# Panel Session 3
*SUSTAINABLE FINANCE*

# Short Biography of
# Dr. Fahlino F. Sjuib (Moderator)

*Boston College*



**Dr. Fahlino Sjuib** is Adjunct Professor of Economics at Boston College and Professor of Economics at Framingham State University (FSU). He is currently served as the Chairman of the Department of Economics and Director of MetroWest Economic Research Center (MERC) at FSU. His research is focusing on empirical macroeconomics and financial economics. His recent works have appeared in Journal of Business and Economics Research, International Research Journal of Finance and Economics, and Empirical Economics Letter.

He had served as a Senior Macroeconomic Advisor for the Australia Indonesia Partnership for Economic Governance (AIPEG). In his role at AIPEG, he provided technical support and analyses on fiscal policy and financial development issues in Indonesia. Prior to that, he served as a member of Indonesia-Japan Economic

Cooperation Working Team, funded by Japan International Cooperation Agency (JICA). As a member of the team, he prepared a policy study on monetary and macroeconomic policies in Indonesia. Fahlino teaches graduate macroeconomics course at Boston College. He received his Ph.D in Economics from Kansas State University (US).

# INTRODUCTION

Dr. Fahlino mentioned that even though people might have different ideas on what sustainable finance was, it could be defined as any forms of financial service which incorporate environmental, social and government component into business or investment decision. Even though sustainable finance has been around for quite sometimes, it is still relatively new. And just like any other new kinds of stuff, it still has its issues and challenges. However, it also brings some new opportunities.

Therefore, the third session of the seminar had two distinguished presenters who will talk about this issues, challenges, and opportunities, in fostering sustainable finance, especially the one that will support economic growth and great investment project.

*First Presentation by*
*Dr. Ulrich Volz*

# Short Biography of
# Dr. Ulrich Volz

*University of London*

**Dr. Ulrich Volz** is Head of the Department of Economics and Reader in Economics at SOAS University of London. He is also a Senior Research Fellow at the German Development Institute and Honorary Professor of Economics at University of Leipzig. Ulrich serves as a member of the Advisory Council of the Asian Development Bank Institute, chairman of the Japan Economy Network, and co-editor-in-chief of the Asia Europe Journal. Ulrich is a lead author of a recent report commissioned by UN Environment on Climate Change and the Cost of Capital in Developing Countries and co-editor of the forthcoming Routledge Handbook of Banking and Finance in Asia.

Ulrich was the 2017 Banque de France Chair at EHESS in Paris. He also taught at Peking University, Kobe University, Hertie School of Governance, Freie Universität Berlin, CUFE, and IDE-JETRO. He spent stints working at the ECB and the EBRD and held

visiting positions at University of Oxford, University of Birmingham, ECB, Bank Indonesia, and Aoyama Gakuin University. He was also a Fox International Fellow and Max Kade Scholar at Yale University. Ulrich has been an adviser to the UN Inquiry into the Design of a Sustainable Financial System and several central banks and international organisation. He holds a Ph.D from Freie Universität Berlin.

# Asia's Green Finance Challenge

## By: Dr. Ulriczh Volz

Dr. Ulrich emphasized that to place the Asian economies onto a sustainable development requires a shift in investment away from greenhouse gas, fossil fuel and natural resource intensive industries towards more resource efficient technologies and business models. The financial sector will have to play a central role in this green transformation.

The paper aims to discuss the need for greening the financial system and the role of financial governance. It also defines green finance to comprise all forms of investment or lending that consider the environmental effect and enhance environmental sustainability. Green finance also has an essential element of sustainable investment and banking, where investment and lending decisions are taken based on environmental screening and risk assessment to meet environmental sustainability standards.

Dr. Ulrich also mentioned that one of the reasons financial authorities should care about climate change and other environmental challenges is because environmental risk constitutes a significant systemic risk for the financial sector, and also because of the view

that credit provision to socially undesirable activities is a credit market failure. Central banks and financial regulators are also credible and powerful actors, especially in developing countries.

However, there are limits to an environmental role of central banks such as:

1. On a functional level, central banks will encounter problems if they are supposed to achieve too many objectives but have too few policy instruments
2. There is a danger of vesting too much power in unaccountable institutions
3. Central banks becoming politicized
4. Overstretching mandates

Recently, the Asian financial authorities have tried to integrate environmental risks into financial regulation, released industry guidelines for sustainable market practice, developed a green bond market and take the green finance globally.

The paper also discussed that currently, only a few financial institutions in Asia integrate environmental, social and governance (ESG) factors into the lending or investment decision-making process. Therefore, financial authorities need to raise awareness among financial institutions. In the case of Indonesia, it needs leadership from Indonesia authority as a driver of

change, for example, OJK, by holding a dialogue and socialization to raise awareness.

