure, sustainable, and advantageous development path. However, this transformation is anticipated to be challenging. The available resources, tools, and geospatial conditions for such an undertaking can vary dramatically by sector and country, making regional cooperation crucial for translating ambitions into viable actions.

This report examines the prospects for decarbonising the Indo-Pacific’s energy systems. Chapter 2 provides an overview of the current state of the region’s energy systems. Chapter 3 explores potential pathways to carbon neutrality. Chapter 4 identifies the tools that can help decision-makers implement a preferred pathway. Chapter 5 discusses the critical role of international cooperation in these efforts. Finally, the report concludes with recommendations for the way forward.



Study on the Possibility of Promoting Quantitative Evaluation Indicators for Strengthening Energy Resilience in the East Asia Region

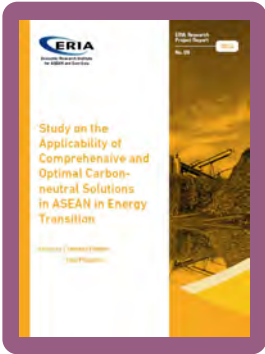
ERIA Research Project Report FY2024, No. 06

By Kentaro Hayashi, Akihiro Kimura, and Hiroki Kudo

In this project, the prototype quantitative Energy Resilience Score (ERS) model was used to conduct an empirical energy resilience assessment. The results of this assessment, along with international efforts to strengthen energy resilience, were shared and discussed at workshops held in three countries. This report provides an overview of international efforts to strengthen energy resilience, highlighting APEC's initiatives for energy resiliency enhancement and the content of the Energy Resiliency Principles and related guidelines.

APEC's principles and guidelines emphasise the importance of evaluating indicators of energy resilience. This report includes a review of similar indicators and describes the concept and evaluation of the prototype ERS model. It concludes with considerations for future work regarding the use of the ERS.

To increase the availability of data collection for ERS analysis, it is necessary to improve understanding of the content and significance of the ERS, as well as its benefits to consumers. There is a need to accumulate empirical results using the ERS evaluation tool across many countries and regions. Additionally, it is essential to continuously create opportunities for sharing and improving understanding of the ERS through discussions amongst stakeholders.



Study on the Applicability of Comprehensive and Optimal Carbon-neutral Solutions in ASEAN in Energy Transition

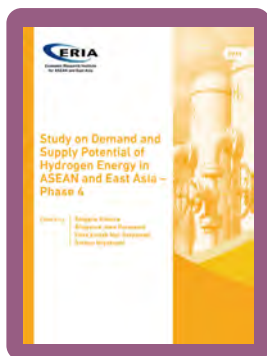
ERIA Research Project Report FY2024, No. 08

By Han Phoumin and Yamada Fumiko

ASEAN is committed to developing renewable energy sources as part of the energy transition to reduce emissions. However, it is observed that renewables alone may not be sufficient to support sustained growth and ensure a sustainable energy supply for further economic and social development. Therefore, it is important for ASEAN to pursue an ‘inclusive’ approach by involving all available fuels. To this end, accelerating the deployment of cleaner coal technologies (CCT) and carbon capture and utilisation (CCU) solutions through relevant policy formulation is crucial.

The preceding study examined the development and introduction of related technologies, many of which are proven, and some are still in the pipeline. Based on this information, the team identified technology options and tailored approaches for achieving carbon neutrality that align with each country’s specific circumstances in terms of applicability, availability, and affordability.

This study focuses on Indonesia for non-grid and grid stabilisation technologies to support mitigating possible grid fluctuations during the energy transition. It also looks at Thailand for biomass utilisation through gasification and fuel conversion processes, both of which have yet to receive due attention from policymakers. The proposed combination of technologies and recommended policy measures under the sub-studies on Indonesia and Thailand are expected to inspire ASEAN Member States to identify their own solutions for energy transition, either individually or collectively.



Study on Demand and Supply Potential of Hydrogen Energy in ASEAN and East Asia – Phase 4

ERIA Research Project Report FY2024, No. 09

Edited by Shigeru Kimura, Alloysius Joko Purwanto, Citra Endah Nur Setyawati, and Setsuo Miyakoshi

Hydrogen is a crucial fuel for achieving global carbon neutrality, and ERIA has been conducting hydrogen studies over the past 3 years, focusing on hydrogen demand and supply potential in the East Asia region. Building on previous studies, this report addresses the following five major topics:

1. **Economic and Social Impact:** This study assesses the economic and social impacts of establishing a hydrogen supply network in the East Asia region. It highlights the potential for significant investment in hydrogen infrastructure and substantial CO₂ emissions reductions.
2. **Hydrogen Production Efficiencies:** The report analyses the efficiencies of various hydrogen production technologies, including: reforming technology for natural gas; gasification technology for brown coal; and electrolysis technologies using renewable electricity, specifically: Alkaline Electrolysis Cells (ALK), Polymer Electrolyte Membrane Cells (PEM), and Solid Oxide Electrolysis Cells (SOEC). The analysis suggests that SOEC is expected to achieve higher production efficiency in the future.
3. **Cost Analysis of Liquid Hydrogen Transportation:** The study measures the unit cost of liquid hydrogen transportation (in US cents per km per unit of hydrogen) based on factors such as volume, distance, and the size of liquid hydrogen ships. The findings indicate that liquid hydrogen will have a cost advantage for long-distance and high-volume transport.

4. Optimal Hydrogen Supply Network: Using the Linear Programming method, the report identifies the optimal hydrogen supply network between hydrogen-exporting and hydrogen-importing countries in East Asia. This optimisation aims to minimise costs.
5. Computer Simulation of Hydrogen Transportation: The study conducts a computer simulation of hydrogen transportation routes between exporting and importing countries in East Asia, referring to the results obtained from the Linear Programming analysis.

Key results from the study include:

- A high economic impact is anticipated due to the large investments in the hydrogen supply network and significant CO₂ emissions reductions.
- SOEC is projected to have higher production efficiency in the future.
- Liquid hydrogen is more cost-effective for long-distance and large-volume transportation.
- The cost of hydrogen transport in East Asia is estimated to be around 0.4 US cents per Nm³ by 2040.

These findings underscore the potential benefits and challenges of developing a hydrogen economy in the East Asia region and provide a roadmap for future hydrogen infrastructure development.



Analysis on Energy Cost of LCET-CN based on ERIA Energy Outlook Models 2024

ERIA Research Project Report FY2024, No. 12

Edited by Shigeru Kimura and Citra Endah Nur Setyawati

The EAS Energy Outlook has been updated every 2 years, with the most recent update completed in 2021–22 and the next scheduled for 2023–24. Thus, in 2022–23, ERIA conducted the following analyses: a) Revision of the current LCET-CN (Low Carbon Energy Transition – Carbon Neutral) scenario, if possible, and b) Cost comparison analysis between BAU (Business as Usual) and LCET-CN scenarios to compare energy costs. The energy costs considered include: 1) Fuel costs, which encompass fossil fuels and hydrogen, 2) Power investment costs across all power sources, and 3) CCS (Carbon Capture and Storage) running costs.

Data on energy consumption, power generation per each power source, and the amount of CO₂ stored are derived from the EAS Energy Outlook 2022–23. In contrast, the prices of fossil fuels, unit capital costs of each power source, hydrogen prices, and CCS costs are based on other publications. It is assumed that the costs of power capital, hydrogen, and CCS will remain affordable until 2050 due to expected advancements in innovative technology. Consequently, the energy costs of the LCET-CN scenario are anticipated to be lower than those of the BAU scenario.

Developing Biofuel-Based Road Transport Industry: Market Penetration Assessment of Biodiesel (B100) and Bioethanol (E100) as Road Transport Fuels in Indonesia

ERIA Research Project Report FY2024, No. 13

By ERIA and Ministry of Industry of the Republic of Indonesia

Edited by Alloysius Joko Purwanto and Dian Lutfiana



Indonesia aims to transition to a more balanced energy mix structure, targeting a renewable share of 23% by 2025 and 31% by 2050. One strategic approach to meet these goals involves promoting the use of biofuels in the road transport sector. This study assesses the potential advancement of various biofuel blends in Indonesia, considering diverse economic and energy market scenarios, as well as the techno-economic development of different biofuel types and associated road vehicle propulsion technologies.

The study provides a framework for policy recommendations geared towards optimising the penetration level of biofuels up to 2040. Key principles within this framework include the consideration of economic and energy sector development, the imperative to achieve higher Euro standard levels in Indonesia's transport fuel, the pivotal role of financing strategies, and the ongoing progress of both biofuel and propulsion technology development.



Policies and Infrastructure Development for the Wider Penetration of xEVs in ASEAN Countries – Phase II

ERIA Research Project Report FY2024, No. 15

Edited by Alloysius Joko Purwanto, Naoko Doi, Shigeru Suehiro, Toshiya Okamura, Kazuhisa Takemura, Masami Iwai, Akira Matsumoto, Keita Katayama, and Takao Imanishi

The widespread adoption of electric vehicles (EVs) is seen as a crucial step in reducing oil dependence, enhancing local air quality, and combating climate change. Many countries worldwide, including those in ASEAN, have formulated plans and incentives to encourage the broader adoption of EVs.

This study offers a comprehensive scenario analysis of vehicle electrification, examining both the Fuel Cycle and Vehicle Cycle perspectives. It reveals that emissions associated with battery electric vehicles (BEVs) are minimal on a well-to-wheel basis but significant during the production process. Countries experiencing rapid car penetration tend to have a higher proportion of emissions from production processes, and the decarbonisation of the power generation mix influences emissions in both fuel and vehicle cycles.

The study underscores the influence of policies on charging infrastructure and power supply allocation on EV adoption in urban areas. Strategies to promote charging system deployment may include integrating charging space and power capacities into building codes, developing 'battery swapping' and 'battery as-a-service' models, and combining 'battery swapping' with 'battery leasing services.' These practices are crucial for fostering widespread EV adoption and ensuring a seamless transition to electric mobility.



Comprehensive CCUS Research Report: Storage, Value Chain, Policy & Regulation and Financing

ERIA Research Project Report FY2024, No. 16

By GCCSI and ERIA

Carbon Capture, Utilisation, and Storage (CCUS) is a crucial technology for achieving carbon neutrality in the Asia region by 2050–2070. While many CCUS projects are currently underway globally, most are focused on Enhanced Oil Recovery (EOR) and Enhanced Gas Recovery (EGR), primarily led by international oil companies (IOCs) such as BP (British Petroleum). Additionally, some Carbon Capture and Storage (CCS) projects are supported through public financing.

To transition CCS projects to a commercial basis in the Asia region, particularly in Southeast Asia, several key issues need to be addressed:

- Potential CO₂ storage capacity,
- Legal and policy frameworks,
- Financial frameworks, and
- The CO₂ value chain, which connects CO₂-emitting countries with CO₂-storing nations.
- The Economic Research Institute for ASEAN and East Asia (ERIA) commissioned the Global CCS Institute (GCCSI) to study these four critical areas, leveraging GCCSI's extensive experience and expertise in CCS and CCUS.

This report highlights:

- The significant CO₂ storage capacity in the ASEAN region,
- The need for appropriate and regionally harmonised CCUS regulations,
- The development of financing mechanisms, especially through public-private partnerships like the Joint Credit Mechanism (JCM), and
- The establishment of an institution to support cross-border CO₂ trade within the Asia region.



Global Strategies of International Oil Companies and Their Activities in Indonesia under Energy Transition

ERIA Research Project Report FY2024, No. 19

By Ryohei Masumoto

Edited by Shigeru Kimura

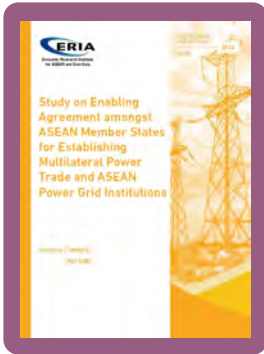
This report examines the activities of International Oil Companies (IOCs) in Indonesia.

Chapter 1 provides an overview of the global energy landscape, which serves as the background for this report. While the COP26 conference in 2021 accelerated the global momentum toward carbon neutrality, the 2022 energy crisis, triggered by the conflict in Ukraine, disrupted this progress.

Chapter 2 delves into the global strategies of IOCs as a precursor to understanding their activities in Indonesia. In response to the energy crisis, some European IOCs have cautiously increased their exploration and production (E&P) efforts.

Chapter 3 focuses on the oil and gas business activities of IOCs in Indonesia. Notably, Chevron, ConocoPhillips, and Shell have exited Indonesia's E&P sector, while companies like Eni and INPEX are actively pursuing new development projects.

Chapter 4 explores the key factors necessary to create a win-win relationship between the Indonesian government and IOCs.



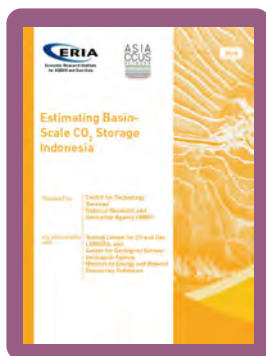
Study on Enabling Agreement amongst ASEAN Member States for Establishing Multilateral Power Trade and ASEAN Power Grid Institutions

ERIA Research Project Report FY2024, No. 23

Edited by Kei Sudo and Yanfei Li

ASEAN, one of the world's most dynamic economic regions, is experiencing a surge in energy demand. To meet this demand while reducing greenhouse gas emissions, significant expansion of the power system and major investments in renewable energy are essential. In response, the ASEAN Power Grid (APG) and multilateral power trading across it are being developed as a solution. ERIA's previous research highlights the need for two critical functions to facilitate the APG's progress: the APG Generation and Transmission Planning function (AGTP) and the APG Transmission System Operator function (ATSO).

This study examines a framework for establishing a high-level intergovernmental agreement (IGA) amongst ASEAN Member States to formalise the AGTP and ATSO functions. These functions are expected to play a crucial role in supporting and advancing multilateral power trade within the APG structure.



Estimating Basin Scale CO₂ Storage in Indonesia

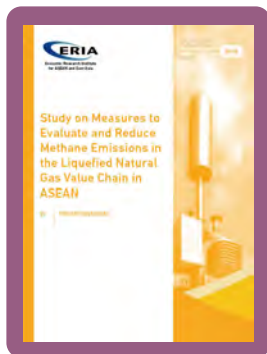
ERIA Research Project Report FY2024, No. 25

Edited by National Research and Innovation Agency (BRIN),
LEMIGAS Ministry of Energy and Mineral Resources Indonesia,
Shigeru Kimura

The International Energy Agency's Net Zero by 2050 Roadmap highlights the pivotal role of CCUS (Carbon Capture, Utilisation, and Storage) technologies in achieving global net-zero emissions. Worldwide plans project a substantial increase in CO₂ capture volumes, with estimates rising from 40 Mt CO₂ per year to 1.6 Gt CO₂ by 2030 and further expanding to 7.6 Gt CO₂ by 2050. In Southeast Asia, CCUS development is expected to grow from a limited base to 200 Mt or more by 2050, with around 95% of captured CO₂ stored in permanent geological repositories. Identifying and determining CO₂ storage resources are crucial for advancing CCUS.

Indonesia offers promising opportunities for CCUS deployment due to its vast sedimentary basins suitable for CO₂ storage, including oil and gas reservoirs and deep saline aquifers. This study assesses CO₂ storage potential across Indonesia's sedimentary basins, estimating storage resources in saline aquifers and hydrocarbon reservoirs. Using advanced methodologies, it ranks basins in terms of CO₂ storage suitability and integrates results into a GIS-based tool for visualisation.

The study reveals Indonesia's significant CO₂ storage potential, with estimated resources of 680.57 Gt in deep saline aquifers and 10.14 Gt in hydrocarbon fields. These resources are categorised as prospective and contingent storage resources, respectively, indicating substantial prospects for CCUS development. A GIS-based tool has been developed for visualising CO₂ storage resources, positioning Indonesia as a key player in the regional CCUS landscape.



