



Technical Assistance Report

Project Number: 50055-001
Regional—Research and Development Technical Assistance (R-RDTA)
September 2016

Creating a Regional Settlement Intermediary in ASEAN+3: Cross-Border Settlement Infrastructure Forum (Financed by the Republic of Korea e-Asia and Knowledge Partnership Fund)

This document is being disclosed to the public in accordance with ADB's Public Communications Policy 2011.

Asian Development Bank

ABBREVIATIONS

ABMI	–	Asian Bond Markets Initiative
ADB	–	Asian Development Bank
ASEAN	–	Association of Southeast Asian Nations
ASEAN+3	–	ASEAN, the People’s Republic of China, Japan, and the Republic of Korea
CSD	–	central securities depository
CSIF	–	Cross-Border Settlement Infrastructure Forum
DVP	–	delivery versus payment
GOE	–	group of experts
IMF	–	International Monetary Fund
ISO	–	International Organization for Standardization
PVP	–	payment versus payment
PRC	–	People’s Republic of China
RSI	–	regional settlement intermediary
RTGS	–	real time gross settlement
SDCC	–	Sustainable Development and Climate Change Department
TA	–	technical assistance
TF4	–	Task Force 4 on Improving Related Infrastructure for Bond Markets
US	–	United States

NOTE

In this report, "\$" refers to US dollars.

Vice-President	B. Susantono, Knowledge Management and Sustainable Development
Director General	M. Locsin, Sustainable Development and Climate Change Department (SDCC)
Senior Advisor	N. Akamatsu, Office of the Director General, SDCC
Team leader	S. Yamadera, Principal Financial Sector Specialist, SDCC
Team members	K. Puongsophol, Financial Sector Specialist, SDCC R. Supangan, Senior Economics Officer, SDCC
Peer reviewer	S. Schuster, Senior Financial Sector Specialist, Southeast Asia Department

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

CONTENTS

	Page
RESEARCH AND DEVELOPMENT TECHNICAL ASSISTANCE AT A GLANCE	
I. INTRODUCTION	1
II. ISSUES	1
III. THE RESEARCH AND DEVELOPMENT TECHNICAL ASSISTANCE	3
A. Impact and Outcome	3
B. Methodology and Key Activities	3
C. Cost and Financing	4
D. Implementation Arrangements	4
IV. THE PRESIDENT'S DECISION	5
APPENDIXES	
1. Design and Monitoring Framework	6
2. Cost Estimates and Financing Plan	8
3. Outline Terms of Reference for Consultants	9

RESEARCH AND DEVELOPMENT TECHNICAL ASSISTANCE AT A GLANCE

1. Basic Data		Project Number: 50055-001	
Project Name	Creating a Regional Settlement Intermediary in ASEAN+3: Cross-Border Settlement Infrastructure Forum	Department /Division	SDCC/SDOD
Country	REG	Executing Agency	Asian Development Bank
2. Sector	Subsector(s)	Financing (\$ million)	
✓ Finance	Money and capital markets		0.50
		Total	0.50
3. Strategic Agenda	Subcomponents	Climate Change Information	
Inclusive economic growth (IEG) Regional integration (RCI)	Pillar 1: Economic opportunities, including jobs, created and expanded Pillar 3: Money and finance	Climate Change impact on the Project	Low
4. Drivers of Change	Components	Gender Equity and Mainstreaming	
Governance and capacity development (GCD) Knowledge solutions (KNS) Partnerships (PAR)	Client relations, network, and partnership development to partnership driver of change Knowledge sharing activities Implementation Regional organizations	No gender elements (NGE)	✓
5. Poverty and SDG Targeting		Location Impact	
Project directly targets poverty and SDGs	No	Not Applicable	
6. TA Category:	A		
7. Safeguard Categorization	Not Applicable		
8. Financing			
Modality and Sources		Amount (\$ million)	
ADB		0.00	
None		0.00	
Cofinancing		0.50	
Republic of Korea e-Asia and Knowledge Partnership Fund		0.50	
Counterpart		0.00	
None		0.00	
Total		0.50	
9. Effective Development Cooperation			
Use of country procurement systems		No	
Use of country public financial management systems		No	