# Asia's Green Finance Challenge

Ulrich Volz
SOAS University of London & DIE

**OJK International Research Seminar**
**'Financial Sector Development and the Future of Finance'**
**Bali, 14 October 2018**

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# Overview

- Introduction
- Why should financial authorities care about climate change and other environmental challenges?
- What are Asian financial authorities doing?
- What are Asian banks and institutional investors currently doing?
- Priorities for fostering green finance

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# I. Introduction

- To place the Asian economies onto a sustainable development pathway requires an unprecedented shift in investment
  - Away from GHG, fossil fuel and natural resource intensive industries
  - Towards more resource efficient technologies and business models
- Financial sector will have to play central role in this 'green transformation'

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# Problem statement

## TOO MUCH OF THIS



## NOT ENOUGH OF THIS



*"Finance overwhelms the real economy. The lessons of the global financial crisis have not been assimilated, and we are learning all too slowly the lessons of environmental deterioration." – Pope Francis*

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**Carbon Intensity of Selected Asian Countries (CO2 emissions in kg per 2005 US$ of GDP)**

Source: Compiled with data from World Development Indicators (December 2017).
Note: Scale for China is on the right axis.

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**Asia infrastructure investment needs by sector, 2016-2030 (in trillion USD)**

Sanitation, 0.8
Telecommunication, 2.3
Transportation, 8.4
Power, 14.7

Source: ADB (2017)

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# Definition of green finance

"Green finance comprises all forms of investment or lending that consider environmental effect and enhance environmental sustainability. An important element of green finance is sustainable investment and banking, where investment and lending decisions are taken based on environmental screening and risk assessment to meet environmental sustainability standards." (Volz et al. 2015: 2)

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# Aims of this presentation

- Discuss the need for greening the financial system and the role of financial governance
- Provide an overview of green financial governance initiatives across Asia
- Review the state of green lending & investment in Asia
- Discuss barriers to green investments and financial policy and market innovations to increase green finance in Asia

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## II. Why should financial authorities care about climate change and other environmental challenges?

- Environmental risk constitutes a significant systemic risk for the financial sector
  - CBs have a pivotal role to play in mitigating systemic risk by identifying system-wide vulnerabilities and using their panoramic view of the financial system to connect the dots
- The provision of credit to socially undesirable activities – such as carbon intensive businesses – can be characterised as a credit market failure
  - Green financial regulation as an application of the theory of the second best
- Central banks and financial regulators as credible and powerful actors, esp. in developing countries

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**Potential policy tools to impact on investment decisions & the creation and allocation of credit**

- Green micro and macro-prudential regulation
- Green finance frameworks
- Information disclosure requirements
- Listing requirements
- Sustainable & responsible CB reserve management
- Green credit guidelines
- Directed green credit policy instruments
- Green differentiated reserve requirements or capital requirements
- Green quantitative easing
- Accepting carbon certificates as part of commercial banks' legal reserves
- Convening power
- …

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# The limits to an environmental role of CBs

- On a functional level, CBs will encounter problems if they are supposed to achieve too many objectives and have too few tools / policy instruments
  - Tinbergen rule
  - Conflicts with other objectives?
  - CBs need to be equipped with effective instruments in order to achieve sustainability goals without compromising other goals
- Danger of vesting too much power in unaccountable institutions
- CBs becoming politicised
  - "Neutrality" of central banking may be at risk
- Overstretching mandates

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## III. What are Asian financial authorities doing?

- **Integrating environmental risks into financial regulation**
  - Bank Bangladesh requires environmental risk management from bank and non-bank financial institutions since 2011
  - In 2012, the China Banking Regulatory Commission issued *Green Credit Guidelines*
    - Following up on the *Green Credit Policy* introduced in 2007
  - The State Bank of Vietnam requires financial institutions to take environmental factors into account in their lending decisions since 2015
  - In 2017, the Indonesian Financial Services Authority (OJK) issued *Regulation on Sustainable Finance* (POJK)

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- **Industry guidelines for sustainable market practice**
  - In 2014, OJK published a *Roadmap for Sustainable Finance in Indonesia*
  - In 2014, Japan's Financial Services Agency issued the Japan Stewardship Code
  - In 2014, the Bank of Mongolia & Mongolia Banking Association published *Mongolia Sustainable Finance Principles and Sector Guidelines*
  - In 2014, the Securities Commission Malaysia issued the *Sustainable and Responsible Investment Sukuk Framework*
  - In 2015, the Indian Banking Association introduced the *National Voluntary Guidelines for Responsible Finance*
  - In 2016, the People's Bank of China issued *Guidelines for Establishing the Green Financial System*
  - In 2016, Hong Kong's Securities and Futures Commission published *Principles of Responsible Ownership*
  - In 2017, the Securities Commission Malaysia issued *Guidelines on Sustainable and Responsible Investment*
  - In 2017, OJK introduced the regulation on *Sustainable Finance for Financial Services Institutions, Issuers and Public Companies*