Study on Measures to Evaluate and Reduce Methane Emissions in the Liquefied Natural Gas Value Chain in ASEAN

ERIA Research Project Report FY2024, No. 26

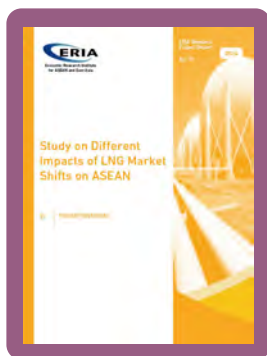
By Hiroshi Hashimoto

Methane emission management within the liquefied natural gas (LNG) value chain is receiving increasing attention due to international initiatives such as the Global Methane Pledge (GMP), the International Methane Emissions Observatory (IMEO) and Oil and Gas Methane Partnership 2.0 (OGMP2.0), and the Coalition for LNG Emission Abatement toward Net-Zero (CLEAN).

For the LNG industry to leverage this growing momentum, it must address methane emissions proactively and ensure greater transparency in providing information. While LNG offers numerous advantages – such as enhancing economic competitiveness, environmental sustainability, and energy security (the 3Es) – it is imperative to scientifically verify that methane emissions from the LNG industry remain minimal.

Ensuring that ‘clean gas’ is truly clean requires concerted efforts from both companies and regulatory authorities. By adopting transparent practices and stringent verification processes, the LNG industry can reinforce its role in achieving global climate goals.

This research aims to develop a resilient strategy for addressing methane emissions in the ASEAN region, a critical player in the global natural gas industry, by aligning regional practices with international standards and promoting sustainable growth in the sector.



Study on Different Impacts of LNG Market Shifts on ASEAN

ERIA Research Project Report FY2024, No. 27

By Hiroshi Hashimoto

This study analyses recent developments in the volatile global liquefied natural gas (LNG) markets, focusing on major regions. It examines price fluctuations, their underlying causes, and the evolving dynamics of gas supply and demand in Southeast Asia, particularly in relation to economic growth and the impacts of the global energy crisis.

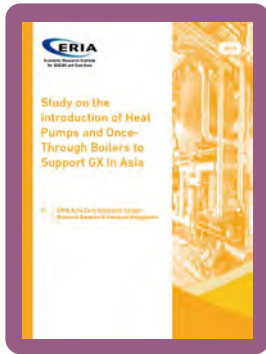
At the global level, the study explores multiple factors contributing to heightened price volatility. These include the European Union's substantial shift toward increased LNG imports, China's rapid expansion of its natural gas market, developments in India and neighbouring South Asian countries, short-term production outages and disruptions, and the rising supply of LNG from the United States.

Finally, the study proposes actionable measures and recommendations to stabilise the LNG market within the Association of Southeast Asian Nations (ASEAN) and the broader Asian region. These recommendations address both price stability and supply–demand balance to ensure sustainable energy development.

Study on the Introduction of Heat Pumps and Once-Through Boilers to Support GX in Asia

ERIA Research Project Report FY2024, No.29

Edited by ERIA Asia Zero Emission Center and Nomura Research Institute Singapore



Rapid economic growth in Asia – particularly in Viet Nam, Thailand, and India – has driven higher energy demand and carbon emissions, underscoring the need for sustainable energy solutions. Heat pumps and once-through boilers are efficient technologies with significant potential to reduce energy use and carbon emissions in industrial sectors. Despite their benefits, adoption is limited due to high upfront costs, lack of awareness, technical challenges, and insufficient policy support. To overcome these barriers, the report recommends five strategies: financial schemes like leasing options, awareness campaigns, technical training, policy support to create standards, and increased collaboration amongst stakeholders. We believe that by integrating these technologies into national and regional energy strategies, these countries can advance towards carbon neutrality, reduce their environmental impact, and set a global example for sustainable development.



Analysis of the Water-Energy-Food Nexus for Sustainable Biomass Utilisation for Fuel, Fibre, and Food in Selected EAS Countries - Phase I (2023–2024) Report

ERIA Research Project Report FY2024, No.30

Edited by Ruth Anne Gonocruz, Yuki Kudoh, and Venkatachalam Anbumozhi

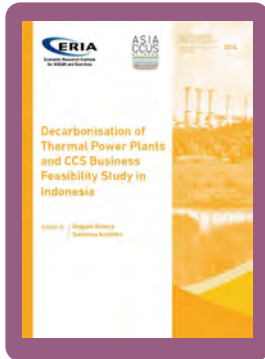
Biomass-derived fuels are emerging as a significant alternative to fossil fuels, aiding East Asia Summit (EAS) member countries in achieving their Net Zero economy goals. However, the sustainability and profitability of biomass production and its conversion into transport fuels rely heavily on government support and subsidies. Governments are making various regulatory efforts to maximise the benefits of biomass while minimising its negative impacts on food, water, and energy security, land use, and climate change. As such, evaluating the Water-Energy-Food-Land-Climate (WEFLC) Nexus is essential to ensure the sustainable use of biomass feedstocks.

This report presents a meta-policy analysis to ensure effective implementation of WEFLC initiatives in EAS countries. Resolving conflicting policies, such as those surrounding land-use regulations and bio-energy production targets, is crucial for integrated and sustainable outcomes. Moreover, the report underscores the importance of improving data sharing and fostering collaborative planning amongst government agencies, the private sector, and other relevant organisations.

Decarbonisation of Thermal Power Plants and CCS Business Feasibility Study in Indonesia

ERIA Research Project Report FY2024, No.33

Edited by Shigeru Kimura and Soichiro Kunihiro



Indonesia aims to achieve carbon neutrality by 2060, even as it relies heavily on thermal power plants, which currently account for approximately 80% of its power generation. Decarbonising thermal power plants is crucial to meeting this goal. To balance stable electricity supply with economic growth, the application of decarbonisation technologies, such as Carbon Capture and Storage (CCS), could play a significant role in large-scale, long-term efforts – provided these technologies are feasible and widely applicable.

This study seeks to explore the potential for decarbonising Indonesia's thermal power plants through CCS by analysing the technical and commercial aspects of the entire CCS value chain. Specifically, it examines a real coal-fired power plant and a potential CO₂ storage site in Indonesia, focusing on two CO₂ transport scenarios: liquefied CO₂ vessels and CO₂ pipelines.

While the challenges of long-distance transport and operational feasibility across the value chain remain significant, the study found that transporting CO₂ via liquefied CO₂ vessels is preferable for long distances and large-scale CO₂ volumes. However, the estimated costs of implementing the complete CCS value chain remain a critical concern, making it challenging to manage and gain acceptance in Indonesia under current conditions.

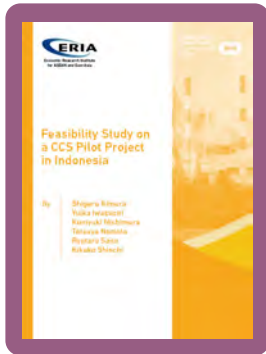
Further measures are necessary to address these challenges, including technological advancements, cost reduction, scaling up economic CCS applications, establishing a carbon pricing market, and leveraging incentives from international organisations such as AETI or carbon credit trading systems.

In the long term, sustainable power generation supported by effective decarbonisation solutions, like CCS, will be a key component of Indonesia's strategy to achieve carbon neutrality.

Feasibility Study on a CCS Pilot Project in Indonesia

ERIA Research Project Report FY2024, No.34

By Shigeru Kimura, Yuika Iwabuchi, Kuniyuki Nishimura, Tetsuya Nomoto, Ryotaro Saito, and Kikuko Shinchi



The Asia CCUS Network, led by ERIA, plans to pilot a carbon capture and storage (CCS) project in ASEAN post-2025, with the goal of achieving commercial operations by 2030. The study focuses on large-scale coal power plants in ASEAN with significant remaining operational life.

Cost analysis based on actual power stations in Indonesia estimates CCS costs at US\$71 per tonne, highlighting major financial challenges due to low carbon prices and regulatory gaps. To address these hurdles, the study recommends a consortium-based full-chain model for early CCS projects, transitioning to a hub-and-cluster model with dedicated services as the regulatory and financial framework matures.

To overcome financial barriers and accelerate CCS deployment, blended finance – combining international and private funding – is advised. This approach could facilitate investment while supporting regional GHG emissions reduction strategies.



Study on Accelerating Energy Technology Development in ASEAN: A Case Study of Thailand

ERIA Research Project Report FY2024, No. 36

By Masaru Kawachino and Kazuhiro Yaginuma

The dual imperatives of decarbonisation and energy security have accelerated the development of net-zero emissions technologies (NZ techs), driving countries to invest in research and development (R&D) of innovative solutions.

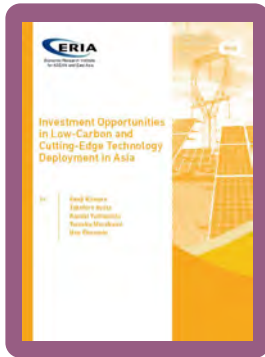
Against this backdrop, this study aims to map ASEAN countries' R&D efforts in developing NZ techs across key sectors, particularly power generation and transport. As a case study, Thailand is examined to illustrate the application of the R&D mapping approach, offering a comprehensive understanding of a country's technological landscape – including its strengths, weaknesses, opportunities, and risks.

By providing these insights, the study facilitates a more targeted analysis of potential regional and extraregional cooperation opportunities in advancing NZ tech development.

Investment Opportunities in Low-Carbon and Cutting-Edge Technology Deployment in Asia

ERIA Research Project Report FY2024, No.37

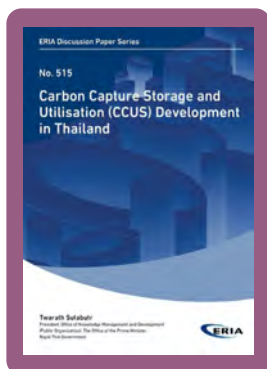
By Kenji Kimura, Takehiro Iwata, Kazuki Yamamoto,
Tomoko Murakami, and Han Phoumin



This study, titled 'Investment Opportunities in Low-Carbon, Cutting-Edge Technology Deployment in Asia', provides a comprehensive market-based analysis of low-carbon energy projects currently under development, as well as those that have been canceled, across ASEAN countries. The research includes an in-depth review of energy policies, investment promotion strategies, and environmental protection regulations in each ASEAN Member State. To ensure a robust and effective analysis, the study categorises key risks and opportunities associated with these projects.

The study explores a range of low-carbon energy technologies, including – but not limited to – solar photovoltaic (PV), wind energy, hydropower, biomass, and hydrogen. It emphasises the need for both governments and business entities to disclose and share information on all low-carbon energy projects, including those that have been suspended or frozen, in addition to successfully completed initiatives.

Furthermore, the research identifies several risk factors that vary depending on project type, location, and the maturity level of the technologies involved. These risks include financial feasibility, return on investment, technological challenges, and social and environmental considerations. Addressing these risks effectively will be critical in fostering a more transparent, investment-friendly, and resilient low-carbon energy market in ASEAN.



Carbon Capture Storage and Utilisation (CCUS) Development in Thailand

ERIA Discussion Paper 2024-08, No. 515

By Twarath Sutabutr

Thailand is a developing country with a growing economy, which has led to increased energy consumption and carbon emissions. To tackle this issue, the Royal Thai Government has implemented several policies and initiatives to reduce the country's carbon footprint and promote sustainable development. Carbon capture utilisation and storage (CCUS) has just become one of Thailand's policies to help push a low-carbon agenda and to enable net-zero emissions in 2065.

The Thailand National Committee on Climate Change Policy approved the establishment of the Greenhouse Gas Reduction Steering Committee, which initiated the technology applications for the country's first CCUS. The committee's mission is to accelerate the actions that can mitigate climate impacts by applying CCUS technology in the energy and industry sectors, leveraging the knowledge and experiences in the petroleum exploration and production industry. This first CCUS pilot project, originally initiated by a team in the PTT Group, is the Thailand CCUS HUB Project. This paper summarises the conceptual design and actions required to start implementing the project.



Policy Recommendation to Achieve a Carbon-Neutral Economy: The Case of Corporate Governance and Carbon Performance in Malaysia's Smart Cities

ERIA Discussion Paper 2024-21, No. 528

By Siti Indati Mustapa, Noor Raida Abd Rahman,
Amar Hisham Jaaffar, Nor Salwati Othman,
and Syarifah Mardhiah Syed Salim

This study explores the role of corporate governance in carbon-intensive and non-carbon-intensive companies within Malaysian smart cities. The paper aims to understand the challenges and impacts of corporate governance on carbon and financial performance. In the first stage, carbon emissions data from 51 Bursa Malaysia-listed companies were analysed, revealing that corporate governance had no significant impact on carbon and financial performance. However, variations were noted in carbon-intensive industries. Liquidity emerged as a key factor positively affecting carbon performance, while firm size and market-to-book value were the main drivers of financial performance. In the second stage, a survey of 256 firms highlighted a high level of awareness regarding the significance of carbon reporting practices. Challenges included complexity regarding carbon reporting and knowledge limitations. The study advocates for the centralisation of carbon accounting standards, sharing best practices, and fostering of global collaboration to bolster effective climate action. These findings offer empirical evidence crucial for informing policymakers, companies, investors, and regulators alike. Future research could expand with larger samples, explore digital technology's role in smart cities, and compare carbon reporting practices globally.

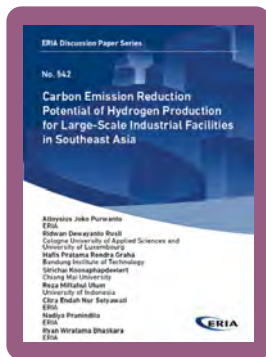


Securing Regional Solar Supply Chains: Determinants and Preparedness of the Northeastern Region of India and ASEAN

ERIA Discussion Paper 2024-30, No. 537

By Prabir De, Komal Biswal, and Venkatachalam Anbumozhi

Renewable energy contributes to the acceleration of the energy transition, supports global environmental mitigation, and helps meet sustainable development goals. Energy connectivity of India's Northeastern Region (NER) with neighbouring countries particularly ASEAN assumes critical importance for accelerating economic integration. NER can play a three-dimensional role as power producer, exporter, and transit provider provided a quadrangular approach to build energy linkages and promote integration is consciously put in place. To understand whether the NER states are capable enough to take forward the solar supply chain development and bolster the ASEAN-India engagements in solar energy sector, this study has designed a state-level index of solar supply chain development by factoring in seven parameters, namely, (i) economic situations, (ii) environmental factors, (iii) spread of connectivity, (iv) financial enabling conditions, (v) mobility, (vi) human development, and (vi) social cohesion, which directly or indirectly influence the solar supply chain development in India. The results show that a clean and decent environment is must for development of solar supply chain. In addition, the study suggests that there is a need to improve the solar supply chain capability in the NER to enhance the economic growth. Leveraging policy support and reinvigorating existing institutions and creating new ones are imperatives for predicting the solar supply chain in the NER. This indexing may help track the trends, allowing for more informed decision-making in securing regional solar supply chain.



Carbon Emission Reduction Potential of Hydrogen Production for Large-Scale Industrial Facilities in Southeast Asia

ERIA Discussion Paper 2024-35, No. 542

By Alloysius Joko Purwanto, Ridwan Dewayanto Rusli, Hafis Pratama Rendra Graha, Sirichai Koonaphapdeelert, Reza Miftahul Ulum, Citra Endah Nur Setyawati, Nadiya Pranindita, and Ryan Wiratama Bhaskara

Making use of hydrogen demand and supply forecasts reported by ERIA (2024) for the oil refining, ammonia, methanol, and steel industries in the Association of Southeast Asian Nations, this paper studies the carbon emission reduction potential of blue and green hydrogen for these large-scale industries until 2050. Future hydrogen supply and demand under the International Energy Agency's announced pledges scenario are examined for each of these four industrial sectors, the corresponding carbon emissions calculated, and their future carbon emission reduction potential estimated. The potential of ammonia fuels and methanol for e-fuels is also considered. Levelised cost of hydrogen estimates and various carbon price scenarios are studied to calculate the government subsidies required to help finance the transition from grey to green and blue hydrogen production in the four industrial sectors in Southeast Asia in the coming decades. The insights gained inform policy strategies for a future industrial hydrogen decarbonisation transition.