I. INTRODUCTION

1. The Association of Southeast Asian Nations (ASEAN), the People's Republic of China (PRC), Japan, and the Republic of Korea (ASEAN+3) formally announced the Asian Bond Markets Initiative (ABMI) in 2003 to boost the development of local currency bond markets. ABMI was intended to address the “double mismatch problem”—heavy dependence on external short-term foreign currency funding to finance long-term domestic investments—which led to the Asian currency crisis in 1997–1998. ABMI also aims to channel savings within the region toward long-term investment. The Asian Development Bank (ADB) has served as ABMI's secretariat since inception as a part of its strategy to support greater financial, fiscal, and macroeconomic stability in the region. The design and monitoring framework is in Appendix 1.¹

2. The proposed technical assistance (TA) project supports ABMI's Cross-border Settlement Infrastructure Forum (CSIF), which aims to create system linkages among key market settlement infrastructures in the region. The linkages will facilitate intra-regional portfolio investment and also contribute to financial stability as a new regional safety net. The linkages will support the efficient utilization of local currency bonds as collateral regionally, and consequently increase local currency liquidity when the region faces market stress. The TA is based on the endorsement of ASEAN+3 finance ministers and central bank governors.

II. ISSUES

3. The region's local currency bond markets have expanded since the Asian currency crisis. They are still modest in size, but aggregated outstanding local currency bonds in ASEAN plus the PRC and the Republic of Korea had risen from \$1.349 trillion at the end of 2003 to \$10.033 trillion at the end of June 2016, making it now comparable to the size of Japan's bond market. The region was able to weather the global financial crisis in 2007–2008 thanks to the bond markets functioning as a spare tire² for the stressed banking sector. However, the taper tantrum³ in May 2013 exacerbated concerns over a capital flow reversal if United States (US) interest rates rose. According to the International Monetary Fund (IMF), investor behavior varies by region and could lead to herd behavior⁴. Another IMF report showed that foreign banks' local currency lending is less sensitive to global shocks than cross-border lending, which is normally US dollar-denominated⁵. These reports suggest that herd behavior in international markets has little effect on local currency bond markets. ASEAN+3 would be less vulnerable to global shocks if its financial markets were more integrated and more funds were recycled within the region.

¹ The TA first appeared in the business opportunities section of ADB's website on 19 April 2016.

² Various evidence after the global financial crisis shows that local currency bond market can play an important role in diversifying the financial system and mitigating the impact of financial crises on the real economy. “In Asia, local bond markets served as a “spare tire” when other financing channels (e.g., bank and equity) were impaired at the onset of the global financial crisis, thus mitigating its impact.” IMF, the World Bank, the EBRD, and the OECD. 2013. *Local Currency Bond Markets- a Diagnostic Framework*. Washington, DC.

³ Taper tantrum is the term used to for the market turbulence in 2013 when the reduction of the Federal Reserve's quantitative easing was considered.

⁴ “[I]nvestor behavior can vary according to the region in which they are domiciled, due to differences in the specific factors that are relevant for them. Therefore, attracting a geographically diverse investor base can help smooth flows.” IMF. *World economic and financial surveys: Global Financial Stability Report—Moving from Liquidity- to Growth-Driven Markets April 2014*. Washington, DC. p.P92.

⁵ “[T]he shift to more local as opposed to crossborder operations results in a decline in the sensitivity of capital flows to global shocks and yields a reduction in contagion. Foreign banks operating locally rather than through cross-border transactions tend to contract credit much less following domestic shocks in host countries.” IMF. 2015. *World Economic and Financial Surveys: Global Financial Stability Report— Navigating Monetary Policy Challenges April 2015*. Washington, DC. P.75.

4. The private sector advisory Group of Experts (GOE) on Cross-Border Bond Transactions and Settlement Issues⁶ was established in 2008 under ABMI and with support from ADB TA.⁷ The group aimed to promote intra-regional investment in local currency bonds and to identify issues and requirements to facilitate cross-border bond transaction, as well as to determine the feasibility of establishing a regional settlement intermediary (RSI). In 2010, GOE published a report that identified major regional market impediments and examined the feasibility of possible RSI options from a private-sector perspective.⁸

5. As a follow-on to the GOE, CSIF was created in May 2013 under ABMI Task Force 4 by ASEAN+3 finance ministers and central bank governors to enhance dialogue among policy makers and bond operators, and to discuss RSI options⁹. In May 2014, CSIF discussed most suitable arrangements for cross-border delivery versus payment (DVP) under central banks' real-time gross settlements (RTGS),¹⁰ and chose linkages between central securities depositories (CSDs) and RTGS as a model for RSI.¹¹ A progress report in May 2015 included a road map to implement CSD–RTGS linkages by 2020.¹²