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- **Developing a green bond market**
  - In 2015, the People's Bank of China published a Green Financial Bond Directive
    - In 2017, the China Securities Regulatory Commission released *Green Bond Guidelines*
  - In 2016, the Securities and Exchange Board of India issued *Guidelines for the Issuance and Listing of Green Bonds*
  - In 2017, the Japanese Ministry of the Environment issued *Green Bond Guidelines*
  - In 2017, the Monetary Authority of Singapore developed a *Green Bond Grant Scheme*
  - In 2017, OJK published a framework and regulation for green bond issuance in Indonesia
  - In 2017, the ASEAN Capital Markets Forum published the *ASEAN Green Bond Standards*
  - In 2018, Indonesia raised US$1.65bn in first Asian sovereign green bond sale
- **Taking green finance global**
  - In January 2016, the Chinese G20 Presidency launched the Green Finance Study Group which is co-chaired by the People's Bank of China and the Bank of England)
    - Renamed into G20 Sustainable Finance Study Group

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## Sustainable Banking Network (est. 2012)

- Knowledge-sharing network of banking regulators and banking associations
- Supports a level playing field for E&S risk management by financial institutions
- Promotes green and inclusive lending

## Central Banks and Supervisors Network for Greening the Financial System (est. 2017)

- Established at the Paris "One Planet Summit" in December 2017 by 8 central banks and supervisors
- 18 members to date: BaFin, Bank al Maghrib, Banco de España, Banco de Mexico, Bank of England, Bank of Finland, Banque de France, French Autorité de Contrôle Prudentiel et de Résolution, De Nederlandsche Bank, Deutsche Bundesbank, European Central Bank, Swedish Finansinspektionen, **Japan FSA**, **Monetary Authority of Singapore**, National Bank of Belgium, Oesterreichische Nationalbank, **People's Bank of China**, Reserve Bank of Australia, **Bank Negara Malaysia**
- The NGFS has formed three workstreams:
  – Supervisory/microprudential
  – Macrofinancial
  – Scaling up green finance

**NGFS**
Central Banks and Supervisors
Network for Greening the Financial System

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## IV. What are Asian banks and institutional investors currently doing?

- For the time being, only few financial institutions in Asia integrate environmental, social and governance (ESG) factors into the lending or investment decision making process
- Few staff in the industry have been trained in ESG issues
- No disclosure requirements that address environmental or long-term systemic risk factors
- Financial authorities need to raise awareness among financial institutions

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## Sustainable investment assets under management by market (US$ millions)

| | 2011 | 2013 | 2016 |
|---|---|---|---|
| Bangladesh | | 14 | |
| People's Republic of China | 1,535 | 1,729 | 7,290 |
| Hong Kong, China | 7,328 | 11,329 | 13,538 |
| India | 153 | 115 | |
| Indonesia | 595 | 1,142 | |
| Japan | 10,000 | 6,507 | 473,570 |
| Republic of Korea | 6,288 | 8,426 | 7,290 |
| Malaysia | 9,956 | 15,087 | 15,621 |
| Pakistan | 427 | 505 | |
| Singapore | 2,967 | 5,660 | |
| Taipei,China | 724 | 714 | |
| Thailand | 14 | 20 | |
| Viet Nam | | 195 | |
| Asia (including Japan) | 39,987 | 51,443 | 525,640 |
| Asia (excluding Japan) | 29,987 | 44,936 | 52,070 |

Source: Compiled with data from ASrIA (2015: 11), GSIA (2017: 16, 27), JSIF (2013a: 4), JSIF (2013b).

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## Percentage of socially responsible investments relative to total managed assets

| | 2012 | 2014 | 2016 |
|---|---|---|---|
| Europe | 49.0 | 58.8 | 52.6 |
| Canada | 20.2 | 31.3 | 37.8 |
| United States | 11.2 | 17.9 | 21.6 |
| Australia/New Zealand | 12.5 | 16.6 | 50.6 |
| Asia | 0.6 | 0.8 | 0.8 |
| Japan | | | 3.4 |
| Global | 21.5 | 30.2 | 26.3 |

Source: GSIA (2015: 7), GSIA (2017: 7).
Note: Asia figures for 2012 and 2014 include Japan.

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## Relatively low uptake of international initiatives for sustainable finance

- **Equator Principles:** 12 out of 91 Equator Principles Financial Institutions (13%) are from the Asia Pacific region
- **UNEP Statement of Commitment by Financial Institutions on Sustainable Development:** 38 out of 214 global signatories (17.8%) are from the Asia Pacific region
- **Principles for Responsible Investment:** Only 122 out of 1,874 Signatories to the Principles for Responsible Investment (6.5%) are from Asia

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## Green lending by Chinese banks (in RMB trillion and as share of total banking assets)



| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|
| Green lending | 0.341 | 0.371 | 0.856 | 1.172 | 1.468 | 3.580 | 5.2 | 6.01 | 7.01 | 7.51 |

Green lending          Green lending/total assets

Source: Compiled with data from Zadek and Zhang (2014: 17), UNEP (2017), CBRC (2016: 192), China Daily (2015) and CBRC. .
Note: Scale for green lending/total assets is on the right axis.

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Green bond issuance globally and in China

Source: Climate Bonds Initiative (2017).