Technology List and Perspectives for Transition Finance in Asia: Inclusive List of Green and Transition Technologies

Version 2-1

By Sho Hayashi and Nadiya Pranindita

Investments in green or zero-emission initiatives will be essential for decarbonising Asian economies. Equally important, however, are investments in transition activities – those aimed at significantly reducing emissions from existing sources or baselines within a defined timeframe. Despite the importance of such activities, many financial institutions in Asia remain hesitant to fund them, largely due to the complex process of evaluating relevant technologies. To speed up financing for decarbonisation, institutions need clear standards and guidelines to ensure that financial flows align with pathways towards net-zero CO₂ emissions.

To address this, ERIA's Asia Zero Emission Center has introduced the *Technology List and Perspectives for Transition Finance in Asia (TLP)*. This publication provides a comprehensive inventory of essential technologies for decarbonisation in Asia and assesses the potential of various transition technologies based on key criteria, including emissions impact, affordability, and reliability/maturity.



Global Governance and Multilateralism

4



Enhancing Cambodia's Growth through Economic Integration

ERIA Research Project Report FY2024, No. 01

By Rashesh Shrestha, Dionisius A. Narjoko, and Salvador Buban

This report is an outcome of ERIA's study conducted to examine how Cambodia can maximise the benefits of greater economic integration with key trade partners. Despite Cambodia's impressive economic growth over the past 2 decades, driven by international trade and investment and continuous reforms, the economy is not yet broad-based and relies on garment exports to the United States and the European Union. As reliance on a few sectors carries high risk, Cambodia must seek to diversify its export-oriented economic activities. FTAs with key trade partners can serve as vehicles for achieving Cambodia's economic objectives by fostering deeper trade relationships. Cambodia is pursuing further economic liberalisation and global integration on a bilateral basis with several countries. This study looks at the factors that Cambodia should consider as it embarks on undertaking free trade agreement (FTA) discussions. To maximise the benefits of FTAs, careful consideration must be given to their design and content. The report provides recommendations in this regard and discusses lessons learned from the impact of existing FTAs.

The study also focuses on India as a potential candidate for pursuing a trade agreement to illustrate factors and variables that must be taken into consideration. India's economic profile, its existing relationship with ASEAN, and its absence from the RCEP stand out as a strategic trade partner for Cambodia. Not only does India have a large market for Cambodia's exports, India's strengths in services and technology products could improve the

productivity of the Cambodian economy. Although Cambodia and India are connected through agreements like the ASEAN–India Free Trade Agreement (AIFTA) and Duty-Free Tariff Preference Facility, current trade between them is limited to a few sectors, resulting in the underutilisation of these facilities. A bilateral agreement with India, if designed well, could attract more Indian investment into Cambodia’s business operations and IT sector, enhancing the services sector and boosting opportunities for global value chain integration.

Branding Strategy in Cambodia

Phase 1: ERIA Research Project Report FY2024, No. 7a

Phase 2: ERIA Research Project Report FY2024, No. 7b

By Yugo Nagata



This project first examines the current IP system for branding in Cambodia through a survey of laws on trademarks, industrial design, and GI, including through current trends of registration, statistical data, and other published materials. If sufficient data were unavailable, information was obtained through inquiries to the Department of Intellectual Property Rights (DIPR), Ministry of Commerce (MOC) as well as the Department of Industrial Property (DIP), Ministry of Industry, Science, Technology and Innovation (MISTI).

Phase 1:

To adapt to evolving global markets and consumer preferences, effective branding strategies that leverage trademarks and designs are crucial for distinguishing products and attracting investment. The rise of e-commerce and C-to-C models post-pandemic has heightened the need for impactful branding. Analysing current practices and highlighting successful case studies is vital for fostering future economic growth. This Phase 1 final report provides a comprehensive explanation of Cambodia's current laws on Trademark and Geographical Indications (GI) protection and enforcement. It also examines Cambodia's entrepreneurial landscape, highlighting key sectors and the state of digital transformation (DX). Additionally, Phase 1 includes five case studies featuring local companies and entrepreneurs, focusing on their branding strategies to protect their brands and reputations in Cambodia. The remaining 25 companies will be featured in Phase 2 of the final report, forming an integral part of this project.

Phase 2:

This Final Report on 'Branding Strategy in Cambodia: Phase 2' continues the work initiated in 'Branding Strategy in Cambodia: Phase 1'. While Phase 1 focused on elucidating Cambodia's intellectual property systems and regulations pertaining to trademarks and geographical indications, including digital transformation, Phase 2 extends this research with detailed case studies of 25 distinguished companies and startups from Cambodia, each with unique branding strategies. This report examines how these companies utilise their branding, providing insights into the history of the brand, branding concepts, marketing aims, methods of branding, and the effectiveness of their strategies. This report concludes our comprehensive research on branding strategy in Cambodia with an in-depth analysis of the findings.

India-ASEAN Digital Cooperation: Assessing the Regulatory Ecology for Financial Technology Collaboration

ERIA Research Project Report FY2024, No. 22

Edited by ERIA



India has appointed the Economic Research Institute for ASEAN and East Asia (ERIA) as its Knowledge Partner for ASEAN–India relations. At the 21st ASEAN–India Summit, held in Vientiane, Lao PDR, on 10 October 2024, India and ASEAN issued the ‘ASEAN–India Joint Statement on Advancing Digital Transformation.’ This statement outlines a framework for cooperation in Digital Public Infrastructure (DPI), financial technology, and cybersecurity to promote broader economic and social integration and capacity building.

India’s robust DPI can be extended to the ASEAN region, enabling collaboration in financial markets and deepening economic cooperation. As digital technology increasingly drives market movements, investments, and cross-border financial flows, collaboration in fintech and technology exchange can greatly benefit both regions, particularly in terms of employment generation and wealth creation. India, with its rapidly growing fintech hubs, offers opportunities for ASEAN partners to leverage these advancements.

Regulatory approaches to financial technology amongst larger ASEAN economies differ significantly. This pilot study examines the existing infrastructure and regulatory policies in these economies, as well as in smaller economies like Cambodia, Lao PDR, Myanmar, and Timor-Leste, which require capacity building in technology, infrastructure, and institutional frameworks.

This report provides a baseline overview of regulatory ecosystems and infrastructure needs across selected digital finance sectors, including securities exchange, insurance, payments, and the capacity-building requirements of smaller ASEAN economies.



Branding Strategy in Lao PDR

ERIA Research Project Report FY2024, No. 31

By Lao Premier International Law Office Company

As part of ERIA's ongoing branding strategy research project, this study analyses branding strategies in Lao PDR, focusing on their connection with intellectual property (IP) protections, particularly trademarks and geographical indications (GIs). It provides a comprehensive review of Lao PDR's IP system, examining relevant laws, registration trends, and statistical data from the Department of Intellectual Property (DIP) within the Ministry of Industry and Commerce.

The report explores the significance, benefits, and methodologies of branding, identifying opportunities in key sectors such as agriculture, mining, energy, fintech, and traditional crafts. To offer actionable insights, the study includes case studies featuring local businesses, providing an in-depth look at current branding strategies and their implications for both local entrepreneurs and international markets.

Overall, this report highlights the critical role of branding strategies and IP protection in fostering economic growth and entrepreneurship in Lao PDR.

Branding Strategy in Thailand

ERIA Research Project Report FY2024, No. 32

By Pongsacha Chayapong



This research report, part of ERIA's branding strategy project series, examines the role of branding in driving economic growth in Thailand amid digitalisation and the post-COVID-19 era. Building on similar studies conducted in Cambodia, Indonesia, and Lao PDR, it explores the use of branding through intellectual property (IP) protection, with a focus on trademarks and geographical indications (GIs).

The report analyses Thailand's regulatory framework for IP enforcement, supported by statistical data from the Department of Intellectual Property and insights from interviews with leading entrepreneurs in the startup and GI sectors. It assesses how branding strategies can enhance entrepreneurial value, particularly in the digital age and global market expansion. Additionally, it evaluates Thailand's current IP regulations, providing a comprehensive perspective for ASEAN and global stakeholders, local entrepreneurs, and policymakers.

By highlighting the strategic use of IP, this research offers valuable insights into strengthening Thailand's startup ecosystem and broader economic development.



Branding Strategy in Indonesia

ERIA Research Project Report FY2024, No. 35

By Alfin Frans Nainggolan and Frizolla Putri

The intersection of intellectual property rights and economic development presents unique opportunities for Indonesia, particularly in leveraging its rich cultural heritage, natural resources, and digital transformation. This study, part of ERIA's Branding Strategy research series, explores how Indonesia can utilise branding to drive economic growth in the digital era and post-COVID-19 recovery.

The research examines the relationship between Indonesia's intellectual property (IP) regime and branding strategies, with a focus on trademarks and geographical indications (GIs). It provides a comprehensive analysis of relevant regulations and data from the Directorate General of Intellectual Property (DGIP) under the Ministry of Law and Human Rights (MOLHR). Through case studies and enterprise interviews, the study evaluates successful branding strategies and regulatory frameworks in key sectors.

The findings suggest that strategic branding, supported by strong IP protection, could significantly enhance Indonesia's economic competitiveness within ASEAN. This research contributes to both academic discourse and practical policy development, offering actionable recommendations to strengthen regional collaboration in Southeast Asia's dynamic market landscape.



Healthcare and Ageing Society

5

Ageing and Health in The Philippines: Wave 2

Edited by Grace T. Cruz, Christian Joy P. Cruz, and Yasuhiko Saito

Ageing and Health in the Philippines – Wave 2 is the second publication of the Longitudinal Study of Ageing and Health in the Philippines (LSAHP), the first nationally representative panel study focusing on Filipinos aged 60 and older. Funded by ERIA (the Economic Research Institute for ASEAN and East Asia) and conducted by the Demographic Research and Development Foundation, the study provides essential insights into the health, well-being, and socioeconomic conditions of older Filipinos.

This report examines both survivors and deceased respondents from the baseline survey, analysing key demographic, economic, and health indicators. It also delves into new topics, including nutrition, social infrastructure, adult mortality, caregiving roles, and access to healthcare before death.

The findings are a crucial resource for policymakers and programme developers aiming to enhance economic security, healthcare access, and support systems for older Filipinos. These insights are particularly significant as the Philippines faces a demographic shift toward an ageing society in the near future.





Development of a Coaching-based Guidebook to Enhance the Quality of Life of Parents of Persons with Developmental Disorders in Southeast Asia

ERIA Research Project Report FY2024, No. 10

Edited by Ryuhei Sano, Lynette Lee Corporal-Penman, Takuma Kato, and Asuka Nagatani

In Southeast Asia, the United Nations' call for disability-inclusive development faces challenges, including limited participation of individuals with disabilities and inadequate support for their organisations. This report focuses on parents of children with developmental disorders, whose unique struggles are often intensified by cultural and socioeconomic factors.

These parents experience isolation, emotional distress, and a lack of knowledge regarding care options. However, parent training, mentoring, and group coaching programmes are emerging as vital sources of support, empowering parents with essential skills and fostering a sense of community.

The newly developed 'Parent Training, Mentoring, and Coaching Guidebook' is a groundbreaking resource, equipping parents with valuable knowledge while enabling them to become mentors for others and access professional coaches to help them achieve a better quality of life. This comprehensive approach aims to enhance parenting skills and improve the quality of life for families affected by developmental disorders.

This report synthesises research findings and explores the goals, methods, and impacts of these programmes, offering crucial insights for parents, caregivers, educators, and policymakers in the ASEAN region.



Current Status and Issues of Healthcare Policies for Persons with Developmental Disorders in Southeast Asia

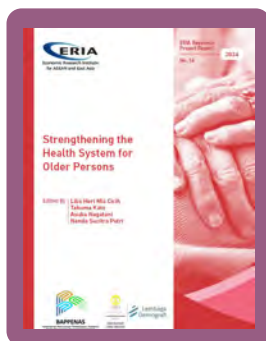
ERIA Research Project Report FY2024, No. 11

Edited by Ryuhei Sano, Takuma Kato, Asuka Nagatani, Rudi Sukandar, and Hersinta

Persons with developmental disorders and their parents often encounter numerous and overwhelming challenges in caring for themselves, their children, and other family members. These challenges usually result in adverse effects on their lives, including a lower quality of life, isolation, and a lack of knowledge in care planning.

The availability of policies related to developmental disorders, such as Autism Spectrum Disorder (ASD), Attention Deficit Hyperactivity Disorder (ADHD), and Learning Disabilities (LD), is recent and limited in scope in the ASEAN region. This report provides an analysis of the situation related to developmental disorders in the ASEAN region, which is needed to obtain a comprehensive understanding of the status of this topic.

Chapters in this report discuss important issues from the perspective of persons with developmental disorders and their families, including limited access to health services and education in rural areas, difficulties entering the job market, and the need for social protection and extensive support, especially for those entering adulthood. Based on a comparative study of policies related to developmental disorders in ASEAN countries and Japan, we propose some recommendations, including building more robust collaboration between ASEAN countries and Japan in the field of developmental disorders and exploring new initiatives. These can include community life care through group homes, facilitating work transition, and developing policies focusing on identifying lifelong needs and expanding education access to support parents and caregivers in caring for their children with developmental disorders.



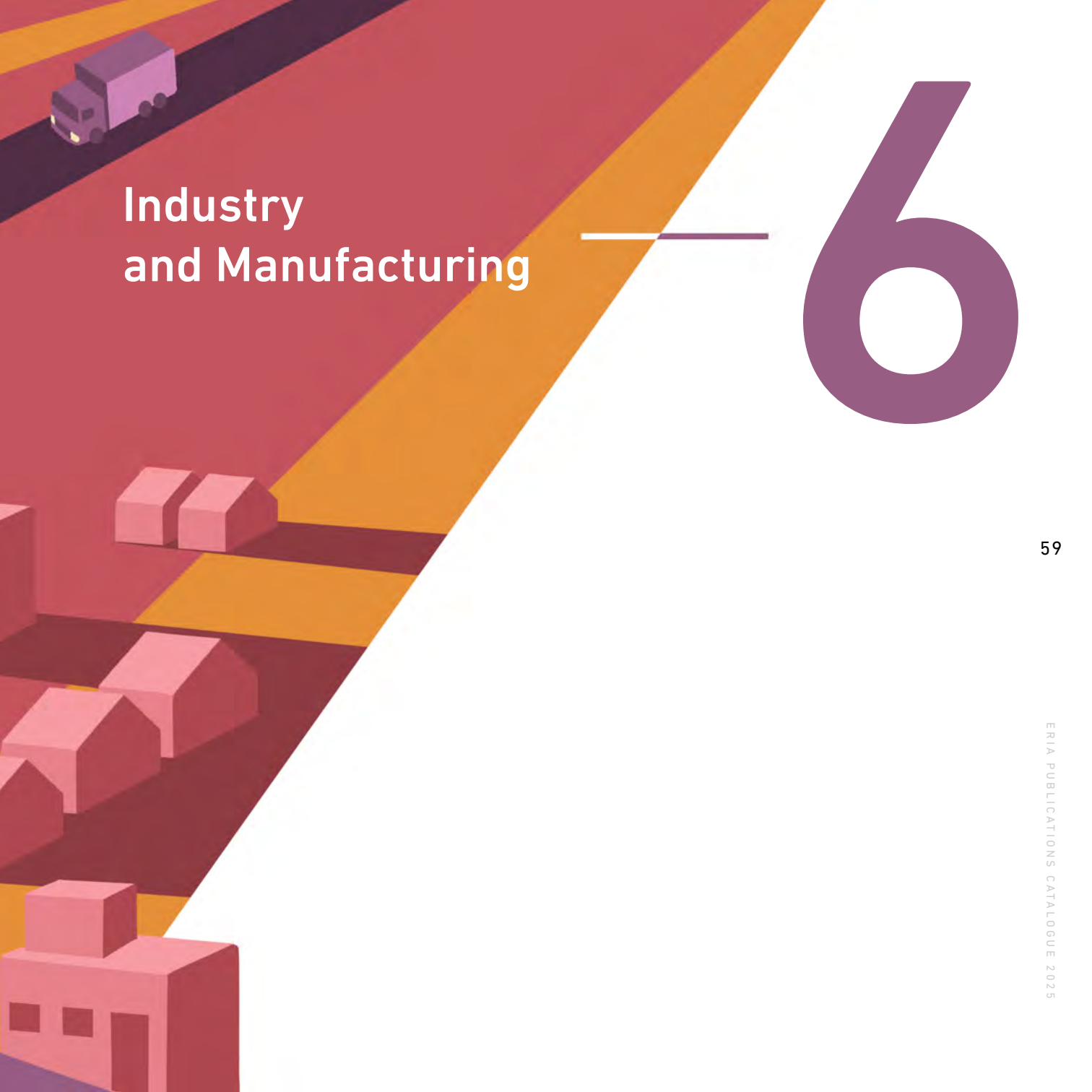
Strengthening the Health System for Older Persons

ERIA Research Project Report FY2024, No. 14

Edited by Lilis Heri Mis Cicih, Takuma Kato, Asuka Nagatani,
and Nanda Sucitra Putri

As the older population increases, there is a need to strengthen policies regarding healthy aging. This study aims to provide input for the preparation of the Background Study for the 2025–2029 National Medium Term Development Plan. This research uses mixed methods (quantitative and qualitative), with primary and secondary data sources. Five provinces were selected (one city and one district). Data was collected from Japan, Viet Nam, and Thailand. There are strategic issues related to improving the integrated health of older persons, namely facilities, services, human resources, financing, family and community participation, institutions, and integrated data. The recommendations are to increase: the number, quality, and distribution of health facilities and health human resources; health financing; family and community participation; revitalise and strengthen older persons' institutions, especially age-friendly service providers; health regulations; and the dissemination of health information at all levels of services. Strengthening the health system through improving health status and the quality of health services aims to increase life expectancy.





