



# ADB Regional Workshop on FinTech Development in the CAREC Region

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# **Fintech and Capital Markets Development and Integration in the CAREC Region**

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## II. Capital Markets

### Development : Issues and Perspectives

## II-1. Why capital markets development is important

- Play special role in the supply of finance for venture firms, mid-to-long-term corporate facilities, and infrastructure investment
- Enable efficient mobilization of savings, effective risk management, and promoting both foreign direct and portfolio investments
- Promote economic growth, and enhance financial stability



## II-2. Present situation of capital markets development in CAREC countries

Source: IMF, Financial Development Index Database, <https://data.imf.org/?sk=F8032E80-B36C-43B1-AC26-493C5B1CD33B>

Country	Region	Income	Year	FD	FI	FM	FID	FIA	FIE	FMD	FMA	FME
Azerbaijan	MECA	EM	2021	0.25	0.29	0.21	0.07	0.24	0.57	0.11	0.52	0.00
			2000	0.14	0.12	0.17	0.02	0.12	0.22	0.04	0.48	0.00
China	AP	EM	2021	0.63	0.61	0.64	0.49	0.46	0.73	0.68	0.19	1.00
			2000	0.38	0.35	0.39	0.32	0.03	0.72	0.20	0.11	0.89
Georgia	MECA	EM	2021	0.33	0.62	0.03	0.18	0.79	0.75	0.06	0.03	0.00
			2000	0.08	0.14	0.01	0.02	0.09	0.34	0.01	0.02	0.00
Kazakhstan	MECA	EM	2021	0.35	0.46	0.24	0.15	0.56	0.57	0.18	0.52	0.01
			2000	0.16	0.15	0.17	0.05	0.06	0.39	0.04	0.45	0.03
Kyrgyz Republic	MECA	LIC	2021	0.14	0.26	0.01	0.06	0.27	0.43	0.01	0.02	0.00
			2000	0.06	0.09	0.03	0.01	0.04	0.23	0.07	0.01	0.00
Mongolia	AP	EM	2021	0.31	0.49	0.11	0.11	0.70	0.54	0.26	0.03	0.00
			2000	0.13	0.24	0.01	0.02	0.28	0.41	0.02	0.02	0.00
Pakistan	MECA	EM	2021	0.22	0.29	0.14	0.07	0.17	0.70	0.06	0.00	0.37
			2000	0.31	0.21	0.39	0.06	0.08	0.56	0.20	0.00	1.00
Tajikistan	MECA	LIC	2021	0.11	0.21	0.00	0.04	0.14	0.47	0.01	0.00	0.00
			2000	0.08	0.16	0.00	0.03	0.08	0.41	0.01	0.00	0.00
Turkmenistan	MECA	EM	2021	0.10	0.19	0.02	0.00	0.00	0.69	0.05	0.00	0.00
			2000	0.10	0.18	0.02	0.00	0.00	0.67	0.05	0.00	0.00
Uzbekistan	MECA	LIC	2021	0.29	0.51	0.05	0.08	0.73	0.60	0.13	0.01	0.00
			2000	0.17	0.32	0.02	0.02	0.40	0.50	0.02	0.03	0.00
All countries			2021	0.32	0.43	0.21	0.28	0.35	0.58	0.22	0.23	0.16
			2000	0.27	0.33	0.20	0.21	0.25	0.51	0.17	0.20	0.22
Advanced Markets			2021	0.62	0.69	0.53	0.66	0.55	0.62	0.54	0.55	0.47
			2000	0.61	0.67	0.53	0.55	0.62	0.59	0.49	0.49	0.59
Emerging Markets			2021	0.33	0.45	0.20	0.26	0.40	0.61	0.21	0.24	0.15
			2000	0.25	0.30	0.18	0.16	0.21	0.52	0.14	0.20	0.22
Low-income Countries			2021	0.15	0.26	0.03	0.10	0.18	0.53	0.05	0.03	0.00
			2000	0.11	0.19	0.02	0.07	0.08	0.45	0.03	0.03	0.01
Asia and Pacific			2021	0.36	0.46	0.25	0.32	0.36	0.62	0.27	0.24	0.24
			2000	0.29	0.34	0.24	0.21	0.23	0.56	0.18	0.24	0.29
Middle East and Central Asia			2021	0.28	0.36	0.18	0.14	0.31	0.62	0.20	0.24	0.09
			2000	0.22	0.26	0.17	0.10	0.16	0.54	0.15	0.18	0.17

## II-3. Why capital markets are not developed in most emerging economies

	Early-stage?	System-wide?	Policy-driven?
Size of the whole economy	X	○	△
Size of the per-capita economy	△	○	
Fiscal soundness	△	○	○
Price stability	X	○	△
Robust banking sector	△	X	△
Institutional investors base	X	△	△
Financial opening	X	X	○
Property rights	○	○	○
Dispute resolution	○	○	○
Quality of regulation & supervision	△	△	△
Sound corporate governance	X	△	△
Stock exchange	○	X	○
Securities depository	○	X	○
Rating agency	△	X	△
ICT technology	○	○	△