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Drivers of change? The Indonesian case

Government & regulator leadership

Pressure on foreign investors

Environmental risk

Sector leadership

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## V. Priorities for green finance

- Solving 'real economy' barriers and bottlenecks remains crucial
- But financing measures complementary
  - Capacity building, technical assistance & information in banks and NBFIs
  - Strengthening risk assessment regulations
    - Include environmental risk in micro & macro prudential analysis
  - Development of long-term refinancing sources
  - Regulation on disclosure

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## Summary

- To achieve sustainable and low-carbon development, large investments will be needed in renewable energy generation, energy efficiency, smart transportation networks, and many other areas that will help the shift towards sustainable patterns of production and consumption
- Even though targeted public finance will be crucial in supporting the 'green transformation', large parts of the necessary financing must come from private sources
- Importance of accounting for environment- and climate-related risks in the financial sector
- Important role of financial governance in greening financial systems
- Already several examples for public initiatives in Asia aimed at aligning the financial system with sustainable development as well as examples of innovative green financial products and services developed by the financial sector

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**Get in touch!**
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*Second Presentation by
Dr. Poppy Ismalina*

# Short Biography of
# Dr. Poppy Ismalina
*Universitas Gadjah Mada*

**Dr. Poppy Ismalina** is an Associate Professor in Department of Economics, Universitas Gadjah Mada. She has deep knowledge and extensive experience on environmental economics and development economics. Previously working as Associate Director of Green Knowledge, Green Prosperity Project in MCA Indonesia, Ms. Ismalina has numerous policy-research and consulting experience, including working as a Policy Advisor developing academic paper of the new regulation in Indonesia's Oil and Gas Sector for SKK Migas and Ministry of Energy and Mineral Resources (2011-2014), the Team Leader for Economic Analysis for PNPM After Disaster Economic Impact Analysis Study: National Program for Community Empowerment in Rural Areas with World Bank (2014-2015), the Team Leader for Governance Reform in Oil and Gas Sector with SKK Migas (2014), and many more. Her publications include "An Integrated Analysis of Socioeconomic Structures and Actors in Indonesian Industrial Clusters in Indonesian Industrial Clusters" published by University

of Groningen (2011) and "The Impact of Economic Reform on Unemployment in Indonesia", in Benson J and Zhu Y (eds) Unemployment in Asia, Routledge Publication, UK (2005). Currently, she is the Policy Advisor to Environmental & Social Risk Management Program, International Finance Corporation (IFC). She intensively worked with OJK and supported the drafting of Sustainable Finance Policy in Indonesia, issued in 2017.

Poppy holds a B.Sc from Unversitas Gadjah Mada (1994), Master of Economic Development from Australian National University, and a Ph.D from University of Groningen (2011).

# Corporate ESG Profile on Performance: Evidence from Indonesian Insurance Industry

## By: Dr. Poppy Ismalina

In her presentation, Dr. Poppy discussed the progress of sustainable finance in Indonesia. However, firstly, she defined sustainable insurance as the implementation of sustainable finance in the insurance industry by incorporating environmental, social and governance (ESG) aspect into decision making and risk identification.

OJK has performed several steps regarding this sustainable insurance, for example by releasing Roadmap on Sustainable Finance in 2014, Sustainable Finance Policy in 2017 and Green Bonds Policy in Indonesia, in 2017.

The paper aims to find out about the level of Indonesian insurance understanding of ESG principles, the current circumstances of ESG implementation by Indonesian insurance firms, the potentials of the sustainable insurance product development in Indonesia and how insurance firm's sustainable profile affect firm's performance. The research was performed by surveying

44 general insurance companies from mid-July to mid-September 2018, using December 2017 data.

The study showed that Indonesian insurance companies were relatively ready to implement sustainable insurance and have sufficient knowledge of developing sustainable finance principles. It also showed that the majority of insurance firms have held the capacity building programs to implement sustainable insurance and measure the ESG risk. Simultaneously, insurance firms have aligned their organizational structures, standard operating procedures, and codes of conduct to the sustainable insurance principles.

The implications for the study are as follow:
1. OJK should raise the insurance firms' awareness of sustainable finance principles, which would motivate insurers to develop sustainable products.
2. OJK should continuously improve the financial literacy of the potential clients of sustainable insurance products on the ESG risk.
3. Broadening the horizon of ESG risk knowledge of the potential clients of sustainable insurance products could help insurance companies market their sustainable products more effectively and efficiently.