Industry and Manufacturing

6



The Impact of E-commerce Competition on New Product Entry in the Manufacturing Sector: Evidence from the Republic of Korea's Manufacturing Establishments

ERIA Discussion Paper 2024-03, No. 510

By Jung Hur

E-commerce has revolutionised the way firms and businesses operate and compete in the world economy. This paper examines the impact of e-commerce competition on new product entry in the manufacturing sector, using a unique dataset of the Republic of Korea's manufacturing establishments. Our empirical results suggest that in the era of e-commerce competition, only manufacturers with advanced technological capabilities can survive and create new products to overcome the competition. Moreover, the manufacturers that are able to create new products may be targeting the export markets. This study contributes to the broader literature on the relationship between competition and product innovation by examining how e-commerce participation promotes the creation of new products by manufacturers seeking to survive in a more competitive market.

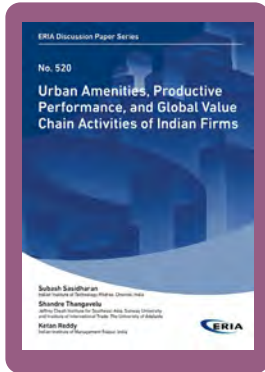


Servicification and Productivity of Manufacturing Enterprises in Cambodia

ERIA Discussion Paper 2024-07, No. 514

By Vutha Hing and Shandre Mugan Thangavelu

This paper examines the effects of servicification on productivity from the perspectives of service inputs (demand-side) and service outputs (supply-side) for firms in Cambodia. The empirical analysis adopts the firm-level data from the 2014 Inter-censal Economic Survey of Cambodia. The unique data contain a vast array of annual corporate information and allow us to differentiate between the share of service input to total inputs (our first proxy of servicification) and the share of service revenues to total output (another proxy of servicification). The empirical analysis examines the productivity effects of servicification controlling for firm heterogeneity, such as year of operation, foreign ownership, registration, female manager, and skill intensity.



Urban Amenities, Productive Performance, and Global Value Chain Activities of Indian Firms

ERIA Discussion Paper 2024-13, No. 520

By Subash Sasidharan, Shandre Thangavelu, and Ketan Reddy

In this study, we explore the impact of urban amenities and the global value chain (GVC) participation of Indian firms on their firm performance using firm-level data. The study uses micro-level data matching firms to urban amenities at the district level based on their district location. Using a panel data framework, we observe a positive relationship between urban amenities and the GVC participation of firms on their productivity performance. We also observe a positive impact of GVC participation on the productivity of firms, especially on their total factor productivity. In terms of channels, we observe the GVC impact through educational amenities on the productivity of the firms. This suggests education amenities increase the productive performance of GVC firms. We also observe that financial amenities tend to increase the productive performance of GVC firms. The results of the paper highlight the importance of urban amenities in affecting the productive performance of Indian firms in GVC activities.



Does Economic Policy Uncertainty Impact Firm GVC Participation? Microdata Evidence from India

ERIA Discussion Paper 2024-23, No. 530

By Ketan Reddy, Subash Sasidharan,
and Shandre Mugan Thangavelu

In this study, we examine the implications of economic policy uncertainty on global value chain (GVC) participation and the integration of Indian manufacturing firms using firm-level data. Using panel data from 2004 to 2021, we find that economic policy uncertainty (EPU) impedes GVC participation and firm integration. Further, we find that the impact of EPU on GVC participation operates through the financial constraint channel with highly leveraged and low-liquidity firms. Using survival analysis, we also highlight that higher EPU results in higher exit from GVCs and reduces entry into GVCs.



Examining the Impact of the 2011 Japanese Earthquake on Japanese Production Networks in the Republic of Korea: A Firm-level Data Analysis

ERIA Discussion Paper 2024-25, No. 532

By Jung Hur and Chin Hee Hahn

This paper examines the impact of the 2011 Japanese earthquake on the sales and purchases of firms that have an intra-firm network with Japan. Using unique firm-level data of the Republic of Korea (henceforth, Korea) and applying a difference-in-differences model, we find two results. First, following the 2011 Japanese earthquake, Japanese subsidiaries in Korea switched their intra-firm sales patterns with a reduction in intra-firm export and an increase in intra-firm domestic sales, compared to non-Japan foreign subsidiaries in Korea. Second, however, the sales or purchases of Korean mother firms with subsidiaries in Japan were negatively affected, compared to either non-foreign direct investment (FDI) firms or FDI firms without subsidiaries in Japan. The results imply that the Japanese subsidiaries in Korea had a relatively resilient and flexible intra-firm network, whilst the Korean firms with subsidiaries in Japan did not.



New Industrial Policies to Achieve Sustainable Asia-Wide Economic Development

ERIA Discussion Paper 2024-34, No. 541

By Masahito Ambashi, Naoyuki Haraoka, Fukunari Kimura, Yasuyuki Sawada, Masakazu Toyoda, and Shujiro Urata

This paper underscores the need for a renewed industrial strategy tailored to East Asian and Southeast Asian nations and regions that have experienced rapid economic growth through industrialisation. The proposed strategy emphasises integrating digitalisation into industrial and development policies as a catalyst for innovation.

In light of the global resurgence of industrial policy, the paper aims to advocate for the transformation of economic structures through the application of accumulated empirical knowledge and evidence-based policymaking. Additionally, it provides a comprehensive account of the historical development strategies in Asia and offers insights into how these strategies should adapt to future challenges and opportunities.



Global Pandemic Shocks, Foreign Exposure and Firm Productivity: Evidence from Korean Firm-level Data

ERIA Discussion Paper 2024-38, No. 545

By Ju Hyun Pyun and Jong-in Sun

This study analyses the impact of the COVID-19 pandemic on a firm's total factor productivity (TFP) using Korean firm-level data from 2016 to 2021. The study reveals that the pandemic had a heterogeneous impact on firm TFP depending on the firm's operational characteristics, specifically whether the firm is a multinational enterprise (MNE) or a pure exporter (non-MNE). Whilst the pandemic had a more significant negative impact on the TFP of pure exporters than other firms, MNEs were less affected by the pandemic shock than pure exporters. This implies that whilst both firms were exposed to negative demand shocks on a global scale, MNEs were better equipped to handle supply-side uncertainties through international diversification. The study identifies certain characteristics of MNEs that helped buffer the pandemic shock, such as shedding labour, high R&D intensity, and more diversification via foreign subsidiaries. These characteristics enabled MNEs to mitigate the pandemic shock and even increase their TFP during the pandemic.



Digitalisation, Exports, and Firm Performance: A Case of Indian Manufacturing

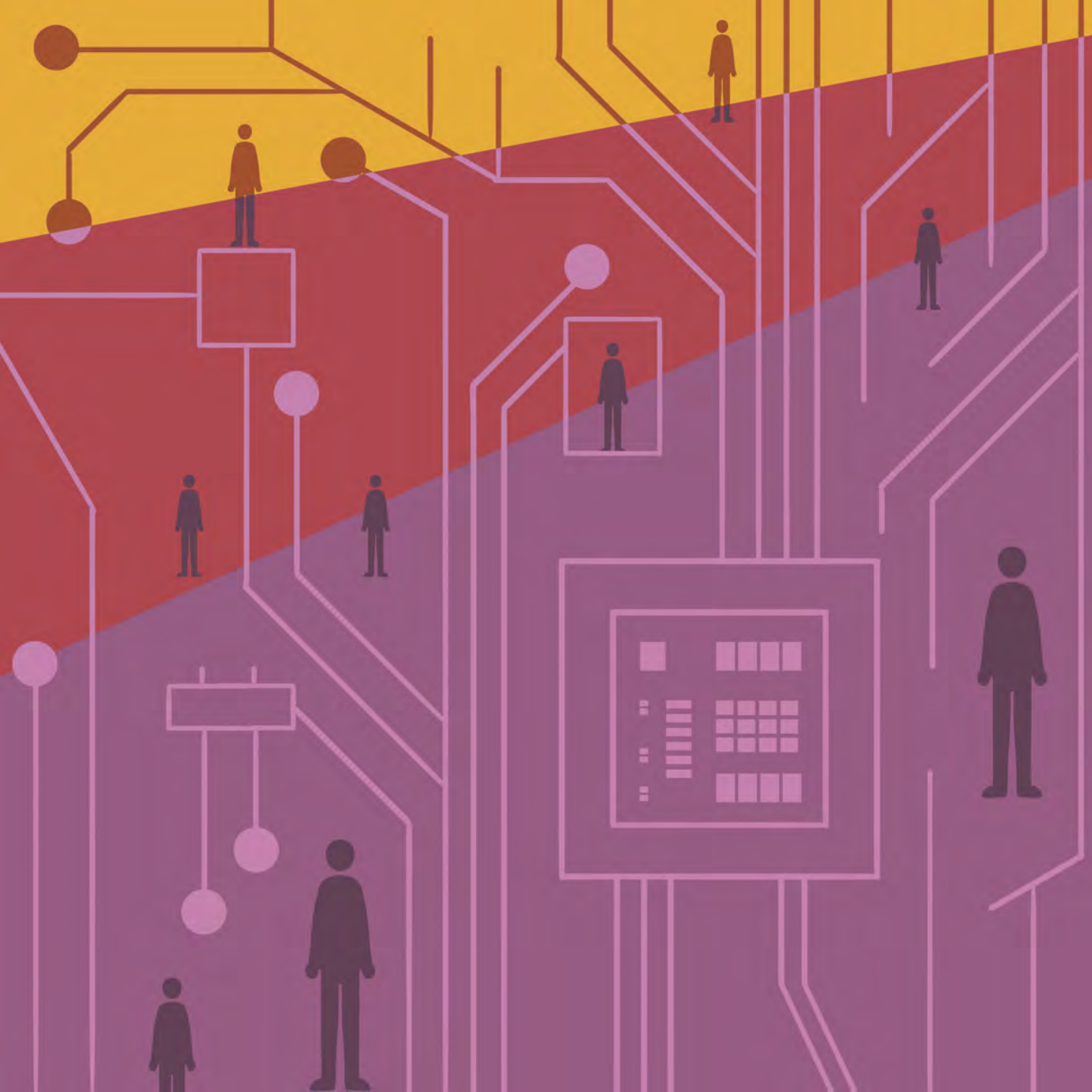
ERIA Discussion Paper 2024-39, No. 546

By Sanja Samirana Pattnayak

This study contributes to the literature on digitalisation in developing countries by examining its role in export intensity and firm productivity in Indian manufacturing from 2000 to 2021. Using fixed effects and the system generalised method of moments (GMM) model, the analysis draws on firm-level data from the Prowess database, encompassing approximately 11,000 manufacturing firms.

The findings reveal that digitalisation amongst India's manufacturing firms is positively associated with both export intensity and productivity, after accounting for firm characteristics and heterogeneity. Specifically, a 1% increase in digital intensity corresponds to a 0.16% increase in exports. This effect is further enhanced when expenditure on internet services and software development is included, raising the export impact to 0.21% per 1% increase in digital intensity. Additionally, the results indicate that a 1% increase in digitalisation intensity leads to a 0.8% growth in total factor productivity.

These findings have significant policy implications, particularly as digitalisation increasingly shapes the global and Indian economies. They underscore the need for strategies to promote digital adoption in manufacturing to enhance competitiveness and productivity.



Innovation and Technology

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ERIA One ASEAN Start-up White Paper 2024

Towards an ASEAN Innovation Ecosystem: Start-up Creation for Inclusive and Sustainable Economic Development

By ERIA Digital Innovation and Sustainable Economy Centre (E-DISC)

As ASEAN navigates a crucial period of recovery and rapid economic development following the COVID-19 pandemic, policymakers must leverage the region's evolving landscape to achieve both economic growth and social inclusion. This inaugural research project report, developed by ERIA Digital Innovation and Sustainable Economy Centre (E-DISC), offers a comprehensive analysis of how technological advancements can significantly strengthen economic development and promote societal progress. Amid the rapid advancement of technology, this report highlights the crucial contributions of start-ups in driving sustainable economic growth, particularly in alignment with the United Nations Sustainable Development Goals (SDGs). By examining the current challenges and opportunities in the ASEAN region, this document provides actionable recommendations for leaders and stakeholders to nurture a resilient start-up ecosystem. Such an ecosystem is essential for enhancing productivity, generating employment, and addressing pressing societal issues. The establishment of E-DISC in 2023 highlights ERIA's commitment to facilitating collaboration and evidence-based policymaking aimed at unleashing the potential of digital technologies. By leveraging the insights and directives presented in this research project report, ASEAN Member States will be better equipped to unlock the full potential of their start-up landscape. Ultimately, this initiative aims to drive economic prosperity, foster continuous innovation, and create a more inclusive future for all citizens in the region.





Future of Data Governance in Asia and Operationalisation of 'Data Free Flow with Trust'

ERIA Policy Brief, 2024-01

By Keita Oikawa

The global shift towards a data-driven society has highlighted the need for addressing emerging security risks and spurred demand for international data governance. Proposed in 2019 by former Japanese Prime Minister Shinzo Abe, Data Free Flow with Trust (DFFT) aims to tackle the fragmentation of data governance by advocating for a trusted and interoperable global system facilitating cross-border data flows (CBDF). ASEAN is accelerating its digital transformation through the Digital Economy Framework Agreement (DEFA), which aims to establish an open, secure, and inclusive digitally integrated regional economy. CBDF and Data Protections are priorities in ensuring responsible digital growth under DEFA. It is recommended that DFFT be advanced under DEFA to align with global initiatives on CBDF and data security. In this regard, a Ministerial Session on the Future of Data Governance in Asia and Operationalisation of DFFT, co-chaired by Ms Josephine Teo, Minister for Communications and Information of Singapore and Mr. Taro Kono, Minister for Digital of Japan, was held on 3 February 2024 with participants of the 4th ASEAN Digital Ministers Meeting. The discussions surrounded three main objectives. Firstly, advocating for the Cross-Border Privacy Rules initiative globally through ASEAN–Japan collaboration would facilitate market access. Secondly, building a transparent data governance repository would help SMEs navigate complexities. Lastly, considering multi-jurisdiction regulatory sandboxes for Privacy-Enhancing Technologies and other security enhancing technologies would enhance interoperability of national data protection laws. These initiatives aim to foster international data governance and support Asia's leadership in digital transformation through synergies with key areas in digital economy such as use of AI, cybersecurity, and digital payment.

