



Asian Economic Integration Report 2018

Theme Chapter Proposal:

Optimal Provision of RPGs in Asia and the Pacific

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Proposal Outline

1. Introduction: ABCs of RPGs

- Definition and scope
- Data and measurement, literature review

2. Background and Motivation

- Importance in Asia and the Pacific
- Rationale

3. Optimal provision of RPGs

- Issues and challenges
- Literature review on empirical studies
- Lessons from Europe
- Lessons from Latin America
- Additional areas to discuss the provision of RPGs
 - Technology and regional labor market

4. Policy discussion

- Regional mechanisms
- Role of MDBs

AEIR 2018 Theme Chapter: *Optimal Provision of RPGs in Asia and the Pacific*

Motivation

- Growing demand for RPGs and a lack of empirical studies
- Role of RPGs in achieving SDGs
- RPGs could provide solutions to mitigate risks to growth in the region

Fundamentals of RPGs

- Definition and theoretical foundation
- Scope
- Data and measurement issues

Optimal RPG provision

- Theoretical framework
- Issues and challenges
- Empirical estimates of RPG needs for selective sectors

Case studies

- Case studies for Latin America and Europe
- Lessons and implications for Asia and the Pacific

Policy discussion

- Is a regional mechanism necessary for Asia and the Pacific economies?
- What are the main lessons from other regions that we can adopt?
- How should we form this regional mechanism? What aspects should be considered in forming the mechanism?
- What is the role of MDBs in supporting a regional mechanism, or the provision of RPGs in general?

Introduction: ABCs of RPGs



Definition and Characteristics

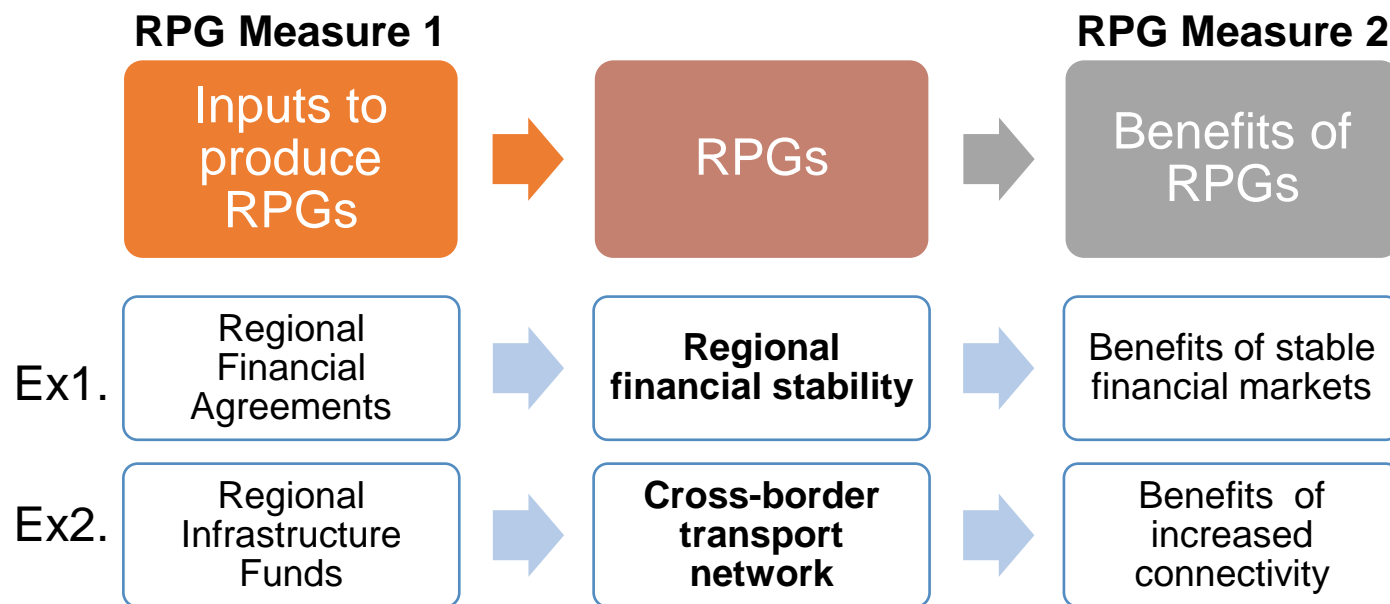
- Regional Public Goods (RPGs) are public goods whose benefits extend beyond a single nation's territory to some well-defined region.
- National PGs possess benefits confined to the country's territory, and Global PG to the entire world.
- Suppliers of RPGs include multilateral institutions, public-private partnerships, donor countries, NGOs, development banks, and charitable foundations.

Properties and scope of RPGs

- Pure public goods possess non-rivalry and non-excludability
- Impure public goods – club goods / joint products
 - Club goods: partially rival to members, but excludable to nonmembers; transportation infrastructure
 - Joint products: yields both purely public transnational benefits and country-specific benefits; protecting rainforests
- Regional banks perform RCI by delivering public goods in various areas (Ferroni, 2004)
 - Operations at the regional and subregion level including trade, energy, infrastructure, transportation, health, banking, integration research, ICT, microfinance, and more.