## II-4. How to develop capital markets in CAREC countries

- How?
  - Policy efforts to satisfy the conditions for capital markets development
  - No one-size-fits-all approach for all member states
    - ✓ Countries in the initial stage of market development without basic institutions, like Turkmenistan: Start establishing the most basic institutional framework.
    - ✓ Countries that already have basic institutions: Increase demand base in the stock market and the number of listed companies by introducing incentive schemes
  - Banks' cooperation
- Role of fintech
- Role of regional cooperation and integration



### III. Role of fintech on capital markets development

## III-1. Overview

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### Fintech

- Promote **efficiency** in the supply of financial products and the provision of financial services.
- Create **a new financial industry ecosystem**
- Improve **financial access and inclusion**

### But it

- Entails several **challenges and risks** in terms of consumer protection, fair competition, financial integrity, and stability.



The role of fintech on capital markets development needs to be viewed through a **balancing lens of opportunities and risks.**

## III-2. Impacts of fintech on financial investment services

### ① Capital Raising

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- Main Features
  - Online or mobile alternative financing platforms: peer-to-peer (P2P) lending, equity crowdfunding (ECF), Initial Coin Offerings (ICOs), and Security Token Offerings (STOs)
- Assessment
  - New financing channels for borrowers
  - Attractive investment alternatives for investors
  - However, various risks and challenges:
    - ✓ Lack of information about borrowers
    - ✓ Fraud by borrowers using the platform
    - ✓ Fraud or bankruptcy of the platform itself
    - ✓ Liquidity risk
  - STOs present a better chance of addressing risks and challenges than ICOs.
    - ✓ For STOs to become a reality, security token issuers, security token issuance platforms, and security token trading platforms must be in place.

## III-2. Impacts of fintech on financial investment services

### ② Trading and Investment

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- Main Features
  - Pre-trade analytics: real-time information and making predictions based on AI technology
  - Investment advisory: Robot advisors
  - Trade execution: HTS, MTS, Financial website comparison platforms, financial aggregator platforms, and social trading and investment platforms
- Assessment
  - Widening the investor base and enhancing efficiency in trading and investment
  - However, various risks and challenges:
    - ✓ Need to be properly controlled from an AML/KYC point of view
    - ✓ Suitability problems for non-face-to-face platforms
    - ✓ Herd behavior, Lack of transparency for social trading platform

## III-2. Impacts of fintech on financial investment services

### ③ Post-Trade

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- Main Features
  - DLT: Increasing the speed and efficiency of clearing and settlement
  - Automated margin and collateral management and settlement based on a smart contract.
- Assessment (of DLT-based settlement )
  - Potential to reduce the time and costs of securities clearing and settlement compared to that relying on more manual processes
  - Reducing the operational risk that is due to deficiencies in information systems or internal processes, human errors, or management failures
  - Principal risk reduced, but not automatically eliminated
    - ✓ Need to secure legal certainty about the settlement finality and to build a delivery versus payment (DvP) system

## III-2. Impacts of fintech on financial investment services

### ④ Other Back Office activities

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- Main Features
  - Compliance, internal control, client onboarding, client relationship management, and corporate actions
- Assessment
  - Increase productivity and respond more quickly and appropriately to new demands from customers and regulators
  - However, risks and challenges:
    - ✓ New types of operational risk due to imperfect AI technology
    - ✓ Ethical problems of AI/ML: the transparency and fairness of AI algorithms need to be checked and improved.
    - ✓ Need to extract lessons from the EU AI Act differentiating regulation on AI systems according to four-level risk classifications: (i) unacceptable risk, (ii) high risk, and (iii) Limited risk and (iv) no or minimal risk.

### III-3. Financial investment services relevant to fintech disruptions in CAREC ① Feasibility and necessity

#### Relevance of financial investment services for fintech disruption in CAREC

	P2P lending	Mobile trading	STO	Automation of compliance	Client relationship management	Robot advisory	Securities settlement
Feasibility	H	M	L	M	M	M	L
Necessity	H	H	H	M	M	L	M

- In terms of **feasibility**, the service area is marked High (H) if the underlying technology is already being widely used in advanced countries, and the institutional conditions to provide the service are not complicated. It is indicated as Low (L) if the technology is still in the proof-of-concept stage and if the institutional conditions are quite complicated. It is indicated as Medium (M), if the technology is not widely used while the institutional conditions are not complicated, or if the technology is already widely used while the institutional conditions are quite complicated.
- In terms of **necessity**, it is rated as High (H) when it directly contributes to capital market revitalization or filling the financing gap of SMEs, and Middle (M) when it indirectly contributes to the development of the capital market by enhancing the efficiency of financial institutions or financial systems.