Good Regulatory Practice in Indonesia

ERIA Policy Brief, 2024-02

By Ridha Aditya Nugraha, Eri Yoga Sidharta, Luki Safriana, Dian Ayu Aryani, and Vicia Sacharissa



This policy brief discusses the implementation and impact of the Online Single Submission (OSS) system in Indonesia, developed under the auspices of the Indonesian Investment Coordinating Board or Ministry of Investment (BKPM), which has streamlined the business licensing process and improved regulatory quality. The OSS system serves as a centralised platform for businesses to register and acquire licenses, particularly benefiting micro, small, and medium-sized enterprises (MSMEs). The digital economy in Indonesia, especially the e-commerce sector, is experiencing significant growth, with projections indicating substantial increases in gross merchandise value (GMV). The OSS system has positively impacted Indonesia's regulatory quality and improved the perception of the government's competence in supporting the private sector's growth. This policy brief recommends enhancing the implementation of the OSS system, promoting public participation, facilitating interagency coordination, and conducting regular monitoring and evaluation to assess the impact of Good Regulatory Practices (GRP) as implemented within OSS system on e-commerce sector.



Strengthening ASEAN's Cybersecurity: Collaborative Strategies for Enhanced Resilience and Regional Cooperation

ERIA Policy Brief, 2024-06

By Mahirah Mahusin and Hilmy Prilliadi

As ASEAN's digital economy continues to expand, the region faces escalating cybersecurity risks with significant potential costs. This policy brief examines ASEAN's current cybersecurity landscape, underscoring the need for enhanced cooperation and comprehensive strategies to address the rising threat of cyberattacks. The economic impact of cyberattacks in ASEAN is already substantial, affecting both public and private sectors. This brief reviews existing efforts such as the ASEAN Cybersecurity Cooperation Strategy 2021–2025 and the ASEAN Regional Computer Emergency Response Team (ASEAN CERT), recommending the establishment of a shared cybersecurity taxonomy, capacity-building initiatives, and legal framework updates to bolster cybersecurity. Key policy recommendations encourage robust multi-stakeholder collaboration at national and regional levels.



Promoting Fair Competition in ASEAN’s Digital Economy: Strengthening Policies for a Level Playing Field

ERIA Policy Brief, 2024-07

By Mahirah Mahusin and Hilmy Prilliadi

ASEAN’s digital economy is growing rapidly, offering both significant opportunities and challenges. Ensuring a competitive digital market is essential for fostering innovation, reducing costs, and enhancing product quality and choice for consumers and businesses, particularly MSMEs. This policy brief assesses the current digital market competition landscape in ASEAN, emphasising the need for robust competition policies to mitigate anti-competitive behaviours and establish a level playing field. It discusses key initiatives like the ASEAN Competition Action Plan (ACAP) 2025 and the ASEAN Guidelines for Sharing Merger Cases, while examining the complexities of digital markets, including the influence of dominant platforms, algorithmic impacts, and data privacy considerations. Policy recommendations focus on aligning provisions in the ASEAN Digital Economy Framework Agreement (DEFA) with regional standards and international best practices, enhancing regulatory capabilities, fostering regional cooperation, and promoting consumer education and protection.



Promoting E-Invoicing Interoperability in ASEAN: Overcoming Barriers to Trade Digitalisation

ERIA Policy Brief, 2024-10
By Mahirah Mahusin and Hilmy Prilliadi

Electronic invoicing (e-invoicing) is a vital component of paperless trading, delivering substantial cost savings and efficiency gains for businesses. The ASEAN e-invoicing market has experienced notable growth, spurred by initiatives from tax authorities, public procurement agencies, and business digitalisation programmes. However, adoption across the region still faces significant challenges.

To address these barriers, ASEAN has introduced initiatives to foster interoperability, develop common standards, and support regional integration. By prioritising standardisation, offering government support, and encouraging private sector adoption through financial incentives and capacity-building efforts, ASEAN can accelerate trade digitalisation and enhance economic integration across the region.



Elevating Consumer Confidence: Strengthening Legal Frameworks and Cross-Border Dispute Resolution in ASEAN's Digital Marketplace

ERIA Policy Brief, 2024-11
By Mahirah Mahusin and Hilmy Prilliadi

ASEAN's rapidly growing digital economy underscores the urgent need to safeguard online consumers. As internet and e-commerce usage soar, robust consumer protection mechanisms are essential to address the risks inherent in digital transactions. This Policy Brief explores the current state of online consumer protection in ASEAN, highlighting the critical need for comprehensive legal and policy frameworks that span all stages of online transactions. Drawing on the ASEAN Strategic Action Plan on Consumer

Protection and existing legislative measures, it identifies significant gaps in coverage and enforcement. The analysis emphasises the importance of pre-contractual information duties in fostering transparency and consumer trust. Key policy recommendations include the establishment of minimum protection standards for digital platforms, the development of thorough pre-contractual regulations, and the creation of an interoperable ASEAN Online Dispute Resolution (ODR) network. These measures aim to enhance consumer confidence, ensure a secure digital marketplace, and align ASEAN's practices with international standards.

Enhancing ASEAN's Competitiveness: Strategies for Talent Mobility and Cooperation in the Digital Economy

ERIA Policy Brief, 2024-12

By Mahirah Mahusin and Hilmy Prilliadi

This policy paper examines the critical role of talent mobility and cooperation in fostering innovation and addressing the growing digital skills gap in ASEAN. Despite rapid growth in the region's digital economy, the talent pool remains insufficient to meet the demands of information and communications technology and knowledge-based industries. Current ASEAN efforts, such as the ASEAN Agreement on the Movement of Natural Persons and various mutual recognition arrangements, have not fully addressed these challenges. This paper argues that integrating talent mobility and development provisions into the ASEAN Digital Economy Framework Agreement (DEFA) will enhance regional competitiveness. By promoting regional cooperation, addressing skill gaps, and creating a unified framework for talent development, the DEFA can support ASEAN's transition towards an innovation-driven economy. Key recommendations include the establishment of a regional dialogue platform, creation of a region-wide 'tech pass', and increased private sector involvement in workforce development.





Integrating Digital Payments in ASEAN: Harmonising Regulations and Strengthening Security for Inclusive Growth

ERIA Policy Brief, 2024-13

By Mahirah Mahusin and Hilmy Prilliadi

The growth of digital payment use in ASEAN has been significant, with digital payments accounting for over 50% of transactions and projected to reach US\$416.60 billion by 2028. This expansion supports financial inclusion, enhances e-commerce, and bolsters micro, small, and medium-sized enterprises. However, challenges – such as interoperability, regulatory fragmentation, and data security – persist. ASEAN's initiatives, including the Declaration on Advancing Regional Payment Connectivity and Promoting Local Currency Transaction, aim to address these issues. This policy brief emphasises the need for harmonised regulations, enhanced cross-sectoral collaboration, and robust security measures to ensure the seamless integration and sustainable growth of digital payments in the region.

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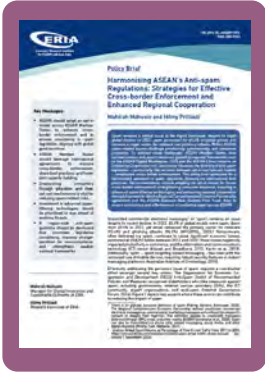
Enhancing E-authentication and E-signature across ASEAN: Building Interoperable Frameworks for Seamless Digital Transactions

ERIA Policy Brief, 2024-14

By Ikumo Isono, Hilmy Prilliadi, and Mahirah Mahusin

The ASEAN Agreement on Electronic Commerce mandates ASEAN Member States (AMS) to implement electronic authentication in line with international standards, aiming for interoperable e-authentication across the region by 2025. The establishment of national legal frameworks is crucial for the validity and exchange of electronic records and signatures, with some AMS already adopting United Nations Commission on International Trade Law model law-influenced legislation. Three regulatory models for e-signature

exist globally – prescriptive, minimalist, and two-tiered – each with distinct implications for security and flexibility. Successful e-authentication adoption involves legislative, administrative, and technological integration, along with user acceptance. Implementation status in the Asia-Pacific region correlates with gross domestic product per capita and overall capacity. Cross-border interoperability, particularly under a two-tiered approach, is essential for seamless e-signature adoption. Policy recommendations include ensuring ASEAN-wide interoperability; impact analysis on micro, small, and medium-sized enterprises; flexible implementation timelines; capacity building; and maintaining updated e-signature information on the ASEAN portal.



Harmonising ASEAN's Anti-spam Regulations: Strategies for Effective Cross-border Enforcement and Enhanced Regional Cooperation

ERIA Policy Brief, 2024-15

By Mahirah Mahusin and Hilmy Prilliadi

Spam remains a critical issue in the digital landscape, despite its slight global decline. In 2023, spam accounted for 45.6% of global emails and remains a major vector for malware and phishing attacks. Within ASEAN, spam-related issues challenge productivity, cybersecurity, and consumer protection. To address these challenges, ASEAN Member States have initiated various anti-spam measures, guided by regional frameworks such as the ASEAN Digital Masterplan 2025 and the ASEAN–China Initiative on Enhancing Cooperation on E-commerce. However, the diversity of anti-spam legislation – particularly the variance between opt-in and opt-out models – complicates cross-border enforcement. This policy brief advocates for a harmonised approach to spam regulation, drawing on international best practices. Recommendations include adopting an opt-in model for better cross-border enforcement, strengthening consumer education, investing in advanced spam-filtering technologies, and enhancing regional cooperation through frameworks like the Regional Comprehensive Economic

Partnership agreement and the ASEAN–Australia–New Zealand Free Trade Area to ensure consistency and effectiveness in combating spam across ASEAN.



Fostering Inclusive Growth in ASEAN's Digital Economy Through the DEFA and Regional Cooperation

ERIA Policy Brief, 2024-16

By Mahirah Mahusin and Hilmy Prilliadi

Digital transformation of the Association of Southeast Asian Nations (ASEAN), particularly its rapidly evolving digital economy, could create significant socio-economic transformation, yet persistent obstacles limit widespread and equitable digital engagement across the region. Amongst others, unequal connectivity, high broadband costs, limited digital literacy, and disparities in access for underserved groups such as women, persons with disabilities, and rural communities may exacerbate the digital divide. This policy brief highlights the digital divide, its impact on financial inclusion, the challenges faced by underserved groups, and the unequal distribution of benefits from digital trade across ASEAN. Despite progress under regional frameworks and external agreements, achieving digital inclusion requires more targeted, development-oriented approaches. The Digital Economy Framework Agreement (DEFA) presents an opportunity to harmonise policies, support capacity-building initiatives, and align national and regional objectives for inclusive growth. Policy recommendations include provisions to enhance access, improve digital literacy, and foster public-private partnerships to address the needs of underserved populations.



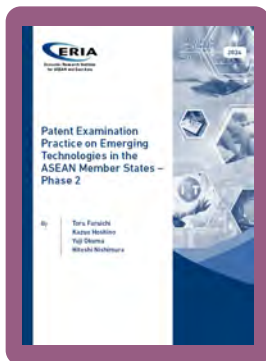
Rethinking ASEAN's Approach to a Moratorium on Customs Duties for Electronic Transmissions

ERIA Policy Brief, 2024-17

By Mahirah Mahusin and Hilmy Prilliadi

The World Trade Organization's moratorium on customs duties for electronic transmissions, in effect since 1998 and recently extended until March 2026, remains a topic of contention. Supporters highlight its significance in promoting global digital trade, while critics raise concerns about potential revenue losses and ambiguity in its scope. For ASEAN, the moratorium carries critical implications due to varying levels of economic development and digital readiness across its Member States (AMS). While some AMS favour a permanent ban in line with existing preferential trade agreements, others voice concerns about its potential developmental and industrial repercussions.

This policy brief analyses the economic impact of the moratorium, examines the differing perspectives within ASEAN, and reviews global trade practices related to electronic transmissions. It concludes with actionable policy recommendations for the Digital Economy Framework Agreement (DEFA), emphasising the need for clear guidelines, inclusivity, and alignment with international norms to support a resilient and equitable digital economy in the region.



Patent Examination Practice on Emerging Technologies in the ASEAN Member States – Phase 2

ERIA Research Project Report FY2024, No. 17

By Toru Furuichi, Kazuo Hoshino, Yuji Okuma,
and Hitoshi Nishimura

Mandated by the 11th ASEAN–Japan Heads of Intellectual Property Offices Meeting, ERIA conducted a research project and produced a report titled ‘Research 2022–2023 on Patent Examination Practices for Emerging Technologies in ASEAN Member States Phase 2.’

This research builds upon Phase 1 conducted in 2020–2021, which focused on AI and IoT technologies. Building on the findings of Phase 1, Phase 2 expands the study to include cases assessing Novelty, such as combination inventions like drone robots operated by remote controllers, Description Requirement assessments for AI systems, and Eligibility for Patent assessments for AI and IoT data, providing practical insights.

ERIA anticipates that this report will contribute to enhancing and facilitating the development of patent examination guidelines or practical standards for emerging technologies like AI and IoT amongst IP offices and related entities in the ASEAN region.

The research report was prepared by Shobayashi International Patent & Trademark Office in Tokyo, with special thanks to Mr Kazuo Hoshino.



The Digital Divide Amongst MSMEs in ASEAN

ERIA Research Project Report FY2024, No. 20

Edited by Keita Oikawa, Fusanori Iwasaki, Yasushi Ueki,
and Shujiro Urata

The Association of Southeast Asian Nations (ASEAN) has recognised the critical need to address digital disparities amongst micro, small, and medium-sized enterprises (MSMEs) to promote inclusive and sustainable growth. The COVID-19 pandemic has accelerated the adoption of digital services across society, but a significant digital divide persists within the ASEAN region, particularly affecting MSMEs. To better understand the extent of this divide, we conducted a large-scale questionnaire survey in 2023, focusing on MSMEs across the region.

Key findings include:

1. Current State of the Digital Divide
2. Impact of COVID-19 on Digital Tool Adoption
3. Obstacles to Digital Adoption
4. Expectations of Government Support



Does Digitalisation Promote the Servicification of Manufacturing in China?

ERIA Discussion Paper 2024-04, No. 511

By Wenxiao Wang and Shandre Mugan Thangavelu

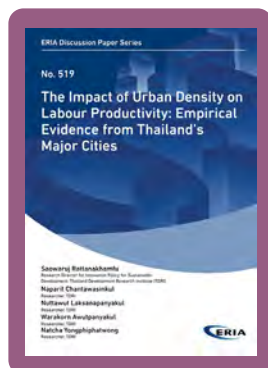
This paper uses detailed firm-level and transactional-level trade data to examine the causal relationship between digitalisation and servicification in Chinese manufacturing firms. Using the novel approach of text mining and analysis, this paper constructs two firm-level measurements of digitalisation and servicification. Further, it explores the impact of digitalisation on services integration within manufacturing activities. We find digitalisation plays a crucial role in enhancing manufacturing servicification, enabling firms to produce and sell more service products. We also highlight that the two mechanisms through which digitalisation promotes servicification are digital technology and profitability. This paper contributes to the existing literature by developing the micro-level evidence of the digital transformation occurring within Chinese manufacturing firms and sheds light on the emerging services-led global value chain upgrading pattern.



Labour and Migration

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The Impact of Urban Density on Labour Productivity: Empirical Evidence from Thailand's Major Cities

ERIA Discussion Paper 2024-12, No. 519

By Saowaruj Rattanakhomfu, Naparit Chantawasinkul, Nuttawut Laksanapanyakul, Warakorn Awutpanyakul, and Natcha Yongphiphatwong

This study investigates the relationship between urban density and productivity, specifically wages adjusted for provincial price differences, in four major cities of Thailand: Bangkok, Chiang Mai, Khon Kaen, and Songkla. Utilising the ArcGIS survey of Khon Thai 4.0 data, which measures urban density as the number of inhabitants per grid cell area, we employ the two-stage least squares estimation technique to address endogeneity concerns.

Our findings demonstrate that higher urban density leads to an 8.9% increase in individual hourly wages at the 5% significance level. This supports the notion that densely populated urban areas foster enhanced productivity through agglomeration economies and knowledge spillovers. Furthermore, we observe the expected impacts of education, age, and gender on wages. Higher education is associated with an 8.2% increase in wages, highlighting its influence on labour productivity. Age exhibits an inverted U-shaped relationship, indicating that experience and skill development lead to higher wages up to a certain threshold. Male workers earn approximately 5.83% more than their female counterparts, revealing a gender wage gap.