6. CSD–RTGS linkages are expected to facilitate intra-regional portfolio investments and use of local currency bonds as collateral, which is in higher demand because of regulatory shifts after the global financial crisis. The linkages will expand the use of local currency bonds as cross-border collateral because currently they are locked in onshore markets. Particularly, CSD–RTGS linkages will support banks actively engaging in cross-border transactions in ASEAN+3.¹³ The linkages are also expected to support DVP of cross-border securities transactions as well as payment versus payment (PVP) of the local currencies in the region.¹⁴ The linkages will shorten the settlement period to less than 1 day from the current level of 2 days after trading. Innovative linkages will not only reduce financial risks but also create new cross-border transactions.

7. In May 2016, ASEAN+3 finance ministers and central bank governors endorsed a new ABMI Medium-Term Road Map, which outlines ABMI's activities over the next 3 years¹⁵ and endorsed CSD–RTGS linkages under CSIF by 2020. CSD–RTGS linkages will serve as a regional safety net at the micro level for financial institutions under normal circumstances, while

⁶ The GOE members consist of national members from the PRC, Indonesia, Japan, the Republic of Korea, the Lao People's Democratic Republic, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam. International experts from globally active financial institutions are also members.

⁷ ADB. 2008. *Technical Assistance for Minimizing Foreign Exchange Settlement Risk in the ASEAN+3 Region: Support for Group of Experts*. Manila (TA 6509-REG).

⁸ ADB. 2010. *Asian Bond Markets Initiative Group of Experts Report for Task Force 4*. Manila.

⁹ ABMI currently has four task forces: Task Force 1 on promoting the issuance of local currency denominated bonds (co-chaired by Thailand and the PRC), Task Force 2 on facilitating demand for local currency bonds (co-chaired by Singapore and Japan), Task Force 3 on improving regulatory frameworks (co-chaired by Malaysia and Japan), and Task Force 4 on improving the infrastructure for bond markets (co-chaired by the Republic of Korea and the Philippines).

¹⁰ DVP is an arrangement that settles cash and securities simultaneously. Entitlement of securities will be transferred in exchange for the payment amount. This would avoid settlement risk arising from delays in delivery.

¹¹ ADB. 2014. *Basic Principles on Establishing a Regional Settlement Intermediary and Next Steps Forward: Cross-Border Settlement Infrastructure Forum*. Manila

¹² ADB. 2015. *Progress Report on Establishing a Regional Settlement Intermediary and Next Steps: Implementing Central Securities Depository–Real-Time Gross Settlement Linkages in ASEAN+3*. Manila

¹³ ASEAN will recognize Qualified ASEAN Banks under the ASEAN Banking Integration Framework. The linkages will therefore support ASEAN efforts toward financial integration. Cross-border activities by financial institutions in ASEAN+3 will get additional risk mitigation measures via the linkages.

¹⁴ PVP is a mechanism in a foreign exchange settlement system to ensure that a final transfer of one currency occurs only if a final transfer of the other currency or currencies also takes place.

¹⁵ Under the road map, at least one link is created by 2018.

the Chiang Mai Initiative Multilateralization will serve as a regional safety net to support ASEAN+3 member states during crises and at the macro level.

8. The Republic of Korea and the Philippines, which co-chair for ABMI TF4, requested ADB TA to support CSIF. They particularly requested support on technical and operational issues not covered by the preceding TA: (i) further planning for and development of new linkage interfaces, (ii) agreement on normal and contingency operational arrangements, and (iii) mitigations for legal barriers and market practices that may be impeding cross-border transactions. A successful pilot case among a few initial members from advanced markets will encourage other CSIF members to participate in the linkages.

III. THE RESEARCH AND DEVELOPMENT TECHNICAL ASSISTANCE

A. Impact and Outcome

9. The impact will be greater financial stability in ASEAN+3. The CSD–RTGS linkages will serve as a new regional safety net to support regional financial stability at the micro level. The TA will support a pilot for the linkages; more central banks and CSDs in ASEAN+3 are expected to join in the long term.

10. The TA outcome will be reduced risk related to cross-border transactions. The CSD–RTGS linkages will enable DVP and PVP, which substantially reduce cross-border settlement risk. The linkages will address a shortage of collateral and facilitate foreign banks' access to local currency liquidity.