Considerations for what to view as RPG and how to measure

- RPGs can be measured by (i) the **tools/efforts/inputs** to produce RPGs, and (ii) the **outcomes/benefits/outputs** of RPGs
- Measuring benefits of RPGs may be more challenging than measuring the tools to promote RPGs.



<i>National PG</i>	<i>Global PG</i>
<ul style="list-style-type: none"> • Deterrence of enemies • Financial accounting standards • Surveillance of borders • Interstate highway network • Extension services • Communication network • Education 	<ul style="list-style-type: none"> • Curbing global warming • Limiting ozone shield depletion • Reducing organized crime • Limiting contagions • Protection of rain forest • Paris Agreement • Foreign aid for poverty reduction • Worldwide epidemic containment • Countermeasures against transnational terrorism
<i>Regional PG</i>	
<ul style="list-style-type: none"> • Watershed management • Malaria cure • Pest control • Immunizing populations • Airports • Power grids • Peacekeeping • Reducing acid rain • Providing public health infrastructure • Labor standards • Agricultural research findings • Transportation network 	<ul style="list-style-type: none"> • Free trade agreements • EU, NAFTA, ASEAN, MERCOSUR • Basel Accord among G10 • Greater Mekong Subregion Southern Coastal Corridor • Central Asia Regional Economic Cooperation Regional Road Corridor Improvement • Asian Bond Fund • Asian Bond Market Development Initiative • Chiang Mai Initiative Multilateralization

Literature on Data and Measurement of RPG

- Broad scope of RPGs: no consensus on data and measurement
- Public spending on RPG by national governments are not available; Official ODA Data from OECD are available, but has limitations.
- More comprehensive coverage at the global level: Liu and Kahn (2017) using United Nations Treaty Collection (UNTC) database

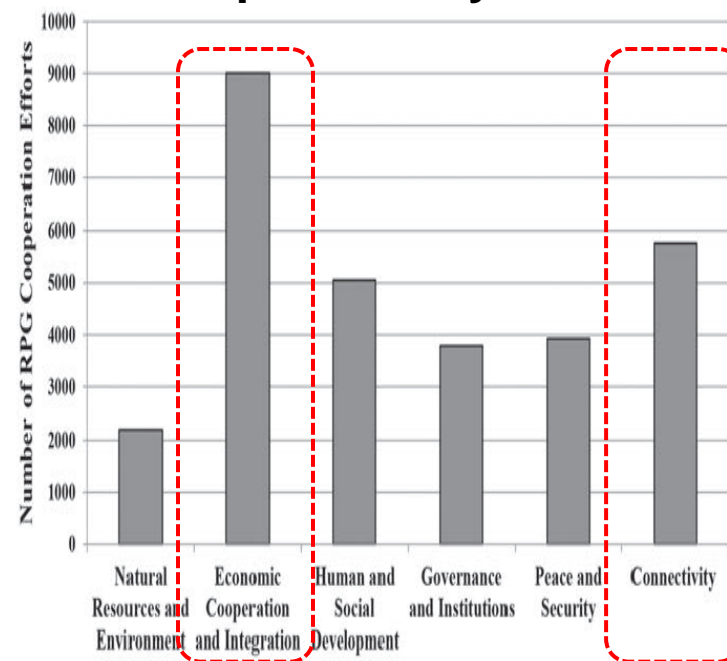
Literature on Data and Measurement of RPG – cont'd

- Liu & Kahn (2017) measures the existence of an *instrument* of RPG creation rather than the *outcome* of RPGs.
- RPGs are approximated by numbers of international treaties that nation-states have signed
- Six functional areas of RPG:

<i>Functions</i>	<i>Examples</i>
1 Natural Resources and Environment	Energy, environmental protection
2 Economic Cooperation and Integration	Trade, taxation, customs regulation
3 Human and Social Development	Education, culture, science, health
4 Governance and Institutions	General cooperation, legal issues
5 Peace and Security	Military alliance, crime control
6 Connectivity	Transportation network, visa, infrastructure