Moreover, our analysis reveals contrasting effects of higher urban density on skilled and unskilled workers. Skilled workers experience a significant 15.2% increase in wages, whereas the impact on unskilled workers remains modest at around 1.8%. Additionally, education significantly contributes to higher wages for both skilled and unskilled workers.

This study provides valuable policy implications for promoting labour productivity and addressing urban development challenges in Thailand.

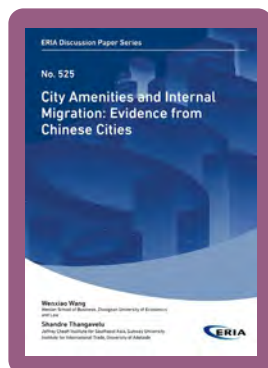


The Heterogeneous Impacts of Digital Transformation and Investment on Indonesia's Labour Market

ERIA Discussion Paper 2024-17, No. 524

By Maria Monica Wihardja, Abror Tegar Pradana,
Putu Sanjiwacika Wibisana, and Arya Swarnata

In this paper, we provide a nuanced and detailed analysis of the effects on the labour market of digital transformation and investment in Indonesia. This paper is divided into three strands of work, which can be read independently or together. In the first strand, we discuss the impact of digital transformation on rising wage inequality using the approach of skill-biased technological change. Building on the work by Jacoby et al. (2021), we explore channels that may attenuate the skill-biased technological change. The second strand looks at rising wage inequality arising from routine-biased technological change, which theorises that it is those performing routine tasks in their jobs who are left behind as automation emerges, not necessarily the less-educated workers. The third strand looks at the impacts of investment in the digital sectors on the wages and employment of various types of workers. The overall narrative is clear: workers who are more advantaged to begin with, such as high-skilled and better-educated workers, benefit more from digital transformation and digital investment than low- and mid-skilled and lower-educated workers, who are more likely to lose out. There are, however, cases where high-skilled workers may also be adversely affected. This is the case in Indonesia for the period until 2019 (2016 for the study on the effects of digital investment). To address the digital divide potentially arising from skill-biased technological change, routine-biased technological change, and digital investment, we recommend that policies to accelerate Indonesia's digital transformation and liberalise its digital investment are accompanied by policies on education, the labour market, investment, trade (including service trade), and competition. Our policy recommendations shed light on the findings in this report while considering that digital technologies will continuously evolve that may have different impacts on the labour market.



City Amenities and Internal Migration: Evidence from Chinese Cities

ERIA Discussion Paper 2024-18, No. 525

By Wenxiao Wang and Shandre Mugan Thangavelu

This paper provides new empirical evidence of city amenities' role in China's internal migration using a unique city-level dataset. The results highlight the positive effects of city amenities such as education, public facilities, transportation, environment, and climate conditions in attracting migrant workers to cities. In our study, migrant workers are more likely to move to cities with better education, more public facilities, higher coverage of urban pensions, and a cooler climate with more precipitation. Moreover, they prefer to migrate and live in cities with larger service agglomeration and employment, higher average wages, more job opportunities, and lower house prices.



Revenue and Cost Uncertainties and Market Power

ERIA Discussion Paper 2024-37, No. 544

By Abhishek Kumar, Apra Sinha, and Gazi Salah Uddin

Using administrative plant-level data from India, we estimate the effect of revenue and cost uncertainties on markup (product market power), markdown (labour market power), and combined market power. We show that historical two- and three-digit industry averages of exports, imported inputs, and oil share are valid instruments for exports, imported inputs, and oil share at the plant level. The results suggest that revenue and cost uncertainties affect markup differently: revenue uncertainty decreases markup, whereas cost uncertainty increases markup. Despite the opposite effect of these uncertainty measures on product market power, revenue and cost uncertainties tend to increase combined market power. This is because the revenue uncertainty significantly increases labour market power. Heightened cost uncertainties reduce labour market power but by less compared to increases in product market power. Given the results obtained in this paper, it is important to make a distinction between revenue and cost uncertainty to understand their cyclical nature.



Regulation and Governance

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Fiscal Policy to Support the Green and Just Energy Transition

ERIA Research Project Report FY2024, No. 27

Edited by Fauziah Zen, Fukunari Kimura,
and Alloysius Joko Purwanto

This study explores green fiscal policies in Indonesia, Malaysia, Thailand, Japan, and the European Union, highlighting their efforts to decarbonise key sectors. It underscores the gap between climate pledges and actual progress, emphasising the need for strategic planning, robust fiscal policies, and tailored solutions for each country's green transition.

Case studies include Indonesia's coal phase-out, Malaysia's renewable energy policies, Thailand's electric vehicle (EV) policy, the EU's transport decarbonisation framework, and Japan's Green Transformation (GX) Program. These policies demonstrate the economic, social, and environmental impacts of the green transition and emphasise the importance of a just transition that benefits all sectors of society.

The report stresses the need to mobilise private financing, including public-private partnerships, to overcome limited public capacity. Key fiscal tools include carbon taxes, subsidies for renewable energy projects, and innovative financing mechanisms such as green bonds, climate funds, and sustainability-linked loans.

A just energy transition is advocated to ensure that disadvantaged communities are protected, with attention to reducing fuel subsidies, phasing out fossil fuels, and investing in renewable energy. The study also highlights the challenges faced by developing economies in accessing international climate funds.

Key lessons include fostering innovation, strengthening policy frameworks, enhancing public-private partnerships, and aligning climate goals with sustainable development. ASEAN countries are urged to prioritise these

strategies for a resilient, low-carbon future that ensures equitable growth and addresses the pressing challenges of climate change.



Current Status of ASEAN Data Governance and Its Implications for the Digital Economy Framework Agreement

ERIA Discussion Paper 2024-32, No. 539

By Shota Watanabe, Ema Ogura, and Keita Oikawa

The transition to data-driven societies has heightened the importance of balancing the free flow of data with robust data protection for privacy, intellectual property, trade secrets, and national security. While different countries have introduced various data governance frameworks, including comprehensive privacy laws, differences in regulations across borders hinder data flow, increasing compliance costs and limiting business expansion, especially for small and medium-sized enterprises. The concept of Data Free Flow with Trust (DFFT), introduced at the G20 in 2019, aims to address this balance by promoting interoperability while respecting national sovereignty. In ASEAN, however, regulatory fragmentation further complicates cross-border data flow. Variations in data localisation policies and personal data governance amongst ASEAN Member States (AMS) create significant challenges for businesses. For instance, differences in requirements for sensitive data, data subject rights, and security measures necessitate additional compliance efforts for companies operating in multiple jurisdictions. Moreover, non-personal data regulations, such as restrictions on supply chain and research and development (R&D) data sharing or mandatory technology transfers, impede global R&D collaboration and discourage investment in certain countries. This study provides a comprehensive analysis of data-related regulations in ASEAN and proposes policy recommendations for the ASEAN Digital Economy Framework Agreement (DEFA), set for 2025. It highlights the need for transparency, regulatory alignment, and various mechanisms to ensure smoother cross-border data flow, ultimately fostering regional digital integration.

Leveraging ASEAN Membership for Timor-Leste's Development: Issues and Recommendations

ERIA Discussion Paper 2024-33, No. 540

By Rui Augusto Gomes



To offer policy recommendations regarding the prospective accession of Timor-Leste into the Association of Southeast Asian Nations (ASEAN), this study examines the development gaps between Timor-Leste and ASEAN member countries across various dimensions. The analysis utilises statistical aggregates derived from official reports, with a particular focus on well-being indicators. While Timor-Leste has made substantial progress over the past 2 decades – transitioning from post-conflict status to an open economy characterised by reduced corruption, democracy, a free press, relative stability, and sufficient liquidity – its economic and social policies have not consistently prioritised high and sustainable growth. Consequently, challenges such as overreliance on a single commodity, insufficient human development, a pronounced rural–urban divide, a lack of decent and productive job creation, limited domestic revenue diversification, weak food security, and an underdeveloped domestic private sector persist.

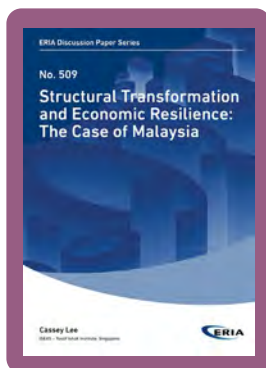
The research underscores the importance of modernising Timor-Leste's domestic institutions and enhancing their capacities to operate effectively in a larger, highly competitive, market-driven environment within the region and beyond. At the same time, it highlights the need to address the complex challenges that were also faced by some ASEAN Member States during their accession in the 1990s. Finally, the paper offers recommendations on how Timor-Leste can maximise the benefits of ASEAN integration.





Services

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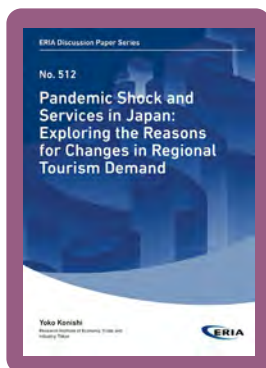


Structural Transformation and Economic Resilience: The Case of Malaysia

ERIA Discussion Paper 2024-02, No. 509

By Cassey Lee

Exports have been a critical source for the resilience of the Malaysian economy during the COVID-19 pandemic and post-pandemic period. Long-term structural change in intersectoral production networks could have reduced this resilience. Stronger domestic intersectoral linkages and declining participation in backward global value chain participation are likely to reduce the impact of positive export shocks on the country's economy. The services sector has become increasingly important over time. Consumption in the services sector is clearly an important driver of growth. A positive export shock is enhanced by higher domestic intersectoral linkages in the services sector but not in manufacturing.

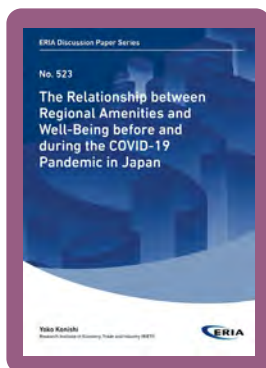


Pandemic Shock and Services in Japan: Exploring the Reasons for Changes in Regional Tourism Demand

ERIA Discussion Paper 2024-05, No. 512

By Yoko Konishi

Tourism was one of the sectors most damaged by COVID-19. The number of inbound tourists plummeted, and domestic travellers were forced to refrain from traveling for long periods due to the number of infections. This paper analyses the impact of policies (e.g. the 'Go To Travel' campaign) on tourism demand and the number of infected people on changes to business conditions at small and medium-sized lodging facilities by prefecture. We found that tourism policies increased demand for popular tourist destinations, but infections subsequently expanded, lowering business confidence. In addition, when the number of infected people was high at the time of the policy, as is the case in Okinawa and Hokkaido, business confidence did not recover. It was also found that inbound tourists stayed in all parts of Japan before the pandemic, but they were concentrated in large cities with airports during the pandemic.

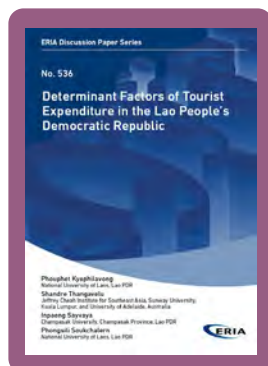


The Relationship between Regional Amenities and Well-Being before and during the COVID-19 Pandemic in Japan

ERIA Discussion Paper 2024-16, No. 523

By Yoko Konishi

Did subjective well-being change in Japan with the prolonged restriction of activities due to the COVID-19 pandemic? Data from a Cabinet Office survey of 50,000 people from pre-pandemic times to the present were used to observe how demographic variables, economic status, connections with others, and regional amenities affected their subjective well-being. Using the most recent survey results, it is observed that applying digital technology to work, communications, and consumer behaviours increased happiness.

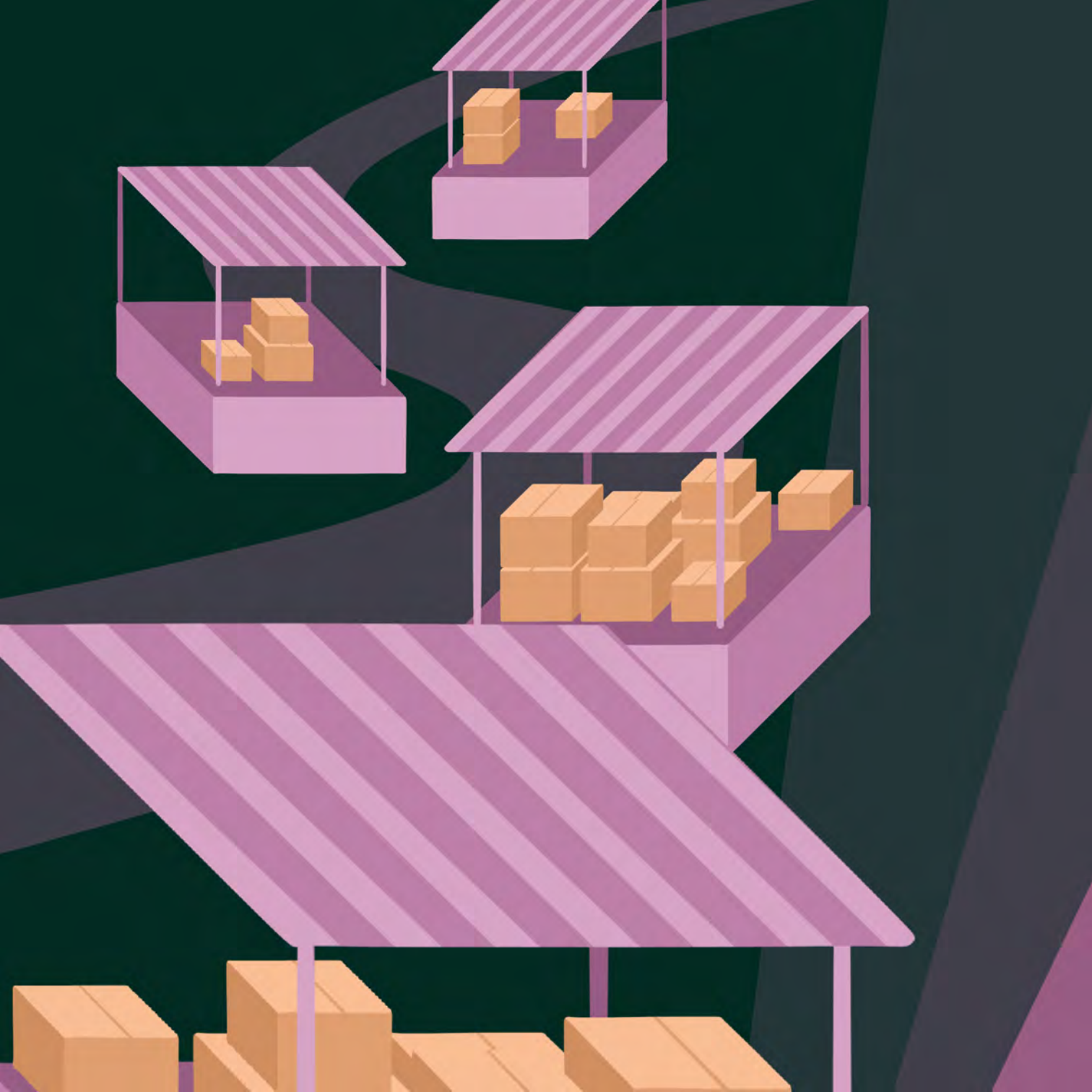


Determinant Factors of Tourist Expenditure in the Lao People's Democratic Republic

ERIA Discussion Paper 2024-29, No. 536

By Phouphet Kyophilavong, Shandre Thangavelu,
Inpaeng Sayvaya, and Phongsili Soukchalern

This paper examines the key factors influencing the international tourist expenditure in the Lao People's Democratic Republic (Lao PDR) using a unique survey data of international tourists. The empirical analysis was implemented with quantile regression technique. The data are based on the 2019 survey of international tourist arrivals from the Ministry of Information, Culture and Tourism (MICT), Lao (Lao PDR). The results indicate that the increase in international tourist arrivals and improving domestic and international flights have had a strong positive impact on international tourist expenditure in Lao PDR. In addition, the growth of hotel and service availability, and promotion of tourist activities in Luang Prabang and the capital city of Vientiane have had a positive impact on tourist expenditure. The promotion of travel for senior citizens, advertising on social media (such as Facebook or Twitter) and visits to Luang Prabang (a World Heritage site) have had a positive impact on overall international tourist expenditure.