B. Methodology and Key Activities

11. The TA will support CSIF to implement the CSD–RTGS linkages. The CSIF will propose nonbinding recommendations to ABMI TF4 together with a road map to address legal and market-related barriers. A successful pilot will encourage other CSIF members to participate. The TA outputs are as follows:

12. **Output 1: Linkages among central banks and central securities depositories in ASEAN+3 agreed.** Previous CSIF discussions suggest that if members would consider bilateral linkages from advanced markets as a pilot, then other CSIF members will participate later based on their readiness.

13. **Output 2: Report to Asian Bond Markets Initiative Task Force 4 produced.** CSIF will meet at least three times a year to discuss technical, legal, market-related, and operational issues (such as contingency and business continuity plans). The TA will report progress at ABMI TF4 meetings, which take place twice per year. TF4 may provide guidance, if necessary.

14. **Output 3: Cross-Border Settlement Infrastructure Forum report produced.** A CSIF report will document key outcomes, such as operational and technical arrangements (such as contingency and business continuity plans), agreed key cross-border message items, and essential user requirements of gateway to create linkages. Legal and market-related barriers will also be discussed. The CSIF progress may be published as a report, with the endorsement of ASEAN+3 finance ministers and central bank governors.

15. **Risks.** Project risks are (i) unexpected political development that disrupt regional cooperation, and (ii) unexpected resource constraints at central banks and CSDs.

C. Cost and Financing

16. The TA is estimated to cost \$500,000, which will be financed through a grant basis by the Republic of Korea e-Asia and Knowledge Partnership Fund, and administrated by ADB. The detailed cost estimates and financing plan is in Appendix 2.

D. Implementation Arrangements

17. ADB will be the executing agency for the TA. The Office of the Director General at the Sustainable Development and Climate Change Department will implement the TA in consultation with CSIF members and ABMI TF4 co-chairs, and will supervise the consultants' work. The office will closely coordinate with the Southeast Asia Department, East Asia Department, Private Sector Operations Department, and Economic Research and Regional Cooperation Department in implementation. The project will be implemented over 27 months from October 2016 to December 2018.

18. The TA will require 14 person-months of individual international consulting services and 27 person-months of individual national consulting services. International consulting services will comprise (i) 5 person-months for a lead payment settlement and market systems specialist who has more than 15 years of experience in designing and developing market data systems and extensive research experience in payment and settlement systems; (ii) 4 person-months for a payment and settlement expert who has more than 15 years of experience in designing clearing and settlement systems—particularly for central bank and securities depositories—and extensive knowledge of clearing and settlement practices in ASEAN+3 markets; (iii) 4 person-months for a network and data standards specialist who has more than 10 years of experience in designing and managing a cross-border standardized data exchange network, specifically one that aligns with International Organization for Standardization (ISO) 20022; and (iv) 1 person-month for a finance and economic editor to support publications. The 27 person-months for a national consultant will involve project coordination; the successful candidate preferably has 5 years' experience in project coordination and excellent oral and written English.

19. A team from the Office of the Director General (two international staff with one acting as the project manager, one national officer, and one operations assistant) will work as the CSIF secretariat to facilitate communication and coordination among the member central banks and CSDs. The team will organize CSIF meetings in close coordination with the CSIF chairs.¹⁶

20. Individual consultants will be recruited according to ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). The outline terms of reference for the consultants is in Appendix 3. Disbursement under the TA project will be done in accordance with ADB's *Technical Assistance Disbursement Handbook* (2010, as amended from time to time). An ADB staff team from the Sustainable Development and Climate Change Department will regularly monitor and administer the individual contracts, and manage the combined outputs. If ADB staff act as resource persons, the TA will cover only their travel costs.¹⁷

¹⁶ Currently, CSIF chair is the Bangko Sentral ng Pilipinas, and the vice chair is the Korea Securities Depository.

¹⁷ A memo from ADB's Budget, Personnel, and Management Systems Department and Strategy and Policy Department (26 June 2013) provides guidance on charging costs to TA and internal administrative expense budgets. It states that, for preparatory works, implementation, and administrative support, ADB staff are not eligible to charge corresponding salaries and benefits to the TA. If the TA paper clearly specifies in its cost estimates that it will provide support such as travel and administrative expenses, then such costs should be charged to the TA.