## III-3. Financial investment services relevant to fintech disruptions in CAREC ② P2P lending and ECF

### Financing gap indicators of CAREC countries

(Unit: %)

- P2P lending or ECF are the priority areas to be promoted in CAREC
  - Feasible without high-level technical skills
  - Firms' high financing gaps

	Firms with a bank loan or line of credit	Small Firms with a bank loan or line of credit	Firms using banks to finance investment	Firms using banks to finance working capital
Azerbaijan (2019)	16.8	9.1	24.4 (2013)	19.4
China (2012)	25.3	13.9	14.7	22.1
Georgia (2019)	43.3	38.0	34.5	31.5
Kazakhstan (2019)	17.2	12.0	14.0	13.2
Kyrgyz Republic (2019)	25.8	17.4	16.7	18.8
Mongolia (2019)	39.3	26.8	47.9	37.5
Pakistan (2013)	6.7	3.4	8.1	8.6
Tajikistan (2019)	18.0	13.1	8.3	12.8
Turkmenistan	n.a.	n.a.	n.a.	n.a.
Uzbekistan (2019)	22.2	18.6	26.2	23.7

Note: The number in the parenthesis is the year of observation.

Source: World Bank Global Financial Development Database, 2023

### III-3. Financial investment services relevant to fintech disruptions in CAREC ③ Mobile Trading Platform

- In CAREC, the internet and mobile phones are widely used by a large public. However, the use of the internet or mobile phones to conduct financial services is still low.
- CAREC needs to make efforts to expand the internet and, especially mobile financial services in line with the widespread penetration of mobile phones.

Internet and mobile phone penetration in CAREC countries

	Individuals using the internet <sup>a</sup>	Mobile-cellular subscriptions <sup>b</sup>	Used a mobile phone or the internet to pay bills <sup>c</sup>	Used a mobile phone or the internet to send money <sup>c</sup>	Used a mobile phone or the internet to access an account <sup>d</sup>
Azerbaijan	85	102	7	n.a.	2
China	70	119	60	69	38
Georgia	73	128	25	19	9
Kazakhstan	86	129	51	47	18
Kyrgyz Rep.	51	130	9	12	6
Mongolia	63	133	43	66	38
Pakistan	25	80	6	6	8
Tajikistan	22	121	4	3	8
Turkmenistan	21	155	0	n.a.	2
Uzbekistan	71	100	16	10	7
World	63	n.a.	34	35	25

Note: <sup>a</sup> per 100 habitants, the Year 2020 except Kyrgyz (2019), Tajikistan & Turkmenistan (2017) <sup>b</sup> per 100 habitants. The year 2020. <sup>c</sup> per 100 habitants of age +15, the Year 2017.

Sources: <sup>a, b</sup> International Telecommunication Union, <https://www.itu.int>

<sup>c</sup> The Global Findex Database 2021, <https://globalfindex.worldbank.org/>

### III-3. Financial investment services relevant to fintech disruptions in CAREC ④ STOs

- STOs not yet widely used, but some successful cases of tokenized security issuance.
  - It is likely that STOs will make a headway globally sooner or later.
    - ❖ Global listed trading volume of security tokens expected to reach US\$162.7 trillion by 2030 (42.9% of the share of global market-traded products) Quinlan and Associates (2021)
- In the case of CAREC, it is not expected to be active in the short term because there are still many technological and legal hurdles to overcome for this method to spread.
- However, the incremental benefits of establishing a coin ecosystem and an environment allowing STOs can be quite large in CAREC compared to the countries where traditional financial market infrastructure is well established.
- Therefore, it seems a good direction for CAREC countries to exert efforts to establish a coin ecosystem.

### III-3. Financial investment services relevant to fintech disruptions in CAREC ⑤ Compliance and customer relationship management

- Digitalizing and automating the back-office activities of financial investment companies is important for the development of the capital market.
- It would be desirable for fintech companies specialized in B2B services to play an active role in CAREC.
  - In the initial stage, fintech companies need to play a role in supporting the digitalization of the back-office activities of financial companies.
  - The efficiency of back-office activities can be improved significantly from the digitalization stage to the automation stage, and the use of AI and blockchain technologies can be very useful for such automation.
- Unlike the IBs and brokers and dealers in developed countries, the need to cut back costs relying on new technologies may not have been very urgent in CAREC.
- However, it is as much necessary for them as those in developed countries to respond appropriately to strengthening regulations applied globally, reduce costs, and provide better services to their client