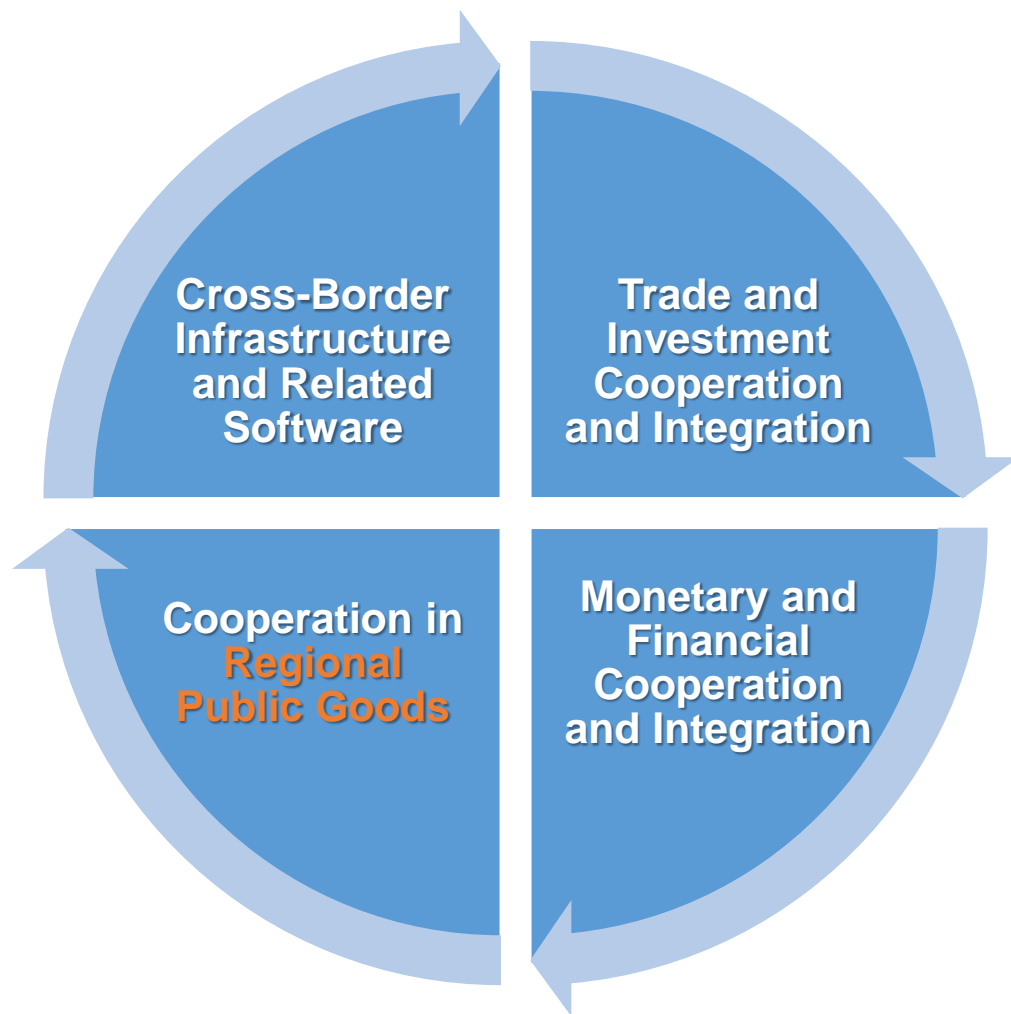
Source: Liu & Kahn (2017)

RPG Cooperation by Function



ADB's RCI Pillars

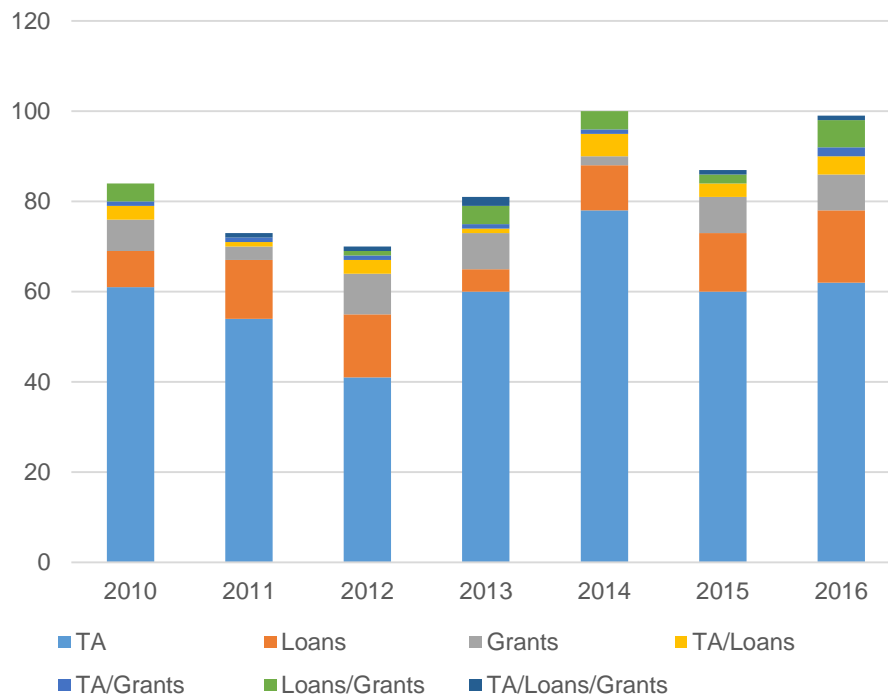
- ADB, through its projects, supports the four pillars of the Regional Cooperation Integration strategy.
- These projects come in the following types:
 1. Technical Assistance (TA)
 2. Loans
 3. Grants
- In ADB's RCI Strategy (2006, p15), a RPG is defined as a benefit shared by two or more countries in a region.