21. ABMI TF4 will monitor and evaluate TA implementation at least twice per year. The TF4 will evaluate the TA continuously and provide guidance as necessary. Progress will be reported to ASEAN+3 deputy finance ministers and central bank deputy governors at least twice per year. If appropriate, progress will then be reported at the ASEAN+3 finance ministers' and central bank governors' annual meeting, which is held at the same time as ADB's annual meeting. Overall evaluation will be reflected in a TA completion report.

22. ADB will purchase equipment (i.e., computer hardware and software) following its Procurement Guidelines (2015, as amended from time to time) and in coordination with its Office of Information Systems and Technology and Office of Administrative Services, where applicable. After TA completion, any procured equipment will be disposed of according to the instructions on administering grant-financed TA projects.¹⁸ Disbursements will be made following ADB's *Technical Assistance Disbursement Handbook*.

IV. THE PRESIDENT'S DECISION

23. The President, acting under the authority delegated by the Board, has approved ADB administering technical assistance not exceeding the equivalent of \$500,000 to be financed on a grant basis by the Republic of Korea e-Asia and Knowledge Partnership Fund for Creating a Regional Settlement Intermediary in ASEAN+3: Cross-Border Settlement Infrastructure Forum, and hereby reports this action to the Board.

¹⁸ ADB. 2013. Administering Grant-Financed Technical Assistance Project. *Project Administration Instructions*. PAI 5.09. Manila.

DESIGN AND MONITORING FRAMEWORK

Impact the TA is Aligned with			
Greater financial stability in ASEAN+3 region ^a			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
Outcome Risk associated with cross-border transactions reduced	By 2019 At least 1 cross-border DVP and PVP arrangement uses the CSD-RTGS linkages created among central banks and CSDs in ASEAN+3 (2015 baseline: 0)	Announcement by the central banks and CSDs in the region CSIF reporting to ABMI TF4 ABMI TF4 monitoring of the progress of CSIF	Unexpected political development disrupts regional cooperation among member states
Outputs 1. Linkages among the central banks and CSDs in ASEAN+3 agreed 2. Report to ABMI TF4 produced 3. CSIF report produced	By 2018 1. At least 1 linkage agreed as a pilot case between a central bank and CSD (2015 baseline: 0) 2. 1 report in 2016, 2 reports in 2017, and 2 reports in 2018 to ABMI TF4 submitted (2015 baseline: 2) 3. Submission to ABMI TF4 (2015 baseline: 1)	1. Announcement from central banks and CSDs in the region; CSIF reporting to ABMI TF4; ABMI TF4 monitoring of the progress of CSIF 2. CSIF reporting to ABMI TF4 and internal document among ASEAN+3 officials 3. ABMI TF4	Unexpected shortages in central banks and CSDs' resources to develop the linkages
Key Activities with Milestones			
1. Linkages among the central banks and CSDs in ASEAN+3 agreed 1.1 Discuss and agree message items for linkages (Oct 2016–Dec 2018). 1.2 Discuss and identify essential user requirements (Oct 2016–Dec 2018). 1.3 Discuss normal and contingency operational arrangements (Oct 2016–Dec 2018). 1.4 Discuss data security requirements and produce guidelines (Oct 2016–Dec 2018). 1.5 Discuss measures to address legal and market -related barriers (Oct 2016–Dec 2018).			
2. Report to ABMI TF4 produced 2.1 Conduct at least 3 CSIF meetings annually (Q4 2016; Q1, Q2, Q4 2017; and Q1, Q2 Q4 2018). 2.2 Prepare a report to ABMI TF4 to show progress of CSIF discussions (Oct 2016–Sept 2018). 2.3 Submit a report to ABMI TF (Q4 2016; Q1, Q4 2017; and Q1 Q4 2018).			
3. CSIF report produced 3.1 Summarize CSIF discussions as CSIF phase 2 report (Q1 2017–Q1 2018). 3.2 Submit a draft report to ABMI TF4 (Q3 2018). 3.3 Submit the final draft of the report to ABMI TF4 (Dec 2018).			
Inputs Republic of Korea e-Asia and Knowledge Partnership Fund: \$500,000			

Key Activities with Milestones

Assumptions for Partner Financing
--

Not Applicable

ABMI = Asian Bond Markets Initiative; ASEAN = Association of Southeast Asian Nations; ASEAN+3 = ASEAN, the People's Republic of China, Japan, and the Republic of Korea; CSD = central securities depository; CSIF= Cross-Border Settlement Infrastructure Forum; DVP = delivery versus payment; PVP = payment versus payment; RTGS = real-time gross settlement; TF4 = Task Force 4.