*Corporate ESG Profile on Performance:*
*Evidence from Indonesian Insurance Industry*

**Poppy Ismalina, Ph.D**
**Eddy Junarsin, PhD**
**Dr. Istiana Maftuhah**
**Prof. Dr. Ainun Naim**

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**The Indonesian Financial Services Authority**

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## Progress Sustainable Finance in Indonesia

- **Key Regulations**: Roadmap on Sustainable Finance (2014), Sustainable Finance Policy (2017) and Green Bonds Policy in Indonesia (2017). Sustainable Finance Policy: **Umbrella Policy** in July 2017

- Member of **Sustainable Banking Network** (created by IFC in 2012, members include emerging markets central bank, financial regulators, and banking association **from 35 countries)**

- Pilot program with **8 Indonesian bank** to integrate ESG aspects into their practices (**Indonesia Sustainable Finance Initiative**).
- Issuance of Guidelines on SF for banks (2018) and specific-sectors guidelines

- **ESRM and Green Finance trainings** for banks



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Environmental-Social Based Activities
(POJK no. 60/2017, Green Bond)

**Reference for Sustainable Finance Products/Services**

| | |
|---|---|
| 1. | Clean and renewable energy |
| 2. | Eenergy efficiency and conservation |
| 3. | Pollution prevention and control |
| 4. | Management of biological natural resources and sustainable land use |
| 5. | Conservation of terrestrial and aquatic biodiversity |
| 6. | Environmentally friendly transportation |
| 7. | Sustainable water and wastewater management |
| 8. | Adaptation to climate change |
| 9. | Products that can reduce resource use and produce less pollution (eco-efficient) |
| 10. | Green buildings |
| 11. | Micro, small and medium enterprises (MSMEs) |

Dr. Indro Pranoto (2016)

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# RESEARCH QUESTIONS

- SF is mandatory for insurance companies in Indonesia starts at **January, 1, 2020** (article 3, POJK No.51/2017)

- Sustainable Insurance: the implementation of sustainable finance in insurance industry by incorporating ESG aspect into decision making and risk identification

- We are willing to know:
    (1) what is the level at which Indonesian insurance firms' understanding of ESG principles?
    (2) What is the current circumstances of ESG implementation by Indonesian insurance firms?;
    (3) How are the potentials of sustainable insurance product development in Indonesia?
    (4) How does insurance firm's sustainable profile affect firm's performance?

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## EXISTING PRODUCT DEVELOPMENT

- Wang and Zhi's (2016) study shows that there are six potential products that an insurer can offer to implement sustainable finance: environmental fund and biodiversity fund, debt-for-environment swaps, forestry securitization, weather derivatives, nature-linked securities, and sustainable investment fund.

- Currently, Indonesian insurance firms have developed at least three types of sustainable products: (1) agriculture, (2) micro-insurance (in 2017, Rp278.2 billion), and (3) weather index

# RESEARCH METHODS

## Research Design

- A questionnaire survey to general insurance companies from mid July to mid September 2018
- Total sample is 44 general insurance firms
- Data from OJK for econometric models: net profit, premium income, underwriting surplus, claims incurred, total assets, total liability, and market share (audited Dec 2017 data)

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## Research Framework

I. SEM –Path Analysis



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## Research Framework

### II. Econometric Model

1. $Log\,(NP_i) = \alpha + \beta_1 KNO_i + \beta_2 REA_i + \beta_3 DEV_i + \beta_4 POT_i + \beta_5 PROD_i + \beta_6 PRIN_i + \beta_7 PROG_i + \frac{\beta_8 LogL_i}{Log(TA)_i} + \frac{\beta_9 MS_i}{Log(TA)_i} + u_i$

2. $Log\,(US_i) = \alpha + \beta_1 KNO_i + \beta_2 REA_i + \beta_3 DEV_i + \beta_4 POT_i + \beta_5 PROD_i + \beta_6 PRIN_i + \beta_7 PROG_i + \frac{\beta_8 LogL_i}{Log(TA)_i} + \frac{\beta_9 MS_i}{Log(TA)_i} + u_i$

3. $Log\,(PI_i) = \alpha + \beta_1 KNO_i + \beta_2 REA_i + \beta_3 DEV_i + \beta_4 POT_i + \beta_5 PROD_i + \beta_6 PRIN_i + \beta_7 PROG_i + \frac{\beta_8 LogL_i}{Log(TA)_i} + \frac{\beta_9 MS_i}{Log(TA)_i} + u_i$

4. $Log\,(CI_i) = \alpha + \beta_1 KNO_i + \beta_2 REA_i + \beta_3 DEV_i + \beta_4 POT_i + \beta_5 PROD_i + \beta_6 PRIN_i + \beta_7 PROG_i + \frac{\beta_8 LogL_i}{Log(TA)_i} + \frac{\beta_9 MS_i}{Log(TA)_i} + u_i$

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## Research Framework

Where: $\beta_1, ..., \beta_9$ =    Regression coefficients on independent variables;

   $i$    =   44 insurance companies

- **Dependent variables:**

1. $Log(NP_i)$ = Total net profit of an insurance firm (in logarithm);
2. $Log(US_i)$ = Total underwriting surplus of an insurance firm (in logarithm);
3. $Log(PI_i)$ = Total premium income of an insurance firm (in logarithm);
4. $Log(CI_i)$ = Total claims incurred of an insurance firm (in logarithm);