## III-4. Role of policymakers ① Fintech-related policies, regulations, and supervisions

- Setting the basic direction of fintech utilization for capital markets
  - Based on the country's technological level, the status of financial market infrastructure, and the significance of the financial sector and capital market for national economic development.
- Revising or enacting laws on newly introduced goods and services
  - Crypto assets including stablecoins, P2P lending, ECF, ICOs, and security
  - Regulators need to balance the risks and costs with benefits and opportunities.
- Introducing regulatory sandbox
  - Overall, the adoption of the regulatory sandbox approach is worth trying to promote financial innovation despite unclear long-term effectiveness of the regulatory sandbox.
- Setting standards on data and cross-cutting technologies
  - Need to set standards for regulations on the elements that are commonly used or applied across various financial services including 'data' and underlying technologies used across various services

## III-4. Role of policy makers ② Creation of an environment that promotes the use of fintech

- Upgrading technological infrastructure
  - Broadband access and fast mobile internet networks
  - Efforts to promote the development of fintech-relevant technologies
  - Policy authorities in CAREC should select capital market service areas and technologies to be intensively nurtured based on their country's given circumstances and the strategic framework of financial development
- Encouraging industry engagement
  - Role of organizations that support exchanges between existing financial companies and fintech startups: e.g. Stone & Chalk (Sydney), Fintech Center Korea
  - The government and the private sector cooperate to roll out a system to promote fintech:  
e.g. New York Fintech Lab program, Asia-Pacific Fintech Innovation Lab
- Coordination of fintech policies among various government departments
  - Example of Singapore: The Monetary Authority of Singapore (MAS) playing a central role in coordinating government-wide fintech policies



## IV. Regional cooperation for capital markets and fintech development



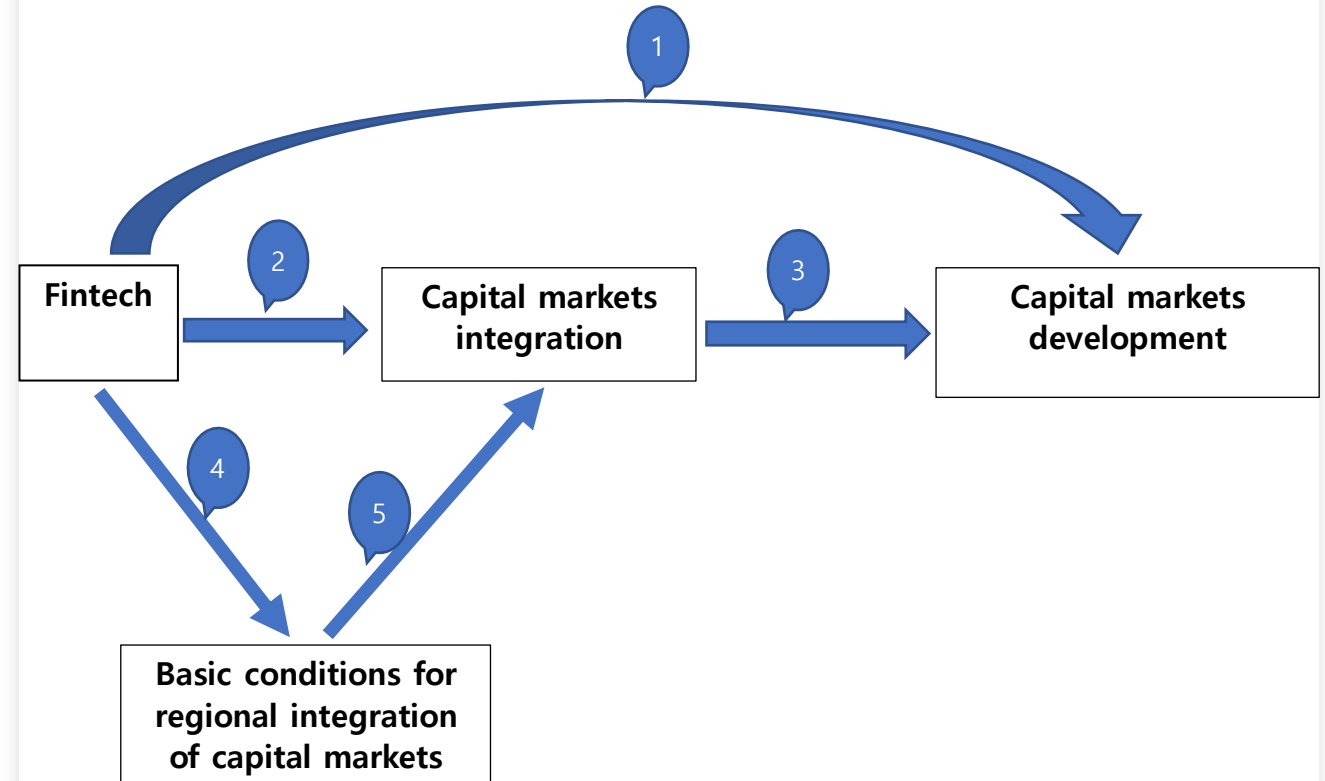
## Focus of Ch.IV

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- Two main purposes of the whole study
  - Capital markets development through fintech innovations
    - Previous chapters suggested various ideas to promote capital markets development through fintech and examined the relevant roles of policymakers
  - Capital markets development and integration through regional fintech cooperation
    - This chapter will more focus on how those ideas can be applied at the regional level rather than at the national level, and suggest strategies to promote regional fintech cooperation for capital markets development and integration