^a Defined by project

Source: Asian Development Bank.

COST ESTIMATES AND FINANCING PLAN
(\$'000)

Item	Amount
Republic of Korea e-Asia and Knowledge Partnership Fund^a	
1. Consultants	
a. Remuneration and per diem	
i. International consultants ^b	291.0
ii. National consultant ^c	67.5
b. International and local travel ^d	64.8
2. Equipment ^e	5.0
3. Training, seminars, and conferences ^f	38.5
4. Miscellaneous administration and support costs ^g	5.0
5. Contingencies	28.2
Total	500.0

^a Administered by the Asian Development Bank.

^b Assuming \$22,000 per month x 14 months.

^c Assuming \$2,500 per month x 27 months.

^d Assuming \$4,000 per trip to attend 6 Cross-Border Settlement Infrastructure Forum meetings and two missions for two consultants.

^e Includes computer hardware and software.

^f Asian Development Bank staff can be considered as resource persons.

^g Includes data support and printing costs of the report.

Source: Asian Development Bank estimates.

OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

A. International Consultants

1. **Lead payment settlement and market systems specialist** (5 person-months). Under the supervision of concerned Sustainable Development and Climate Change Department (SDCC) staff, the specialist will support the Cross-Border Settlement Infrastructure Forum (CSIF) and make meaningful technical contributions to CSIF discussions. The specialist must have significant experience in developing payment settlement systems, as well as other market systems with extensive data exchanges in XML. The consultant should have experience working with systems that align with International Organization for Standardization (ISO) 20022. The specialist must have extensive knowledge in network developments between clearing and settlement systems. The expert also must have extensive knowledge in financial market practices that may affect financial data exchanges. The specialist will guide other consultants and incorporate their views into the requested reports. The specialist must coordinate closely with the governments, central banks, and central securities depositories in the Association of Southeast Asian Nations (ASEAN), the People's Republic of China, Japan, and the Republic of Korea (ASEAN+3). The specialist's tasks shall include (but not be limited to):

- (i) liaising closely with the Asian Development Bank (ADB), chairs of CSIF, and the co-chairs of ASEAN+3 Asian Bond Markets Initiative (ABMI) Task Force 4 (TF4) to provide updates on CSIF progress;¹
- (ii) advising CSIF on the design of and decisions regarding technical specifications for gateways, user requirements, message items, operational arrangements, data security, and other items necessary for central securities depository–real time gross settlement (CSD–RTGS) linkages in the region;
- (iii) drafting progress reports to ABMI TF4, as well as the phase 2 report, to be discussed at CSIF meetings and ABMI task force meetings;
- (iv) promoting CSD–RTGS linkages in ASEAN+3;
- (v) based on his or her experience in systems development, providing overall guidance on technical features associated with system linkages;
- (vi) coordinating with other consultants to ensure completion of CSIF reporting to TF4;
- (vii) together with ADB, organizing CSIF meetings;
- (viii) participating in CSIF meetings and other regional meetings if necessary; and
- (ix) performing other tasks as reasonably requested by ADB.

2. The specialist is expected to have (i) more than 15 years of experience in designing and developing market data systems; (ii) extensive research experience in payment and settlement systems, particularly in ASEAN+3; (iii) strong operational background in financial markets in ASEAN+3; and (iv) excellent oral and written communication skills in English.

3. **Payment and settlement specialist** (4 person-months). Under the supervision of concerned SDCC staff, the specialist will support CSIF and make meaningful technical contribution to CSIF discussions. The specialist must have extensive experience in designing clearing and settlement systems, particularly for central banks and securities depositories, with extensive knowledge of clearing and settlement practices in ASEAN+3 markets. As the work

¹ ABMI currently has four task forces: Task Force 1 on promoting the issuance of local currency denominated bonds (co-chaired by Thailand and the PRC), Task Force 2 on facilitating demand for local currency bonds (co-chaired by Singapore and Japan), Task Force 3 on improving regulatory frameworks (co-chaired by Malaysia and Japan), and Task Force 4 on improving the infrastructure for bond markets (co-chaired by the Republic of Korea and the Philippines).