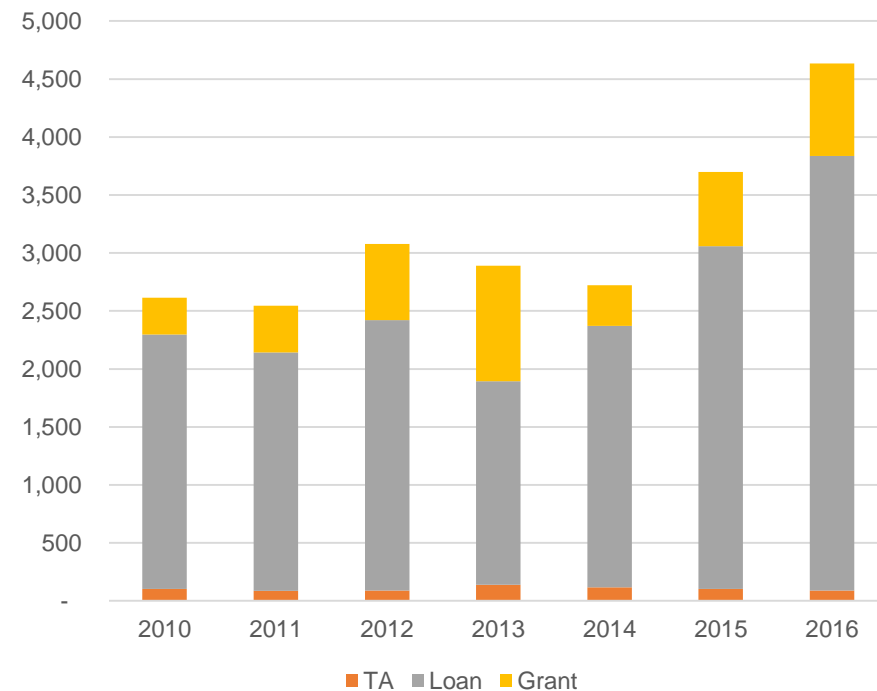
RCI projects in ADB

TAs dominate in numbers; loans dominate in amounts

Number of projects per year, according to type.



ADB RCI Project funding (in millions USD)