SMEs

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SME Policy Index ASEAN 2024 Enabling Sustainable Growth and Digitalisation

Edited by ERIA, ASEAN Coordinating Committee on Micro, Small, and Medium Enterprises (ACCMSME), OECD



The SME Policy Index is a benchmarking tool designed to monitor and evaluate the progress of policies that support small and medium-sized enterprises (SMEs), including micro enterprises. The ASEAN SME Policy Index 2024 is the result of a collaborative effort between the ASEAN Coordinating Committee on Micro, Small, and Medium Enterprises (ACCMSME), the Economic Research Institute for ASEAN and East Asia (ERIA), and the Organisation for Economic Co-operation and Development (OECD). Developed with the funding support of the Governments of Germany and Ireland, this report is the outcome of work conducted by the ten ASEAN Member States (Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Viet Nam).

This report is based on the SME Policy Index methodology developed by the OECD, which has been applied to over 40 countries and five regions worldwide. It builds on the insights and analysis of previous editions, including the SME Policy Index: ASEAN 2014 Towards Competitive and Innovative ASEAN SMEs and the SME Policy Index: ASEAN 2018 Boosting Competitiveness and Inclusive Growth. Divided into eight key policy dimensions relevant to SME policies, the report enables benchmarking of policy design, implementation, and evaluation across the ten ASEAN Member States.

The report provides both a regional perspective on recent developments in SME-related policies across Southeast Asia and detailed national-level insights. Based on this analysis, it offers a comprehensive menu of concrete policy options tailored for the region and individual countries, aiming to foster sustainable growth and digitalisation amongst SMEs in ASEAN.



Post-Pandemic Strategies for Promoting the Agriculture and CMSME Sector of Bangladesh

ERIA Discussion Paper 2024-20, No. 527

By Farzana Munshi, Ahsan Senan, and K.M. Arefin Kamal

Agriculture and cottage, micro, small, and medium-sized enterprises (CMSMEs) – the two critically important sectors for pro-poor and inclusive growth in Bangladesh – were severely affected by the coronavirus disease (COVID-19) pandemic and the subsequent lockdowns. Supply chains were interrupted, jobs were lost, and businesses were closed. This study identifies the major challenges faced by these two sectors and develops intervention strategies to promote them in the post-pandemic period. This is done through an extensive review of relevant literature, discussions with sector experts, and a survey. Based on the research findings, we recommend some policy interventions, such as greater digitisation and the development of uninterrupted cold-chain infrastructure across the country. We also recommend more supportive policies to scale up start-ups that offer solutions to at least one of the major challenges faced by these two sectors.



Sustainable Economy and Environment

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Areas of Cooperation Between ASEAN and Timor-Leste

ERIA Policy Brief, 2024-05

By Rui Augusto Gomes, Rashesh Shrestha, Salvador Buban

This Policy Brief explores the development challenges faced by Timor-Leste and how its potential accession into ASEAN can influence the country's long-term economic prospects. Timor-Leste stands out as one of the most democratic countries in the region, with a stable and peaceful environment, free press, and a high level of female representation in Parliament. However, its economic growth has been inconsistent and overly reliant on public expenditure, funded largely by oil revenues. There remains a significant development gap between Timor-Leste and other ASEAN members across various dimensions. As the process for Timor-Leste's full membership in ASEAN unfolds, several areas of mutual interest emerge for collaboration. Key areas of focus include the development of the blue economy, sustainable agriculture, digital transformation, and human resource development. Additionally, it is recommended that Timor-Leste be integrated into ASEAN's programmes designed to reduce development disparities within the region.



Regional Knowledge Sharing for Addressing Plastic Pollution

ERIA Policy Brief, 2024-08

By Ivana Suradja and Aulia Salsabella Suwarno

Plastic pollution has emerged as a major environmental threat, particularly in the ASEAN region, where it impacts marine resources crucial to AMS economies. As AMS depend on marine ecosystems, plastic pollution poses significant risks to their ocean economies and biodiversity. This policy brief emphasises the importance of regional knowledge sharing as a strategy to effectively address plastic pollution. Drawing insights from initiatives such as the ASEAN Conference on Combating Plastic Pollution: Enhanced Synergies and Collaborative Actions to Combat Plastic Pollution (ACCP 2023), it argues that collaborative knowledge sharing enables AMS to coordinate actions, share best practices, and create harmonised responses to the challenges posed by plastic pollution in marine environments.

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Enhancing Plastic Reuse and Recycling with a Full Life-Cycle Approach

ERIA Policy Brief, 2024-09

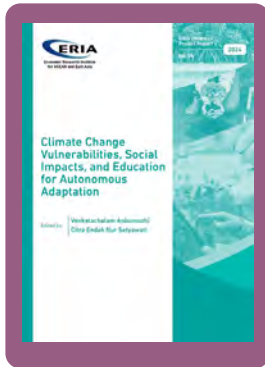
By Aulia Salsabella Suwarno and Ivana Suradja

Plastic pollution poses both environmental and economic challenges for Southeast Asia, underscoring the urgent need for a transition to a circular plastics economy driven by reuse and recycling strategies. Although AMS have incorporated these strategies within their National Action Plans, they are struggling to achieve the scale necessary to counteract rising plastic waste. This policy brief identifies key barriers hindering the growth of plastic reuse and recycling initiatives in the region and provides targeted recommendations based on a full life-cycle approach. By adopting this approach, AMS can maximise the economic potential associated with effective plastic waste management and pollution mitigation.

Climate Change Vulnerabilities, Social Impacts, and Education for Autonomous Adaptation

ERIA Research Project Report FY2024, No. 04

Edited by Venkatachalam Anbumozhi
and Citra Endah Nur Setyawati



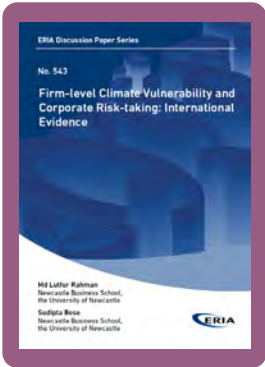
Southeast Asian economies are highly vulnerable to climate change due to extensive coastlines, densely populated low-lying areas, and dependence on natural resources. Rising temperatures, erratic rainfall, and extreme weather events threaten ecosystems, livelihoods, and social stability. This book explores these vulnerabilities and their social consequences, focusing on the importance of education in fostering autonomous adaptation.

Examining the impacts on agriculture, food security, and infrastructure, the book sheds light on the social inequalities exacerbated by climate change. It emphasises the need for education to empower communities to adapt independently. By promoting knowledge of climate science, sustainable practices, and risk reduction strategies, education for autonomous adaptation equips individuals, communities, and governments to navigate the challenges and build resilience.

Case studies and regional analyses discussed in the chapters showcase successful autonomous adaptation initiatives driven by local knowledge and traditional practices. The book argues for integrating climate change education into formal and informal learning systems, fostering collaboration between governments, educators, and communities. This comprehensive approach empowers Southeast Asia to adapt, mitigate, and build a more sustainable future in the face of climate change.

Addressing climate change vulnerabilities and social impacts through education and autonomous adaptation is imperative for fostering resilience and sustainable development. By leveraging local knowledge, enhancing educational initiatives, and integrating climate considerations into policy and practice, regions like Southeast Asia can better navigate the challenges posed by climate change. Autonomous adaptation, social impacts, and agricultural sector adaptation are amongst the topics covered in this book, which provides a framework for evaluating vulnerability in Southeast Asia and beyond.

This book offers essential insights and strategies for policymakers, educators, and researchers, contributing to a more climate-resilient and sustainable future.



Firm-level Climate Vulnerability and Corporate Risk-taking: International Evidence

ERIA Discussion Paper 2024-36, No. 543

By Md Lutfur Rahman and Sudipta Bose

This study examines the association between firm-level climate change risk exposure and corporate risk-taking using a sample of 50,782 firm-year observations from 2003 to 2021 across 58 countries worldwide. Using a time-varying measure of firm-level climate change risk exposure derived from corporate conference call transcripts, we find a negative relationship between firm-level climate change risk exposure and corporate risk-taking. We also find that the negative association is more pronounced for firms with higher environmental innovation and firms domiciled in countries with stakeholder-oriented business cultures and stronger governance. Our key finding is robust under several alternative corporate risk-taking and climate change risk exposure proxies. The findings of this study could be used by policymakers to enact regulations limiting risky investments in climate-vulnerable sectors or to provide economic safety nets for businesses impacted by climate change.





Trade and Investment

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Global Minimum Tax: Policy Impact on Investment Promotion and Incentives in ASEAN Member States

ERIA Policy Brief, 2024-04

By Sufian Jusoh and Intan Murnira Ramli

The Association of Southeast Asian Nations (ASEAN) Member States are some of the most important foreign direct investment destinations in the world. Investment in ASEAN Member States covers all four pillars of investment typology: natural resources, market-seeking, export oriented, and strategic assets. Key sectors – such as semiconductors, tourism, consumer products, e-commerce, banking, and commodities (e.g. nickel) – are expected to benefit from this trend. Many of the investors in ASEAN are multinational enterprises, and multinational enterprises earning €750 million or more in two of the four fiscal years, are now subject to the Global Minimum Tax (GMT) in more than 140 jurisdictions around the world. With the introduction of the GMT, ASEAN Member States must rethink their incentives and investment promotion strategies to maintain their competitive edge over other foreign direct investment destinations around the globe.



Compliance Analysis of Indonesia's Local Content Requirement Measures: International Trade and Investment Agreement Perspectives

ERIA Policy Brief, 2024-18

By Junianto James Losari

With the global economic landscape shifting from a relatively liberal to a more protectionist stance, local content requirements (LCRs) become more prevalent as a tool in industrial policy. During the last decade, Indonesia has adopted more LCR measures to build up strategic domestic industries to promote domestic value added. However, Indonesia has also made commitments in international

trade and investment treaties which may be breached by these measures. Considering the importance of foreign direct investment for the growth of domestic industries, Indonesia should (i) review its LCR measures, (ii) assess the capacity of existing domestic industries to supply raw materials if the measures remain in effect, and (iii) prioritise improving the business environment.



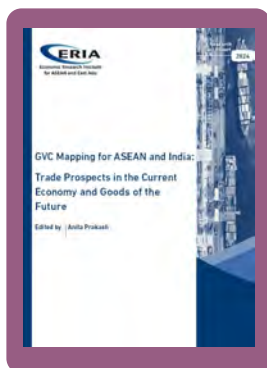
Services and Investment Liberalisation in ASEAN

ERIA Research Project Report FY2024, No. 18

By Yap Lai Peng and Intan Murnira Ramli

The gains from liberalisation within the ASEAN Economic Community (AEC) have been substantial. The integration and liberalisation measures implemented under the AEC have resulted in remarkable achievements for ASEAN. Over the past 2 decades, real GDP growth, per capita GDP, and foreign direct investment (FDI) inflows have experienced significant increases. Notably, the liberalisation of investment and services has attracted robust FDI inflows, accounting for an unprecedented 17.4% of global FDI in 2022. These advancements have steered ASEAN towards an economic structure where the services sector plays a dominant role, aligning with the trajectories of rapidly developing and industrialising economies.

In this context, ASEAN's forthcoming phase necessitates a steadfast commitment to its integration agenda and the realisation of liberalisation objectives under the AEC. Particular emphasis should be placed on ensuring the attainment of targets for investment and services liberalisation, as these elements stand out as the primary drivers of current and future economic growth.



GVC Mapping for ASEAN and India: Trade Prospects in the Current Economy and Goods of the Future

ERIA Research Project Report FY2024, No. 24

Edited by Anita Prakash

ERIA collaborates closely with India and ASEAN – two dynamic economies in the Indo-Pacific region. ERIA monitors trade and economic integration issues in these regions and between them. This study delves into Global Value Chain (GVC) integration in manufacturing between India and ASEAN, with a particular emphasis on foreign direct investment (FDI) as a crucial driver of enhanced GVC integration. It also includes a brief section on trade in environmental and digital goods.

The study assesses GVC performance and integration for both India and ASEAN, bilaterally and globally, and offers policy recommendations to improve trade competitiveness within the region and beyond. It interprets GVC participation data and bilateral datasets to evaluate the level of integration in value chains and the potential for greater economic integration. With the current trend of de-risking supply chains from China, India and ASEAN are presented with new opportunities. Shifts in trade policies in large developed markets like the US and the EU, which favour diversified and resilient supply chains, alongside the rise of new production centres in Asia and Africa, offer ASEAN the chance to expand its trade connections – especially in the growing digital economy. Strengthening complementarities in manufacturing and the digital economy, alongside capacity building, will be key to advancing India–ASEAN economic relations



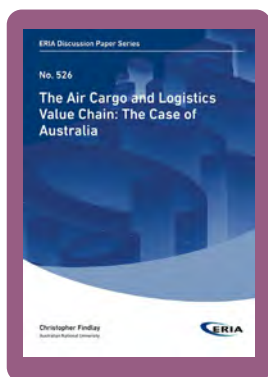
Study on the Importance of Investment in DRR and Advanced DRR Technology in ASEAN Countries

ERIA Discussion Paper 2024-06, No. 513

By Makoto Ikeda, Thawatchai Palakhamarn,
and Venkatachalam Anbumozhi

Rapid population growth and economic development have become apparent in ASEAN countries in recent years. Moreover, each year witnesses reported damage from major natural hazards, with a notable frequency of floods and storms. To mitigate the enormous damage caused by these natural hazards, the ASEAN countries are taking proactive measures through 'investment in disaster risk reduction (DRR).' These measures are varied and include early warning, disaster information sharing, and the utilisation of disaster prevention technologies. In addition, most of the practices reviewed in this study were found to be in line with the AADMER Work Programme 2021–2025 and the Sendai Framework, which are official documents in the field of disaster reduction. To further promote and effectively implement 'investment in DRR' activities in the future, collaboration between countries, including Japan, and related organisations will be important.

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The Air Cargo and Logistics Value Chain: The Case of Australia

ERIA Discussion Paper No. 526, 2024-19

By Christopher Findlay

The COVID-19 pandemic period offered the opportunity to consider the adjustment of elements of the transport system to the shock. This paper reviews the experience of the air freight system. It discusses how initially the pandemic led to rising rates, especially because of restrictions on passenger travel, which in turn induced a supply response that allowed capacity to recover. The consequences for trade costs are also examined

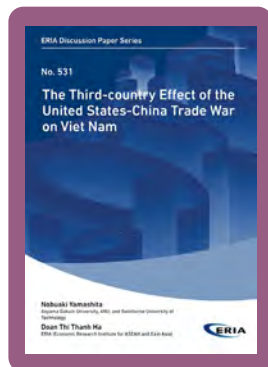
using data on product imports by Australia by mode. The rise in trade costs for air freight during the pandemic was significant but less than that for sea freight. The drivers of variation in trade costs at the levels of product and economy of origin are identified, including distance, unit value, and institutional variables. The long run trend is for trade costs to fall in both sea and air freight modes. There is scope for further reduction in costs associated with air freight when supported by innovation in the sector, including the application of digital technology. This shift is facilitated by a number of policy initiatives, including more open policy regimes for air freight services and implementation of commitments in the World Trade Organization's Trade Facilitation Agreement.

The Third-country Effect of the United States-China Trade War on Viet Nam

ERIA Discussion Paper 2024-24, No. 531

By Nobuaki Yamashita and Doan Thi Thanh Ha

The United States (US)–China trade war created new export opportunities for countries connected with the US and China by global value chains. We focus on the case of Vietnamese firms and examine a third-country effect by exploiting the firm-level variations in the extent of connections to the US and China with global value chains.