involves communicating with authorities such as central banks in the region, working experience with these central banks is indispensable. The specialist's tasks shall include (but not be limited to):

- (i) identifying technical issues related to message items between CSD and RTGS systems based on the results of a desktop study by the Bank of Japan and the Hong Kong Monetary Authority;²
- (ii) identifying technical issues related to messages for CSD–CSD linkages and RTGS–RTGS linkages based on the CSIF progress report;
- (iii) identifying essential user requirements to establish CSD–RTGS linkages in ASEAN+3;
- (iv) identifying normal and contingency operational arrangements necessary to operate CSD–RTGS Linkages;
- (v) identifying legal barriers and market practice-related impediments for CSD–RTGS linkages;
- (vi) supporting and providing inputs for CSIF discussions and participating in the meetings;
- (vii) drafting reports on the CSIF discussions for ABMI TF4;
- (viii) participating in ABMI task force meetings if necessary; and
- (ix) performing other tasks as required by ADB.

4. The specialist is expected to have (i) more than 15 years of experience in system design, particularly for central banks; (ii) extensive research experience in payment and settlement systems, particularly in ASEAN+3; (iii) a strong operational background in financial markets in ASEAN+3; and (iv) excellent oral and written communication skills in English.

5. **Network and data standards specialist** (4 person-months). Under the supervision of concerned SDCC staff, the specialist will support CSIF and make meaningful technical contributions to CSIF discussions. The specialist must have extensive experience in designing and managing a cross-border standardized data exchange network, particularly among financial institutions in ASEAN+3, with extensive knowledge of ISO standards and procedures. The specialist's tasks shall include (but not be limited to):

- (i) contributing to designing and managing a cross-border standardized data exchange network to support CSD–RTGS linkages;
- (ii) identifying issues related to international standards (particularly ISO 20022), creating procedures to manage the network of CSD–RTGS linkages, and providing support to change, adopt, and propose ISO standards;
- (iii) identifying technical issues related to the cross-border network, and support the management of CSD–RTGS linkages;
- (iv) supporting CSIF members in creating linkages and participating in closed user groups;
- (v) participating in ABMI task force meetings if necessary; and
- (vi) performing other tasks as required by ADB.

6. The specialist is expected to have (i) more than 10 years of experience in designing and managing cross-border standardized data exchange networks, particularly among financial institutions in ASEAN+3; (ii) significant experience in managing systems that align with ISO 20022; (iii) a strong background in financial services standardization in Europe and Asia; and (iv) excellent oral and written communication skills in English.

² ADB recognizes this member as Hong Kong, China.

7. **Economics and finance editor** (1 person-month). Under the supervision of SDCC staff, the editor will review and edit reports to ensure that they are coherent and readable, are based on sound economic arguments, and conform to the highest publication standards. The editor must have extensive knowledge in finance and economics particularly in payment settlement systems and financial markets, particularly for ASEAN+3. The specialist's tasks shall include (but not be limited to):

- (i) editing CSIF outputs in accordance with ADB's editorial style;
- (ii) proofreading the text, tables, and charts of the publications from the preliminary draft to the final copy;
- (iii) ensuring data integrity and consistency in the final manuscript;
- (iv) conducting several rounds of revisions to ensure that the papers do not contain grammatical mistakes or misprints before forwarding to the printer; and
- (v) performing other editorial tasks as required by ADB.

8. The editor is expected to have (i) more than 7 years' experience in editing economics and finance literature; (ii) experience in editing ADB publications in economics and finance, particularly ASEAN+3-related publications; and (iii) a strong background in economics and finance, particularly in payment systems and financial markets.

B. National Consultant

9. **Program coordinator** (27 person-months). The program coordinator will be a citizen of the Philippines, with a duty station at ADB headquarters in Manila. The coordinator will

- (i) support the payment and settlement specialist with administrative tasks required to organize CSIF meetings,
- (ii) coordinate logistical and administrative arrangements with meeting hosts and participants,
- (iii) monitor the schedule of activities and progress of TA implementation, and
- (iv) perform other tasks as required by ADB.

10. The consultant will preferably have a degree in finance, economics, business, or its equivalent. He or she should also (i) be suitable to undertake the responsibilities mentioned in para. 9 (i)-(iv) at the required level, (ii) have more than 5 years of relevant experience in project coordination, and (iii) have excellent oral and written English.