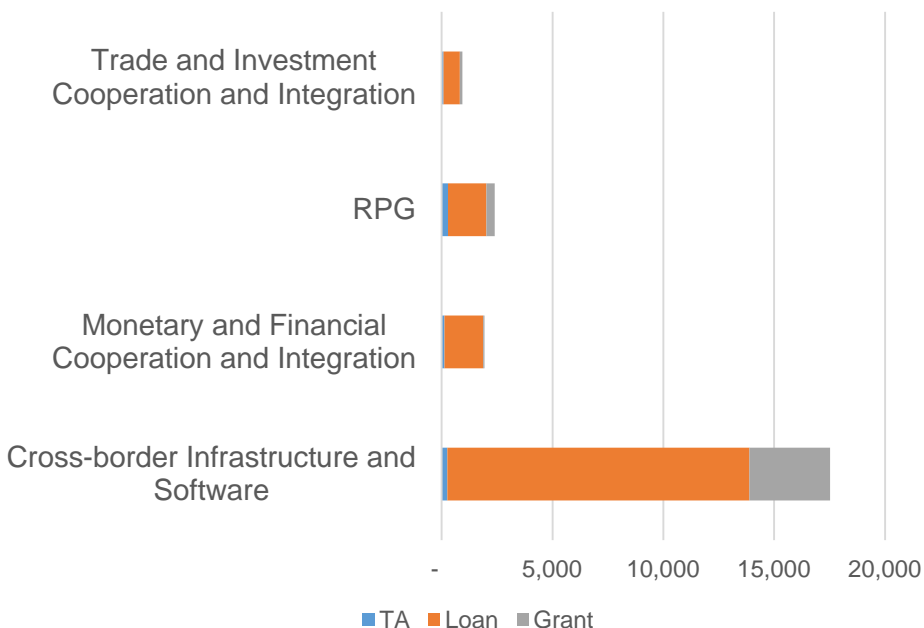


Source: authors' own calculations based on ADB's internal project database

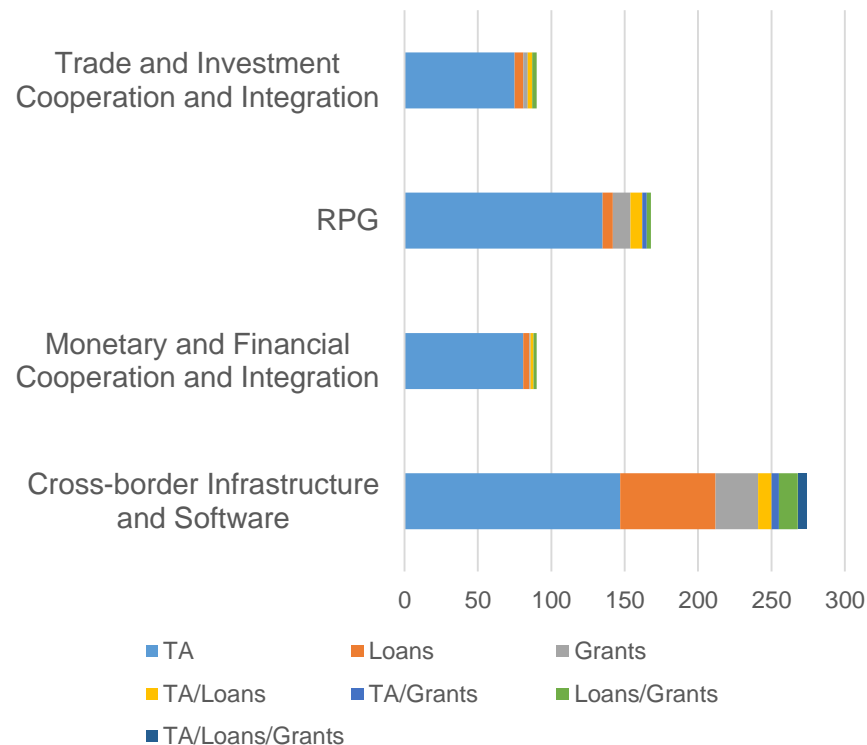
RCI Projects by sector

Cross-border infrastructure dominates

ADB RCI Projects funding per pillar
(2010 - September 2017)
(in millions USD)



Number of RCI projects per pillar,
arranged according to type.