## Focus of Ch.IV

### Transmission channels of fintech to capital markets development



- Simple channel: (1)
- Integration channel: (2) – (5)
  - Direct channel: (2)
  - Indirect channel: (4) and (5) – legal, infra, institution

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## IV-1. Necessity of regional cooperation for capital markets development and integration (1/2)

- Many developing countries are pursuing economic integration as a strategy for economic development
- Economic integration can bring both benefits and risks
  - The benefits are not automatically guaranteed, and do not come free but always with potential problems
- Regional cooperation is needed:
  - to realize the benefits and prevent potential risks of integration: economic integration < financial integration < fintech expansion
  - to prevent a problem caused by the disharmony between real regionalization and financial globalization

## IV-1. Necessity of regional cooperation for capital markets development and integration (2/2)

- Why regional?: regional vs. global
  - In a global approach, negotiations take place on the issues of common interest to most countries, and it is hard to reflect the specific interests and peculiarities of individual countries
  - And regional cooperation of fintech is essential to further reap the benefits and reduce the problems arising with integration
    - There is too wide disparity in the level of economic and financial development between CAREC countries and advanced groups
    - Unlike advanced countries, what's most needed for CAREC countries to adopt fintech is the development of basic IT infrastructure, which should be jointly promoted in the region
    - The quality of regulation and supervision of the financial sector varies across CAREC countries, and it would be easier and more needed to prepare an adequate legal framework for fintech at the regional level

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## IV-2. Tasks for regional fintech cooperation for capital markets development and integration in CAREC

### ① Overview (1/2)

- Two principles to suggest strategies for promoting regional fintech cooperation in CAREC (to reflect specific features and connectivity of regional economies): flexibility and harmonization
  - Flexible approaches to fintech applications would be desirable considering the existing large disparities in financial and fintech development between CAREC and advanced regions and among regional member countries
  - Regional cooperation requires the harmonization of dissimilar policies among member countries

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## IV-2. Tasks for regional fintech cooperation for capital markets development and integration in CAREC

### ① Overview (2/2)

- Broad grouping of suggestions
  - Fintech cooperation for payments and settlements
    - This issue is particularly relevant for CAREC countries
  - Fintech cooperation for capital markets activities
    - Other categories of financial services
  - Fintech cooperation for legal systems
    - Covered in last section

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## IV-2. Tasks for regional fintech cooperation for capital markets development and integration in CAREC

### ② Regional cooperation of fintech for cross-border payments and settlements (1/4)

- Impediments to cross-border payments in CAREC
  - Traditional cross-border transfers are costly, slow, cumbersome, opaque, and not transparent due to shortcomings of technology, regulation, and market structure
    - These problems particularly manifest in CAREC countries because remittance is one of main income sources for the population in the CAREC region
  - Fintech applications can hugely lower the costs and enhance transparency in international remittances of CAREC countries



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## IV-2. Tasks for regional fintech cooperation for capital markets development and integration in CAREC

### ② Regional cooperation of fintech for cross-border payments and settlements (2/4)

- DLT applications to cross-border payments
  - Among various ideas of fintech innovations in remittance services, DLT (distributed ledger technology) applications are the most useful
    - DLT can be applied to three areas in the cross-border payments process: back-end processes, compliance, and means of payment
  - Back-end processes:
    - If traditional players use DLT applications, many shortcomings of cross-border payments can be resolved
    - E.g.: SWIFT, traditional correspondent banks

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## IV-2. Tasks for regional fintech cooperation for capital markets development and integration in CAREC

### ② Regional cooperation of fintech for cross-border payments and settlements (3/4)

- DLT applications to cross-border payments (cont'd)
  - Compliance:
    - The cost of remittances is very high in the CAREC region because the cost of AML/CFT compliance is expensive as well as the size of transactions is small
    - DLT can be applied for AML/CFT compliance, know-your-customer (KYC) utilities, digital identity, etc.
  - New means of payment:
    - Privately run hub-and-spoke payments network
    - CBDC: When CAREC countries explore national CBDCs, it is necessary to consider the situations at the regional level to select a design among various alternatives so that regional integration can be more promoted

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## IV-2. Tasks for regional fintech cooperation for capital markets development and integration in CAREC

### ② Regional cooperation of fintech for cross-border payments and settlements (4/4)

- Additional note for cross-border payments and settlements
  - At the moment, it would be desirable for CAREC countries to focus more on back-end process and compliance to improve the channel of cross-border payments and remittances
  - It would be more effective to launch the CAREC Payment and Settlement System as part of a regional FTA deal so that the region's many systems can work better together