Impacts of Trade Diversion from China in the United States Market on Wages in a Third Country: Evidence from Thailand

ERIA Discussion Paper 2024-26, No. 533

By Kazunobu Hayakawa and Sasatra Sudsawasdi

Since the latter half of the 2010s, China's exports to the United States (US) have gradually decreased due to the US-China trade war and other factors, such as lockdown measures in China to combat COVID-19. This decrease has resulted in increasing exports from third countries, including Thailand, to the US market by substituting China's exports, i.e. trade diversion. Against this backdrop, this study empirically investigates how the changes in exports to the US driven by the change in China's exports to the US affect wages in Thailand. Especially, we examine the heterogeneous effects according to workers' characteristics. To this end, we conduct regression analyses using individual-level quarterly data from the first quarter of 2017 to the second quarter of 2023. Our main finding is that the wage gap between low- and middle-skilled workers decreased, whilst the gap between middle- and high-skilled workers increased. Namely, the increased exports to the US caused 'wage polarisation' in Thailand. We also find that the increase in exports to the US contributed to expanding the wage gap by age but narrowing it by gender.

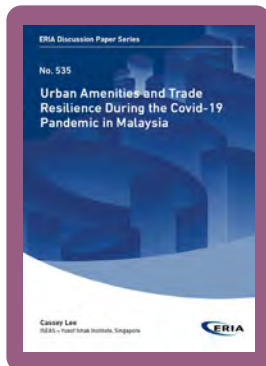


The Effect of United States Monetary Policy on Foreign Firms: Does Debt Maturity Matter?

ERIA Discussion Paper 2024-27, No. 534

By Sebastiao Oliveira, Jay Rafi, and Pedro Simon

We provide novel evidence that corporate debt maturity plays an important role in the transmission of United States (US) monetary policy to foreign firms. Using an identification strategy that explores the ex-ante maturity structure of long-term debt to predict firms' financial positions in a given year, we show that the effect of US monetary policy shocks on foreign firms is amplified by financing constraints. After a contractionary shock, financial conditions in foreign countries become tighter, and firms with a high proportion of long-term debt maturing right after the shock significantly decrease investment and sales. We find that firms in emerging economies are much more affected by these shocks compared to those in advanced economies, and the amplification effect of US monetary policy shocks by financing constraints is present only in emerging economies.



Urban Amenities and Trade Resilience During the Covid-19 Pandemic in Malaysia

ERIA Discussion Paper 2024-28, No. 535

By Cassey Lee

The main objective of this study is to empirically examine the role played by amenities in supporting growth and trade in Malaysia during the pandemic and post-pandemic recovery phases. The manufacturing sector has been an important factor in mitigating the negative impact of the pandemic. It has also been a positive driver of the country's economic recovery. Transport, health and ICT-related amenities supported production, consumption, and trade activities during the pandemic and post-pandemic recovery periods.



Trump Tariffs and Roundabout Trade

ERIA Discussion Paper 2024-31, No. 538

By Tadashi Ito

Although there are many news articles about tariff dodging by re-routing made-in-China goods through third countries and relabelling them as made-in-Mexico or made-in-Viet Nam, there are no scientific studies on the issue. This paper provides statistical evidence on whether such practices are taking place. Using monthly trade statistics at the most disaggregated level, analysis using data up to 2019, the year before the COVID-19 shock, show little evidence of roundabout trade. With an extended data set up to 2023, overall, there is little sign of roundabout trade, although some slight signs of roundabout trade for Mexico and Viet Nam.



Urban Development

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Urban Amenities and Regional Performance: Case Study of Indonesia

ERIA Discussion Paper 2024-09, No. 516

By Titik Anas, Widdi Mugijayani, Estiana Cahyawati, and Muhammad Ridho

The aim of this paper is to evaluate the importance of urban amenities to economic development using Indonesia as a case study. Indonesia has rich micro-level data on urban amenities, which we group in this paper into 12 categories, namely education, health, religious, and shopping facilities; accommodations; banks; historical sites; recreation sites; restaurants; public transportation stations; modern shopping facilities; and gas stations. Using panel data of 2007 and 2014, we test how urban amenities affect regional development, proxied by employment and population growth. We show that education and shopping facilities significantly affect the growth of employment and population. We also found that the effect of the availability of education facilities is stronger in the regions with industrial parks.

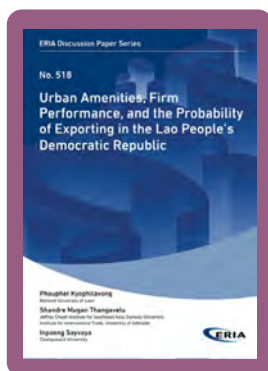


Measuring the Quality of Urban Amenities: A Tale of Bekasi and Tangerang, Indonesia

ERIA Discussion Paper 2024-10, No. 517

By Titik Anas, Widdi Mugijayani, Estiana Cahyawati, and Muhammad Ridho

The aim of this study is to measure the quality of urban amenities in Bekasi and Tangerang regions, Indonesia. The urban amenities range from transportation, public goods and services, private consumption goods, and entertainment. In this study, we use both primary and secondary data in which the primary data are obtained from web scraping process while the secondary data are collected from the stakeholders' data publication. It can be summarised that Tangerang has many better urban amenities compared to Bekasi region.



Urban Amenities, Firm Performance, and the Probability of Exporting in the Lao People's Democratic Republic

ERIA Discussion Paper 2024-11, No. 518

By Phouphet Kyophilavong, Shandre Mugan Thangavelu,
and Inpaeng Sayvaya

This paper examines the effects of urban amenities on the probability of firms exporting and firm productive performance in the Lao People's Democratic Republic (Lao PDR). A logit model was used, finding that urban amenities have a positive and statistically significant effect on firm productivity. However, the results do not indicate any impact on the probability of firms exporting. Based on these results, both the government and private sector should invest more in improving urban amenities to facilitate efficient business operations and to enhance firm competition in global markets. In addition, the government should invest more in human capital and production facilities, especially in information and communications technology, to increase firm performance as well as the probability that they will export.

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Urban Agglomeration, Firm Performance, and Global Value Chain in China

ERIA Discussion Paper 2024-14, No. 521
By Wenxiao Wang and Shandre Mugan Thangavelu

This study examines the relationship between city agglomeration and firm-level performance of global value chains (GVCs) in China. Using a novel dataset of night-time light data and survey data from Chinese manufacturing firms, the dynamic changes of urban agglomeration in China are studied, analysing their impact on firm-level productivity, GVC participation, and GVC upstreamness. The results highlight that the concentration of economic activity in urban areas can lead to productivity gains for firms, especially in the upstream stages of GVCs, which is characterised by higher value-added activities and better access to knowledge and technology. The study also finds that urban agglomeration promotes industrial specialisation and human capital spillovers, further improving the upstreamness of firms in GVCs. Firms in larger cities also tend to be more productive, participate more in GVCs, and are closer to the final demand of GVCs.



Economics of Happiness and ASEAN's People-Centric Smart City

ERIA Discussion Paper 2024-22, No. 529

By Kuriko Otsuka and Keita Oikawa

The economics of happiness explores self-reported happiness or subjective well-being (SWB) by integrating economic methods with psychological approaches and utilising large-scale surveys across diverse countries. Originating in Easterlin's pivotal work in 1974, this field examines the intricate link between factors of life events and environments and SWB. It reveals that material attainments (e.g. income) do not increase people's SWB in the long run, whereas non-material attainments enhance SWB over time. In the context of urban development, non-material factors positively affecting SWB include active participation in communities and self-determination in one's life. In recent years, well-being has been a key measure for smart city initiatives, including the Association of Southeast Asian Nations (ASEAN) Smart Cities Network. To enhance people's SWB through active community participation and decision-making in community services and activities, we propose that ASEAN promote a people-centric smart city (PCSC) model. This model defines a city that engages and includes citizens at every phase of city planning to ensure inclusivity. To implement a PCSC effectively, a comprehensive approach is essential, involving surveying well-being elements, clarifying community goals, enhancing digital literacy, setting rules and key performance indicators, and engaging citizens proactively. Collaboration amongst various sectors is crucial. A PCSC is not confined to online platforms; face-to-face meetings promote inclusivity and prevent exclusivity.



Co-publications

15

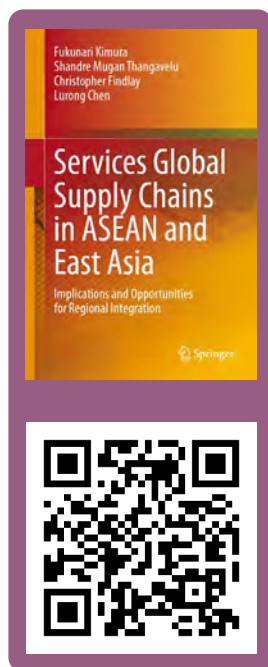
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Energy Transition and Carbon Neutrality in ASEAN: Developing Carbon Capture, Utilisation and Storage Technologies

Edited by Han Phoumin and Rabindra Nepal



This book brings together the key drivers of technology, economics, finance, and policy to explore the development and deployment of Carbon Capture, Utilisation, and Storage (CCUS) technologies in facilitating the clean energy transition and achieving carbon neutrality in ASEAN. Through policy-driven empirical studies, the book investigates multiple aspects of CCUS development and deployment in the region. Carefully selected case studies provide insights into the role of CCUS within ASEAN's regional and country-specific policy frameworks, highlight its technological applications in various industries, and examine the economic and financial aspects of its implementation. This comprehensive exploration of energy technology, economics, and policy is essential for readers seeking a thorough understanding of the recent empirical evidence on CCUS development in ASEAN and other Asian economies, including China.



Services Global Supply Chains in ASEAN and East Asia-Implications and Opportunities for Regional Integration

Edited by Fukunari Kimura, Shandre Thangavelu, Christopher Findlay, and Lurong Chen

The book offers both an analytical framework and empirical analysis of the development of services Global Value Chains (GVC) in the ASEAN and East Asian regions. It provides in-depth discussions at both the regional and country levels, exploring the evolution of services GVC activities. The book examines the role of services in structural transformation, regional development, and liberalisation, as well as their alignment with GVCs across ASEAN Member States and East Asian countries, including Australia, China, India, Japan, and the Republic of Korea.

Key areas of focus include specific services sectors such as tourism, business services, logistics, health, aviation, accounting, finance and insurance, business process outsourcing (BPO), wholesale and retail trade, and knowledge-based services, all analysed through the GVC framework.

The book takes a supply chain perspective on the development of services, offering a detailed assessment of policy implications and the design of regional integration strategies for services. It also delves into critical issues such as migration, workforce mobility, digital trade, and skills development, highlighting their importance for ASEAN countries to adapt to evolving GVC dynamics.

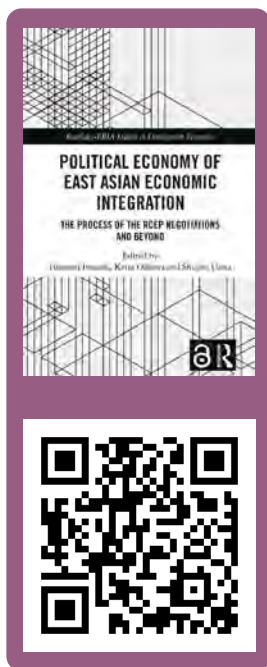
Comprising 15 chapters, the book includes an overview chapter, country-specific analyses for 13 ASEAN and East Asian nations, and a concluding chapter dedicated to policy discussions.

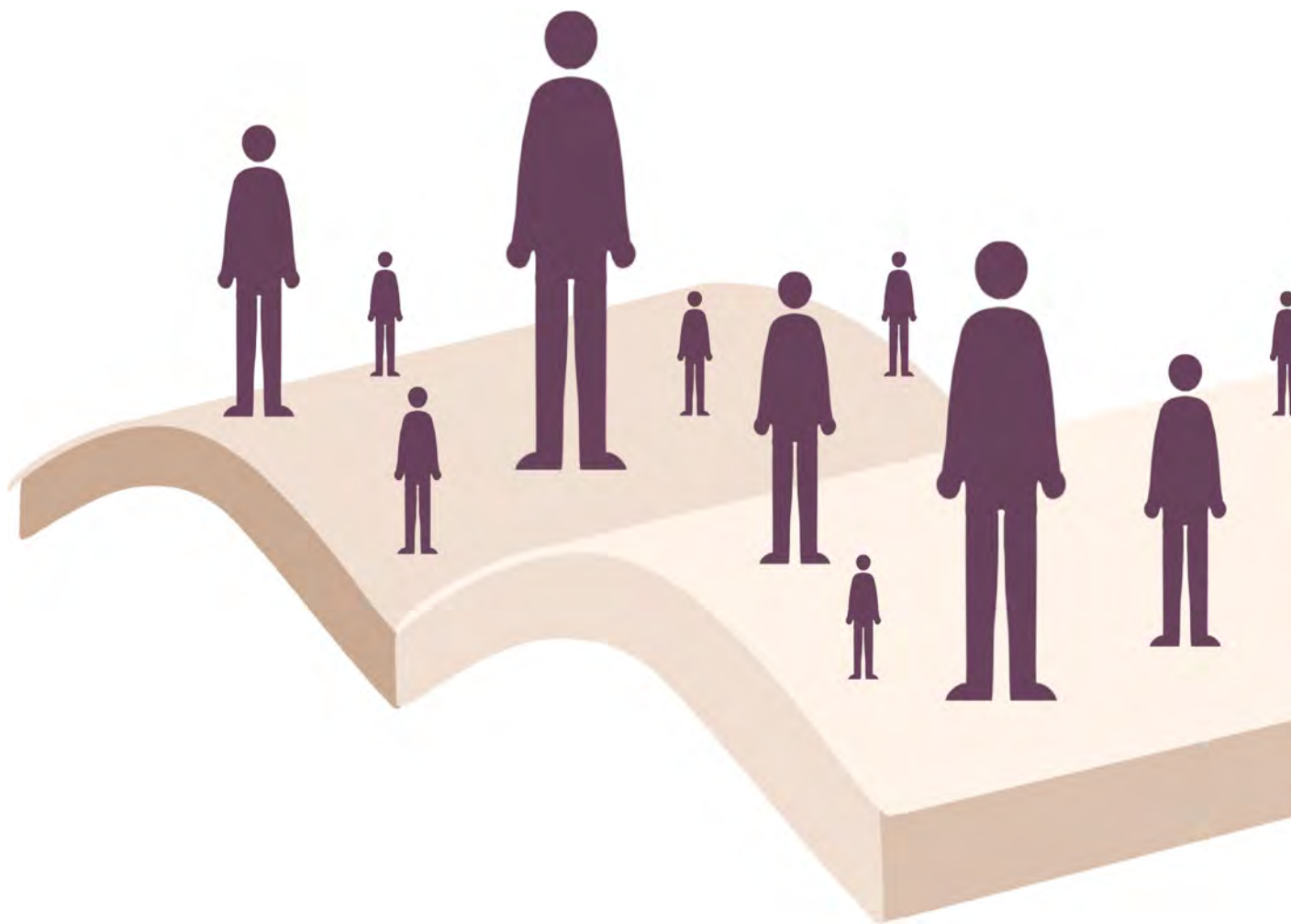
Political Economy of East Asian Economic Integration: The Process of the RCEP Negotiations and Beyond

Edited by Fusanori Iwasaki, Keita Oikawa, and Shujiro Urata

This book examines the influence of the Regional Comprehensive Economic Partnership (RCEP) on East Asia and globally from an international relations perspective. Through an analysis of RCEP's history and negotiation process, enriched by a collection of interviews with involved negotiators, readers gain insights into the origins, progression, and unique attributes of this mega-regional trade initiative. Case studies explore the negotiations from various state and economic bloc perspectives, including ASEAN, Australia, China, Japan, the EU, and the US. Additionally, the book highlights the evolving regional architecture in East Asia, considering movements like the Trans-Pacific Partnership (TPP), Comprehensive and Progressive TPP (CPTPP), the Belt and Road Initiative, and the Indo-Pacific Economic Framework (IPEF). Collectively, the chapters illustrate how both RCEP members and non-members navigate and leverage regional integration to serve their national interests.

This book is ideal for researchers in international relations, international politics, international economics, and international political economy, as well as policymakers and negotiators involved in shaping future regional economic integration initiatives.





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