Source: authors' own calculations based on ADB's internal project database

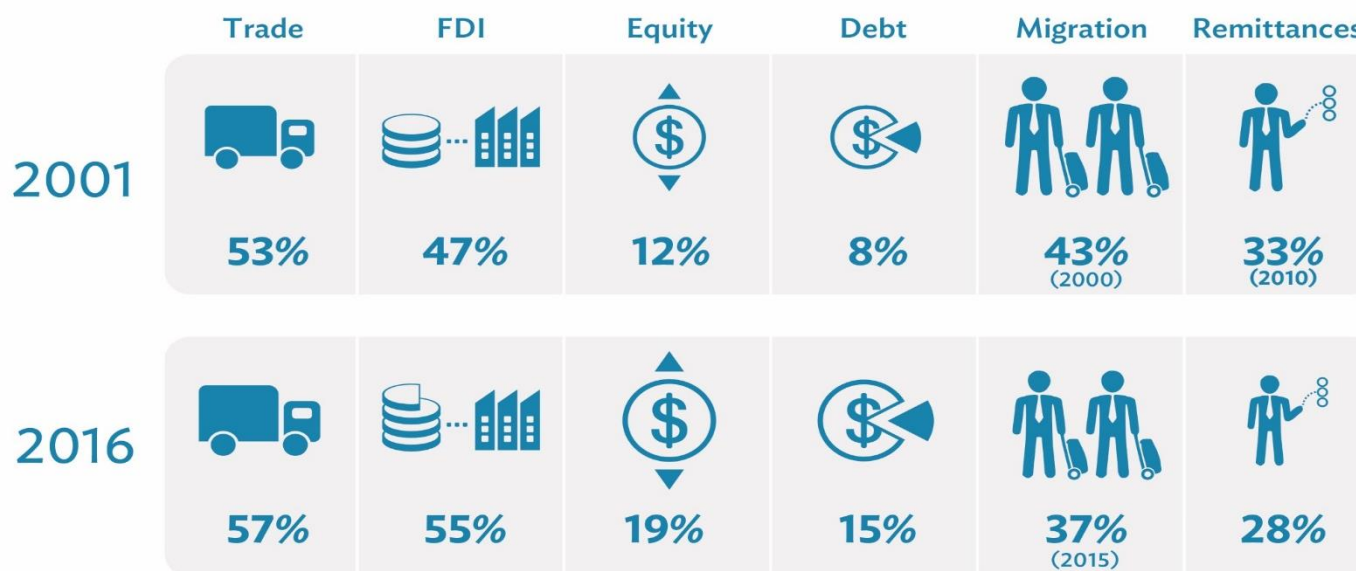


Background and Motivation

Background

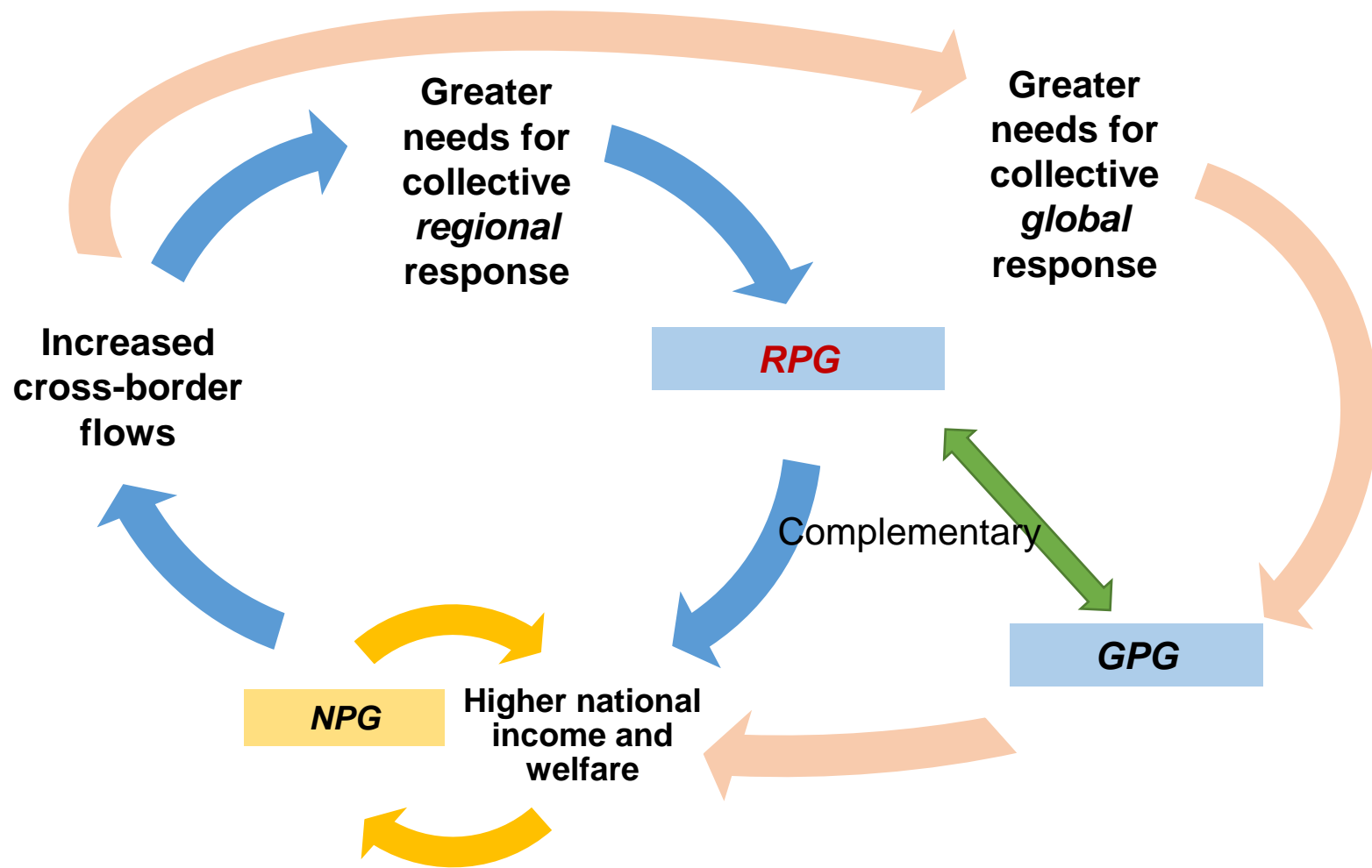
- Highlighted risks accompanied by accelerated growth in the Asia-Pacific region
 - global imbalances, lagging regions, stressed states, carbon-intensive growth, communicable diseases
- Increased vulnerability to external shocks as RCI deepens; Growing demand for RPGs
- Lack of comprehensive studies of RPGs

Asia's Integration: Intraregional shares (% of total)



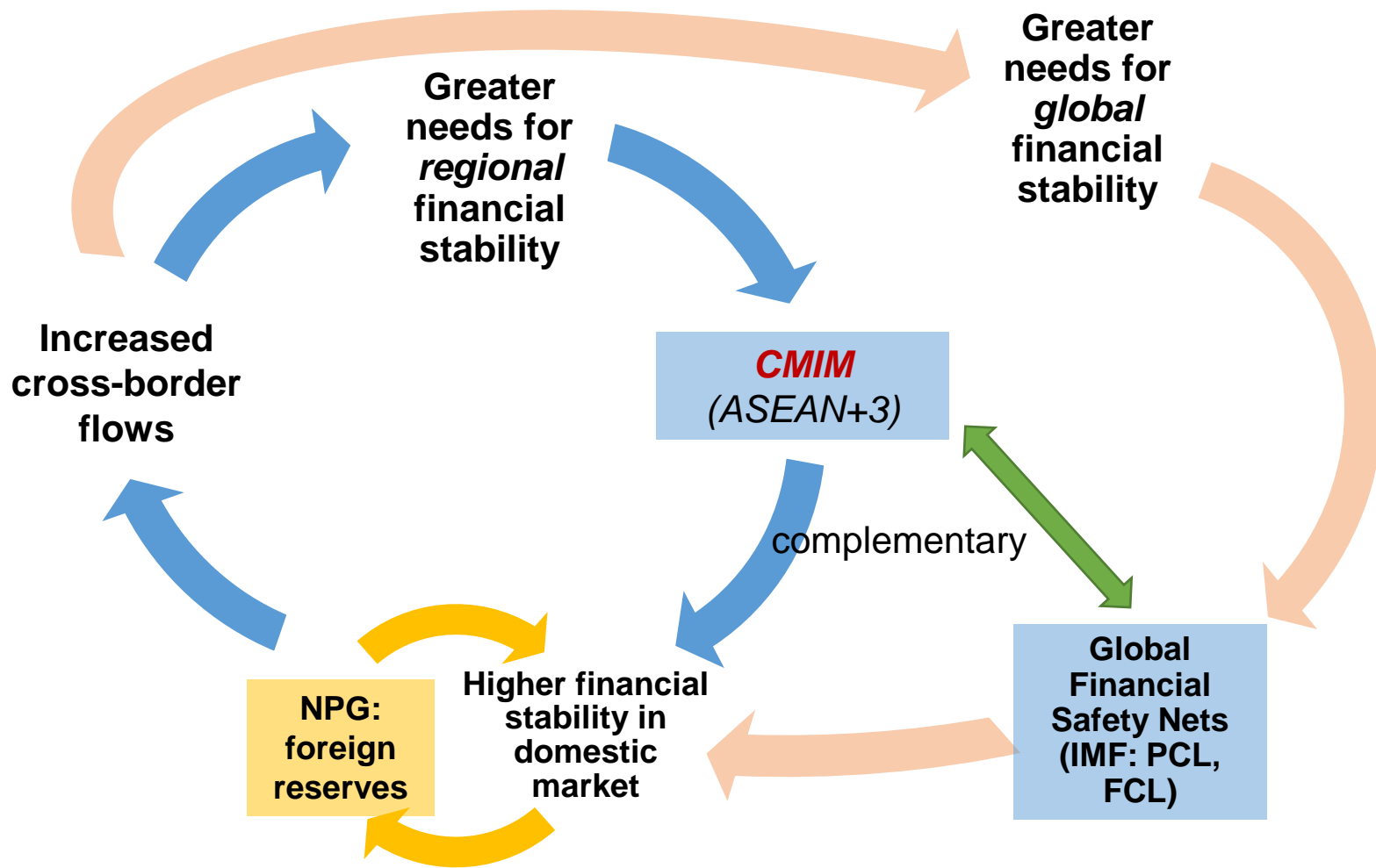
Why Regional PG?