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## Research Framework

- **Independent Variables**:
    1. Insurer's level of understanding on principle of sustainable finance (KNO)
    2. Insurer's readiness of the implementation of sustainable finance (REA)
    3. Insurer's current level of sustainable insurance product development (DEV)
    4. Insurer's potential level of sustainable insurance product development (POT)
    5. Number of sustainable insurance products an insurance firm is going to develop (PROD)
    6. Number of implemented principles of sustainable insurance by an insurance firm (PRIN)
    7. Number of implemented sustainable insurance programs by an insurance firm (PROG)

- **Control Variables:**
    1. $Log$ ($L_i$)=Insurance firm's total liabilities (in logarithm);
    2. $LogTA_i$=Insurance firm's total assets (in logarithm);
    3. $MS_i$=Insurance firm's market share (in percentage);

# CHAPTER 4
## RESULTS AND DISCUSSION

Profile

- Total respondents in this research are 44 people, comprised of 15 persons as directors (34 percent) and 29 persons as others (66 percent).
- Based on total assets owned, the majority of companies are **small-scale** insurance companies with total assets of less than Rp2 trillion (29 respondents or 66 percent), there are **69 small medium-sized companies** (20 percent), four respondents (**11 percent**) are classified as **big firms**, and one respondent (2 percent) as medium-sized companies.

Main Analysis

## SEM Results

- There is a positive effect of [KNO] on [POT], with a coefficient of 0.40 significant at 1% level. This means [POT] will improve by 0.40 points when [KNO] increases by one point. Accordingly, when an insurance firm has knowledge toward sustainable insurance products, it shows a higher potential to develop sustainable insurance products in the future.
- There is a significantly positive influence (at 1% level) of [KNO] on [REA], with a coefficient of 0.74. This indicates that [REA] will increase by 0.74 points when [KNO] increases by one point, thus explaining the fact that if an insurance company has knowledge of sustainable insurance product, it will be more ready to implement sustainable finance in its business activities.
- This finding suggests that [DEV] will increase by 0.61 points if [REA] increases by one point. Therefore, when an insurance company is ready to implement sustainable finance in its business activities, it will be more likely to develop sustainable insurance products that correspond with the environmental-based activities and ESG issues in its business practice.
- This means that [POT] will be higher by 0.47 points when [DEV] increases by one point, substantiating the conjecture that if an insurance firm has developed insurance products that are aware of the environmental-based activities and ESG issues in its business practice, the insurance company will show a higher potential to develop sustainable insurance products in the future.

Dr. Indro Pranoto (2016)

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## Multivariate Analysis: Convergent Validity

| Parameter | Variable | Result | Rule of Thumb | Conclusion |
|-----------|----------|--------|---------------|------------|
| Average Variance Extracted (AVE) | KNO | 0.617 | More than 0.5 | Acceptable |
| | REA | 0.595 | | Acceptable |
| | DEV | 0.491 | | Not Acceptable |
| | POT | 0.746 | | Acceptable |
| Communality | KNO | 0.780 | More than 0.5 | Acceptable |
| | REA | 0.766 | | Acceptable |
| | DEV | 0.689 | | Acceptable |
| | POT | 0.862 | | Acceptable |

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## Multivariate Analysis: Discriminant Validity

**Correlations among Latent Variables with Square Roots of AVEs**

|         | KNO     | REA     | DEV     | POT     |
|---------|---------|---------|---------|---------|
| **KNO** | (0.786) | 0.736   | 0.631   | 0.595   |
| **REA** | 0.736   | (0.771) | 0.558   | 0.409   |
| **DEV** | 0.631   | 0.558   | (0.701) | 0.649   |
| **POT** | 0.595   | 0.409   | 0.649   | (0.864) |

*Note: Square roots of average variances extracted (AVEs) shown on diagonal*

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## Multivariate Analysis: Reliability

| Parameter          | Variable  | Result | Rule of Thumb   | Conclusion |
|--------------------|-----------|--------|-----------------|------------|
| Cronbach's Alpha   | KNO       | 0.936  | More than 0.6   | Acceptable |
|                    | REA       | 0.950  | More than 0.6   | Acceptable |
|                    | DEV       | 0.940  | More than 0.6   | Acceptable |
|                    | POT       | 0.965  | More than 0.6   | Acceptable |
| **Parameter**      | **Indicator** | **Result** | **Rule of Thumb** | **Conclusion** |
| Composite Reliability | KNO    | 0.946  | More than 0.7   | Acceptable |
|                    | REA       | 0.956  | More than 0.7   | Acceptable |
|                    | DEV       | 0.947  | More than 0.7   | Acceptable |
|                    | POT       | 0.970  | More than 0.7   | Acceptable |