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## IV-2. Tasks for regional fintech cooperation for capital markets development and integration in CAREC

### ③ Regional cooperation of fintech for capital markets activities (1/3)

- Identity verification
  - Digital IDs can offer citizens a low-cost alternative to validate their identity and enable them to access various financial services
    - If a well-designed and robust digital ID system can be established through fintech cooperation in CAREC, these benefits will easily expand to the whole region
- Credit scoring and information sharing
  - Data on customer behavior and payment history from traditional and alternative sources can be consolidated into a single database
    - Using DLT, fintech solutions can help financial institutions build consumer data into their products and services
    - Digital financial profiles at the regional level can be developed based on the data, and fintech solutions will provide the building blocks for a regional approach to institution building

## IV-2. Tasks for regional fintech cooperation for capital markets development and integration in CAREC

### ③ Regional cooperation of fintech for capital markets activities (2/3)

- Trading system
  - Integration of capital markets in the CAREC region, e.g. through the integration of trading platforms of national exchanges
    - The symmetric arrangement links the trading systems of the exchanges in regional countries bilaterally through a telecommunications network: In the hub-spoke system, national exchanges are linked based on a central operating facility
    - Start with the bilateral linkage, move to the hub-spoke one, and eventually integrate trading systems into common platforms for both domestic and cross-border transactions
- Regional institution for fintech cooperation
  - Start with the CAREC Fintech Policy Forum and a forum secretariat, and next set up a financial committee that will help facilitate policy coordination and cooperation including fintech applications
    - The establishment of a regional institution for fintech cooperation requires staff technical capacity, and CAREC countries need to secure executive support for the institutions with technical competency

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## IV-2. Tasks for regional fintech cooperation for capital markets development and integration in CAREC

### ③ Regional cooperation of fintech for capital markets activities (3/3)

- CAREC Infra Fund
  - The financing needs for the infrastructure development of the CAREC region will be too large to be fully met by financing only from the existing institutions such as IMF, WB, ADB
    - The region needs additional financing sources for development
  - Applications of East Asian experience
    - CAREC Development Bank (CDB), CAREC Infrastructure Fund (CIF), and CAREC Development Corporation (CDC): The latter two can be applied to the CAREC region
    - Start with the CIF because it will be able to address additional financing needs by working with all development stakeholders including existing MDBs
    - Move to the CDC to raise funds for the development of the CAREC region by issuing bonds in intra-regional markets and specializing in investing in regional projects, including fintech infrastructure construction

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### IV-3. Fintech and cross-border regulation and supervision in CAREC

#### ① Necessity of regional regulatory cooperation (1/2)

- New issues in fintech regulatory cooperation
  - Regulators will face additional challenges in achieving international regulatory cooperation to reduce complexity and uncertainty rising with fintech expansion
    - International cooperation should be focused on balancing the efficiency and risk effects of new forms of financial flows and avoiding unnecessary frictions in international transactions
  - Another key challenge in international regulatory cooperation for fintech activities is how to prevent regulatory arbitrage
    - Close cooperation among regulatory bodies is required so that regulatory gaps between nations cannot create opportunities for cross-border regulatory arbitrage



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### IV-3. Fintech and cross-border regulation and supervision in CAREC

#### ① Necessity of regional regulatory cooperation (2/2)

- Needs of regional approach in CAREC
- Regional cooperation is needed to overcome capacity and scalability constraints in CAREC countries
  - CAREC countries are still lack of well-developed regulatory systems, and an effective regional cooperation mechanism is necessary to build functional and harmonized regulatory standards and surveillance systems for fintech
  - They also need to trail benchmark regions so that good experiences in other regions can be emulated in the CAREC region

## IV-3. Fintech and cross-border regulation and supervision in CAREC

### ② Regional fintech cooperation for financial regulation (1/5)

- Fintech-enabling regulatory framework
- To derive regional harmonization of fintech regulation:
  - First, comprehensively review the existing legal and regulatory framework in each country to figure out how a country's legal and regulatory framework should be adjusted to handle fintech developments and foster fintech innovations and also to clarify the ambiguity of existing regulations with respect to fintech services
  - Second, it is more desirable to follow flexible approaches to building a fintech-enabling regulatory framework: In the CAREC region, it is needed to balance the objective of ensuring rigorous standards and the reality of existing weak legal frameworks
- CAREC countries should take efforts to enhance regulators' skills and knowledge of fintech developments
  - The CAREC Fintech Policy Forum suggested above could drive this capacity building and knowledge exchange initiative among national regulatory bodies in the region