Virtuous Cycles of RPG provision










Virtuous Cycles of RPG provision

CMIM as an example



RPGs and SDGs

RPG examples	Affected SDG	
Regional cooperation in health	Health and well-being (Goal #3)	
Risk financing strategies in the GMS	No poverty, climate action (Goals #1, #13)	 
Regional research institutions on agriculture, ASEAN+3 Emergency Rice Reserve	Food security and sustainable agriculture (Goal #2)	
Water management in the Ganges Brahmaputra Meghna (GBM) and the Indus basins	Sustainable management of water and sanitation (Goal #6)	
Cross border energy trading in South Asia	Access to sustainable energy (Goal #7)	
Clean Air Asia initiative	Sustainable and inclusive cities (Goal #11)	



Optimal provision of RPGs

Issues in optimal provision of RPG

- Identifying aggregator technology of public supply
 - How individual provision levels are aggregated to determine the amount of the public good that is available for consumption by benefit recipients (Hirshleifer, 1983; Cornes and Sandler, 1984)
 - Includes summation (e.g. alleviating desertification), best-shot (e.g. developing vaccines for diseases), weighted sum (e.g. acid rain reduction), weakest link (e.g. monitoring disease outbreaks)
 - Implies which form of public assistance is more effective (e.g. aid flows directed towards weakest-link providers of RPG vs. best-shot provider of RPG)
- Market failure and need for soft infrastructure
 - Transnational public goods need the requisite infrastructure that facilitates market exchange, such as rules and standards (Sandler, 2002)
- Asymmetric Incidence of Benefits and Costs of RPGs

Challenges in RPG provision

- Providers are better able to control and monitor the beneficiaries of national goods
- Difficulty in identifying beneficiaries
- Spillovers in developing areas do not directly benefit provider countries
- Absence of a dominant nation may result in a lack of leadership
- Nongeographical barriers: language, geology or trade bloc membership may hamper RPG provision

Source: Sandler (2014)

Empirical studies on optimal provision by methodology

- Abundant cost-benefit / impact studies of RPG projects with lack of discussion of optimal RPG levels
- Cost-benefit analysis (lacking welfare concept)
- Regression model (gravity-type models or partial equilibrium model)
 - Impact of public infrastructure in US metropolitan areas (Eberts, 1986)
 - the effects of market integration (Donalson, 2015)
 - Impact of provision of agricultural public goods (Brunstad et al., 2008)
- Computable General Equilibrium (CGE) models
 - Impact of infrastructure investment in the state of Ohio (Seung and Kraybill, 2001)
 - Economic impact of a national carbon tax in Chile (Benavente, 2016)
 - Impact of GHG emissions policy in Poland (Böhringer and Rutherford, 2013).
 - Optimal global warming regulation in the global cooperation (Seo, 2012)

Lessons from other regions: Europe

Banking, Energy, and ICT (by Bruegel)

- Banking
 - Financial stability as RPG in the EU; need for an appropriate institutional setting
- Energy
 - EU's energy policy and its coordination between national policies focusing on environmental protection and climate mitigation
- ICT
 - Existence of a number of parties in the ICT sector; need for distinct policy instruments – rules, regulations, and standardization



Lessons from other regions: Latin America (by IDB)

- Case studies: school building standards, social protection, health, pharmaceutical, and interoperability of national single window for trade
- RPG provision can have significant sustainable development impacts and generate externalities that expand development cooperation
 - Educational infrastructure standards, pharmaceutical purchasing capacity, civics teaching guidelines, migrant workers' social security rights
- RTAs can help create a more solid and stable global trading system



RPG Provision in additional focus areas:

Technology and Regional labor market

- Development impact can be maximized by supporting spread of high technology.