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## Multivariate Regression Results

| Variable | ln(NP) (1) | ln(US) (2) | ln(PI) (3) | ln(CI) (4) |
|---|---|---|---|---|
| KNO | 1.228* | 0.307 | 0.773* | -0.049 |
| | (1.76) | (0.74) | (1.68) | (-0.11) |
| PRIN | 0.050 | 0.058 | -0.034 | -0.051 |
| | (0.40) | (0.74) | (-0.40) | (-0.60) |
| REA | -0.895 | -0.278 | -0.214 | -0.036 |
| | (-1.47) | (-0.73) | (-0.70) | (-0.09) |
| PROG | -0.115 | -0.068 | 0.101 | 0.191 |
| | (-0.36) | (-0.39) | (0.46) | (1.00) |
| DEV | 0.138 | -0.202 | -0.281 | 0.491 |
| | (0.24) | (-0.57) | (-0.86) | (1.29) |
| POT | -0.752 | 0.003 | -0.231 | -0.400 |
| | (-1.51) | (0.01) | (-0.81) | (-1.23) |
| PROD | 0.004 | 0.012 | 0.016 | 0.000 |
| | (0.12) | (0.64) | (0.90) | (-0.01) |
| RLTA | 14.115* | 17.15822*** | 20.33843*** | 18.75219*** |
| | (2.00) | (3.82) | (3.98) | (3.76) |
| RMSTA | 973.740*** | 861.8567*** | 669.611*** | 970.2767*** |
| | (5.30) | (7.47) | (6.19) | (7.81) |
| Intercept | -3.402 | -3.824 | -9.154 | -6.551 |
| | (-0.46) | (-0.82) | (-1.67) | (-1.26) |
| Adj. $R^2$ | 0.5530 | 0.698 | 0.735 | 0.750 |
| F-stat | 5.95*** | 12.06*** | 9.83*** | 15.00*** |
| N | 37 | 44 | 42 | 43 |

## OLS Regression Results

- Overall, our regression models exhibit sound R-squared values for a cross-sectional study.
- The F-statistic is strongly significant in all regression models. Hence, **the independent variables are jointly and significantly able to explain the dependent variable**.
- For the significance of individual independent variables, the control variables RLTA and RMSTA have significant coefficients in all examined models.

## OLS Regression Results

- In Model 1, the finding suggests that insurance firms with a better level of understanding on sustainable finance principles would experience a stronger improvement in its net income.
  - if the level of knowledge increases by one level, then the net profit will go up by 1.23%.
- Model 3 reports that an insurer's level of understanding on sustainable finance principles has a positive and significant relation to the insurer's premium income.
  - Premium income is estimated to increase by 0.77% for every improvement score in the level of knowledge of sustainable finance by insurance companies.

## Econometric Analysis: Heteroskedasticity Test

The heteroskedasticity check reveals that all regression models fulfill the homoskedastic assumption, where the variances of errors are stable throughout all observations. In this research, we utilize the White's test to examine the homoskedasticity assumption, and find that heteroskedasticity is not prevalent in all of our regression models.

| Model | Chi²-stat | Result |
|-------|-----------|--------|
| Model 1 | 0.21 | No heteroskedasticity |
| Model 2 | 1.09 | No heteroskedasticity |
| Model 3 | 0.13 | No heteroskedasticity |
| Model 4 | 1.92 | No heteroskedasticity |

## IV.4. Econometric Analysis: Multicollinearity Test

|  | KNO | PRIN | REA | PROG | DEV | POT | PROD | RLTA | RMSTA |
|---|---|---|---|---|---|---|---|---|---|
| **KNO** | 1.000 | | | | | | | | |
| **PRIN** | 0.176 | 1.000 | | | | | | | |
| **REA** | 0.739 | 0.215 | 1.000 | | | | | | |
| **PROG** | 0.444 | 0.584 | 0.317 | 1.000 | | | | | |
| **DEV** | 0.655 | 0.242 | 0.577 | 0.378 | 1.000 | | | | |
| **POT** | 0.620 | -0.071 | 0.430 | 0.126 | 0.664 | 1.000 | | | |
| **PROD** | 0.074 | 0.257 | 0.273 | -0.078 | 0.250 | 0.242 | 1.000 | | |
| **RLTA** | -0.051 | -0.207 | -0.005 | 0.190 | 0.033 | 0.086 | -0.337 | 1.000 | |
| **RMSTA** | 0.197 | 0.041 | 0.254 | 0.028 | 0.309 | 0.079 | 0.004 | 0.222 | 1.000 |

The independent variables are found to have a correlation coefficient below 0.8, corroborating the notion that none of them is strongly correlated to one another. This indicates that the regression models (1) to (4) do not suffer from the multicollinearity problem.

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## Preferred Options for Priority Program



**First Priority of Sustainable Finance Programs: organizational adjustment**

- 14% — Insurance products development based on the category of environmental based business activities (KUBL).
- 36% — Company's internal capacity Increase for the implementation of sustainable finance.
- 50%

**Second Priority of Sustainable Finance Programs: capacity building**

- 20% — Insurance products development based on the category of environmental based business activities (KUBL).
- 48% — Company's internal capacity Increase for the implementation of sustainable finance.
- 32% — Organizational, risk management, governance, and/or standard operating procedures adjustments that implement the principles of sustainable finance.