### IV-3. Fintech and cross-border regulation and supervision in CAREC

#### ② Regional fintech cooperation for financial regulation (2/5)

- Regional innovation hub
  - Expansion of innovation hubs at the domestic level to a regional level to enhance cooperation among national regulators
  - A simple approach is to make a fintech MoU (Memoranda of Understanding) in a region
    - It provides a framework for cooperation and referrals between innovation hubs of each authority
    - It also sets out how regulators will provide support to businesses
  - Start with a bilateral agreement and evolve into a regional or even global multilateral agreement
    - For example, the EC suggested introducing “basic principles for firm support at the EU level, which could eventually lead to an automatic referral system between innovation hubs”
    - It may be good to make groupings depending on the result of Output 1 (Fintech Indicator System)

## IV-3. Fintech and cross-border regulation and supervision in CAREC

### ② Regional fintech cooperation for financial regulation (3/5)

- Regional sandbox
  - Expansion of regulatory sandbox at the domestic level to a regional level
  - Example:
    - Global Financial Innovation Network (GFIN): an international alliance of government regulators led by the U.K.'s regulatory body with the aim of providing financial firms with an environment to trial cross-border solutions
    - ASEAN Financial Network (AFIN): a cloud-based marketplace for the distribution of fintech solutions to financial institutions located in multiple jurisdictions
  - In CAREC:
    - If a regional regulatory sandbox is agreed upon among CAREC countries, it becomes much easier for regional fintech companies to test the viability of innovative concepts in multiple jurisdictions in the region with the grant of licensing exemptions and conditional relief from regulatory requirements

### IV-3. Fintech and cross-border regulation and supervision in CAREC

#### ② Regional fintech cooperation for financial regulation (4/5)

- Passporting arrangement
  - It is to enhance regulatory cooperation to ease cross-border business and requires that countries agree on a common set of rules and a single process for registration
  - Example:
    - Asia Region Funds Passport (ARFP): It aims to provide a multilaterally agreed framework to facilitate the cross-border offering of high-quality managed funds across participating economies, and can be developed into a regional fintech passport
    - EU: EU passport gives the firms that are duly authorized and supervised by their home state the possibility to provide their services in all other member states and to scale up in the entire EU Single Market
  - In CAREC:
    - Member countries may select a few exemplary cases and introduce a set of rules that the firms authorized by the home country to test those selected cases can do their business in other CAREC countries

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### IV-3. Fintech and cross-border regulation and supervision in CAREC

#### ② Regional fintech cooperation for financial regulation (5/5)

- Additional note for fintech regulatory cooperation in CAREC
  - Gradual expansion
    - Once a pilot case proceeds with success, the scope of harmonized regulatory and supervisory requirements for fintech activities including innovation hubs, sandbox, and passporting arrangement within the CAREC region can be gradually expanded
  - Package deal
    - It would be better and more desirable to promote several ideas of strengthening regional integration simultaneously rather than separately in the CAREC
    - For example, the CAREC Payment and Settlement System, Fintech sandbox, and Fintech passport can be included as part of the deal for the CAREC Free Trade Area



# Appendix

## Roadmap of CAREC capital markets development through fintech and regional cooperation

## Background

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- Reasons for introducing a roadmap of CAREC capital Markets development through Fintech: A step-by-step approach along the roadmap is needed
- To consider a low level of fintech and capital markets development on average and significant gap in the development of fintech and capital markets among member countries in the region
  - To improve the level of development of fintech and capital markets in the entire region while simultaneously mitigating the intra-regional gap according to the roadmap
- To consider that intra-regional cooperation is not yet ripe
  - To pursue simultaneously capital market development and regional integration through fintech



## A-1. Outline of a Roadmap

- Basic Structure: three-stage approach
  - Stage of institutional and technological improvement
  - Stage of fintech promotion
  - Stage of fintech expansion
- Development target:
  - 70% level of the Advanced Markets' capital market development
- Time required to achieve the target:
  - 10 to 20 years depending on the present level of fintech and capital market development

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## A-2. Target level and Speed of catch-up (1/2)

- The present level and the target level of capital market development can both be based on the IMF's financial market development index system
  - In 2021, the FM index for the Advanced Markets is 0.53, so 70% of it is 0.37. The same indices for CAREC countries are much lower than 0.37 except China
  - So, the target level is ambitious, but a reasonable one for CAREC countries

## A-2. Target level and Speed of catch-up (2/2)

- There is a significant gap in the fintech progress among member countries of CAREC, no matter which method is used
- So, it looks reasonable to differentiate significantly the time required to achieve the target among member countries
- Grouping of countries
  - Composite index based on four pillars: IMF's FM index, Technology/Infrastructure, Capability, and Regional Cooperation
  - Three groups (excluding China): leading, middle, and lagging groups

### A-3. Policy implementation at each stage

- Description of each stage
  - Basic direction of policy promotion at each stage
  - Possible policies at each stage
    - For domestic market development
    - For regional integration