(Session 3) Role of RPGs for inclusive growth through technology
(by *Bo Zhao and Peter Rosenkranz, ERCD, ADB*)

Digitalization can be a channel to promote inclusive growth.

RPGs can help strengthen the linkage.

- Aging Asia will change labor markets and human capital formation among others; Need to identify major challenges and policies gaps



(Session 3) Human capital development and labor mobility in the era of aging and demographic change in Asia (by *Aiko Kikkawa Takenaka, ERCD, ADB*)

Aging and Declining workforce in advanced economy with youth workforce in middle-low income countries needing employment and training opportunities

The region needs to introduce more active policies including RPG mechanisms/policies to develop and facilitate the movement of wide array of skills.



Policy discussion

Policy Questions

- *Is a regional mechanism necessary for Asia and the Pacific economies?*
- *What are the main lessons from other regions that we can adopt?*
- *How should we form this regional mechanism? What aspects should be considered in forming the mechanism?*
- *What is the role of MDBs in supporting a regional mechanism, or the provision of RPGs in general?*

Cases of Regional Mechanisms for RPGs

Region	Sector	RPG mechanisms	Background	Objective	Established structure	Expected impacts
Central America	Health	Central American pharmaceutical procurement mechanism	Need for low-cost, high-quality medicines for public hospitals	Set up a coordinated regulatory framework for medicine procurement	Regional mechanism via collective bids at prices and quality standards set by region	Substantial savings
Europe	Infrastructure	Connecting Europe Facility (CEF)	need for public funding due to lack of commercial viability of some infrastructure projects	Support investments in transport, energy, and ICT	Grants, Programme Support Actions, and EU contributions	Increased connectivity
Europe	Finance	NPL resolution mechanisms	Financial stability risks rise as cross-border markets grow	Financial stability in the region	Single Supervisory Mechanism (SSM) and Single Resolution Mechanism (SRM)	Should help ease NPL contagion, promote fin'l stability
ASEAN	Infrastructure	ASEAN Infrastructure Fund (AIF)	Huge infrastructure needs and high savings in the region	Mobilize regional savings for infrastructure investments	Dedicated fund established by ASEAN and ADB	Enhanced connectivity in ASEAN
ASEAN +3	Finance	Chiang Mai Initiative Multilateralization (CMIM)	Volatile exchange rates during Asian crisis	Address BOP and liquidity difficulties	Currency swap arrangement between ASEAN+3 members	Increased financial resilience

Incentive Mechanisms (CEF and CMIM)

	Connecting Europe Facility (CEF)	Chiang Mai Initiative Multilateralization (CMIM)
Mechanism	<ul style="list-style-type: none"> Under the CEF, €5.85 billion is available for trans-European energy infrastructure projects such as gas pipelines, transmission grids, LNG terminals, gas storage, and smart grids. CEF financial support primarily takes the forms of grants, programme support actions, and EU contributions to the innovative financial instruments Established in 2013 	<ul style="list-style-type: none"> The funds are largely pooled by contributions from the central banks of ASEAN+3 members that can be lent to any ASEAN+3 member. Each country has a fixed borrowing multiplier while contribution amounts are agreed upon during summits. Established in 2010 (CMI was initially established in 2000)
Total committed (funded) amount	EUR 33 billion for 2014-2020 <ul style="list-style-type: none"> a. Transport sector: EUR 26.2 billion b. Telecom sector: EUR 1.4 billion c. Energy sector: EUR 5.85 billion 	US\$240 billion (increased from USD\$120 in 2014)
Contributions	European Commission budget Germany (19%), France (17%), UK (13%), Italy (12%), Spain (9%), etc. (Share of contributions to EU budget 2016)	Plus 3 countries (80%): US\$192B - PRC (US\$38.4B), Japan (US\$38.4B), Korea (US\$19.2B); and ASEAN countries (20%): US\$48B
Benefits	EU Member States and where eligible, connections to neighboring countries e.g. ICT projects for Eastern European countries (e.g. Bulgaria, Latvia, Lithuania, Romania, Poland, and Romania)	5x borrowing multiples: Vietnam, Cambodia, Myanmar, Brunei Darussalam, Lao PDR 2.5x : Indonesia, Thailand, Malaysia, Singapore, Philippines 1x: Korea 0.5x: PRC, Japan

Policy Considerations



- Regional mechanisms have potentials to address under provision of RPGs.
- It is important to incentivize individual parties to contribute to RPGs and resolve the issue of free-riding.
- ***Need for a regional mechanism that incorporate lessons learned from existing successful cases***
- ***The role of MDBs in creating the regional mechanism and providing adequate level of RPGs***



Thank you