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Two significant constraints for new products development

Insurance Firms' Premia and Claims on Sustainable Insurance Products (for the Period of 2012-2018 in Rupiah)

| Year | Number of Insurance Firms | Average Premium | Standard Deviation of Premium | Average Coverage | Standard Deviation of Coverage |
|------|---------------------------|-----------------|-------------------------------|------------------|--------------------------------|
| 2012 | 18 | 8,450,000,000 | 2,820,000,000 | 1,510,000,000 | 797,000,000 |
| 2013 | 19 | 68,100,000,000 | 25,300,000,000 | 12,800,000,000 | 7,450,000,000 |
| 2014 | 23 | 116,000,000,000 | 55,000,000,000 | 29,000,000,000 | 20,800,000,000 |
| 2015 | 24 | 137,000,000,000 | 61,900,000,000 | 32,100,000,000 | 25,500,000,000 |
| 2016 | 26 | 141,000,000,000 | 61,100,000,000 | 48,600,000,000 | 33,600,000,000 |
| 2017 | 27 | 136,000,000,000 | 65,900,000,000 | 50,300,000,000 | 34,800,000,000 |
| 2018 | 27 | 50,800,000,000 | 17,600,000,000 | 14,000,000,000 | 8,170,000,000 |

*Note: Premium and coverage data in 2018 are for the first and second quarters only*

**Conclusion and Policy Implication**

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## Conclusion

- Indonesian insurance companies are relatively ready to implement sustainable insurance.
- Insurance firms in Indonesia have sufficient knowledge of developing sustainable finance principles.
- The majority of insurance firms have held the capacity building programs for their human capital to implement the sustainable insurance and measure the ESG risk.
- Simultaneously, insurance firms have aligned their organizational structures, standard operating procedures, and codes of conduct to the sustainable insurance principles.

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## Conclusion

- The insurers are faced with a difficulty creating and leveraging sustainable insurance products.
- The lack of insurer's interest in developing sustainable insurance products is rendered by the difficulties in risk identification and measurement.
- The most promising sustainable insurance products that an insurer is willing to develop in the future are micro-insurance, sharia micro-insurance, damage insurance for low emission vehicles, and damage insurance for environmentally-friendly machinery.

## Conclusion

- The SEM results conclude that insurer's knowledge and current development in sustainable insurance products have a positive effect on the insurance firm's willingness to develop sustainable insurance products in the future.
- Our regression analysis provides evidence that an insurance company's level of understanding of sustainable finance principles is positively and significantly related to firm performance. Therefore, the insurer's level of knowledge of sustainable finance principles could be one of the factors that enhance its net profit and premium income.

Implications

- First, Indonesian Financial Services Authority (OJK) should raise its campaign effort to increase insurance firms' awareness on sustainable finance principles, which would motivate insurers to develop sustainable products.
- The OJK should continuously improve the financial literacy of the potential clients of sustainable insurance products on the ESG risk.
- Broadening the horizon of ESG risk knowledge of the potential clients of sustainable insurance products could help insurance companies market their sustainable products more effectively and efficiently.

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During the discussion session, Dr. Ulrich mentioned that he found it interesting that among 44 insurance companies that were being surveyed, 91% have been implementing the principle of responsible investment, while 75% already familiar with the concept. He also appreciated the fact that there was a significant improvement in the sustainable finance condition in Indonesia.

While in response to Dr. Ulrich study, Dr. Poppy Ismalina suggested Dr. Ulrich added some revisions which would represent some of Indonesia's current progress, for example:

1. A connection between sustainable development and sustainable finance, where the later is supporting the first and has several components, for example, economic sustainability, environmental sustainability, and social sustainability.
2. The fact that Indonesia already has a sustainable finance policy, which is POJK 51 the year 2017, not only green finance policy.
3. The fact that there are several conditions in Indonesia related to sustainable finance, green bond, and sustainability index which have not been accommodated in the study, which are:

a. The World Bank estimated that by the end of this century, climate change could cost Indonesia between 2.5% - 7% of GDP annually.

b. IFC estimated that Indonesia's climate-smart investment opportunities are potentially around US$274bn between 2016 – 2030, which implied that there was a significant potential of increased private sector investment contributions.

c. OJK 2013 data stated that currently, green financing by commercial banks was at less than 2% of total financing due to inadequate analytical capacity in green financing, lack of clarity in green definitions, limited long-term funding which is often associated with long-term green projects, information asymmetry (for example, between investors and recipients) and policy support etc.

4. Dr. Poppy also mentioned that Indonesia already has green bond policy (POJK No 60 the year 2017) and have made the first attempt to actively participate in Green Bond market, by issuing USD 1.25 million sovereign Green Sukuk in February 2018 to fund a number of environmentally friendly projects such as renewable energy, green tourism, and waste management projects.

5. Indonesia also has sustainability index, called Sri Kehati which was developed by Kehati foundation in

collaboration with Indonesia stock exchange (IDX) in 2009. It was developed as an ethical index which can be used by the investor to review the companies' profitability, supported by their ESG performance. To decide the 25 best stocks that will be included in the index, the listed companies will be rated based on fundamental aspects, such as environmental, community, corporate governance, human rights, business behavior, and labor practices and decent work.

## Questions and Answers Session

None of the participants raised their questions in this session.