# First stage: Institutional and technological improvement

Basic direction	Policies
<ul style="list-style-type: none"><li>• Set up regulatory principles on fintech applications.</li><li>• Develop basic technological infrastructure for fintech applications.</li><li>• Adopt fintech applications for basic financial services.</li><li>• Expand cross-border financial transactions.</li><li>• Fintech cooperation among countries with above average fintech development levels in pillar 2</li></ul>	<ul style="list-style-type: none"><li>• For domestic market<ul style="list-style-type: none"><li>➤ Direction of fintech development for capital markets development</li><li>➤ Regulatory principles</li><li>➤ Basic technological infrastructures</li></ul></li><li>• For regional integration<ul style="list-style-type: none"><li>➤ Fintech passport</li><li>➤ Innovation hub</li><li>➤ Fintech sandbox</li><li>➤ CAREC fintech policy forum</li></ul></li></ul>

# Second stage: Fintech promotion

Basic direction	Policies
<ul style="list-style-type: none"><li>• Adopt fintech applications aggressively to encourage capital market development.</li><li>• Start regional fintech cooperation with policies easy to implement.</li><li>• Expand regional fintech cooperation to most member countries.</li></ul>	<ul style="list-style-type: none"><li>• For domestic market<ul style="list-style-type: none"><li>➤ Development of fintech-relevant technologies</li><li>➤ Enacting or revising existing regulations</li><li>➤ Launching pilot projects</li></ul></li><li>• For regional integration<ul style="list-style-type: none"><li>➤ DLT cross-border payments</li><li>➤ Digital ID</li><li>➤ Coordination on fintech regulations</li><li>➤ CAREC fintech policy institution</li><li>➤ CAREC FTA</li></ul></li></ul>

# Third stage: Fintech expansion

Basic direction	Policies
<ul style="list-style-type: none"><li>• Expand fintech adoption to the entire capital market and financial services.</li><li>• Develop the capital market to the target level (70% of the benchmark countries).</li><li>• Establish concrete regional fintech arrangement.</li></ul>	<ul style="list-style-type: none"><li>• For domestic market<ul style="list-style-type: none"><li>➤ Enhancing institutional investors base</li><li>➤ Financial opening</li></ul></li><li>• For regional integration<ul style="list-style-type: none"><li>➤ Digital financial profile</li><li>➤ Regional common trading platform</li><li>➤ CAREC infra fund</li><li>➤ Regional CBDC</li></ul></li></ul>

## A-4. Promotion strategy

- Need to set the priority, intensity and duration of the policies according to the following principles
  - Feasibility at each stage
    - E.g.) Fintech sandbox is relatively easy to implement in many CAREC countries even under current conditions, and is recommended at the first stage
  - Earlier introduction of a policy with a long-run ripple effect
    - E.g.) In some CAREC countries, basic infrastructure may be hard to build at an early stage. Since it is so much needed to induce and promote further reforms, it would be desirable to introduce the policy as early as possible and to maintain it for a long time
  - Ease of implementation
    - E.g.) The central banks of some CAREC countries may have the capacity and interest to introduce CBDC at the second stage relatively earlier than other members. But still, it would be difficult for CBDC at the regional level, and regional CBDC is recommended to promote at the last stage



# Policy intensity and duration by stage

Policies	1st Stage	2nd Stage	3rd Stage
Direction of fintech development			
Basic technological infrastructures			
Regulatory principles			
Fintech passport			
Innovation hub			
CAREC fintech policy forum			
Fintech sandbox			
Enacting or revising existing regulations			
Coordination on fintech-enabling regulation			
CAREC free trade area			
Fintech-relevant technologies			
DLT cross-border payments			
CBDC			
Digital ID			
Digital financial profile			
Regional platform for trading system			
Regional CBDC			
CAREC infra fund			

Note : Colour of intensity

strong

middle

weak

# Strategy by group

Group	Strategy
<ul style="list-style-type: none"> <li>Leading group: Kazakhstan, Azerbaijan, Pakistan</li> </ul>	<ul style="list-style-type: none"> <li>They already attained most domestic policies of the first stage and can start from the second stage and move to the third stage</li> <li>Also, they may initiate proposals of regional cooperation for fintech and capital market development</li> </ul>
<ul style="list-style-type: none"> <li>Middle group: Mongolia, Uzbekistan, Georgia</li> </ul>	<ul style="list-style-type: none"> <li>They have relatively weak traditional capital markets and need to take more focus on improving stock and bond markets structure at the beginning</li> </ul>
<ul style="list-style-type: none"> <li>Lagging group: Kyrgyz Republic, Tajikistan, Turkmenistan</li> </ul>	<ul style="list-style-type: none"> <li>They are weak in all criteria except the regional cooperation pillar</li> <li>They should focus on enhancing the basic infrastructure of fintech and capital markets in the first and second stages before expanding fintech adoption</li> </ul>