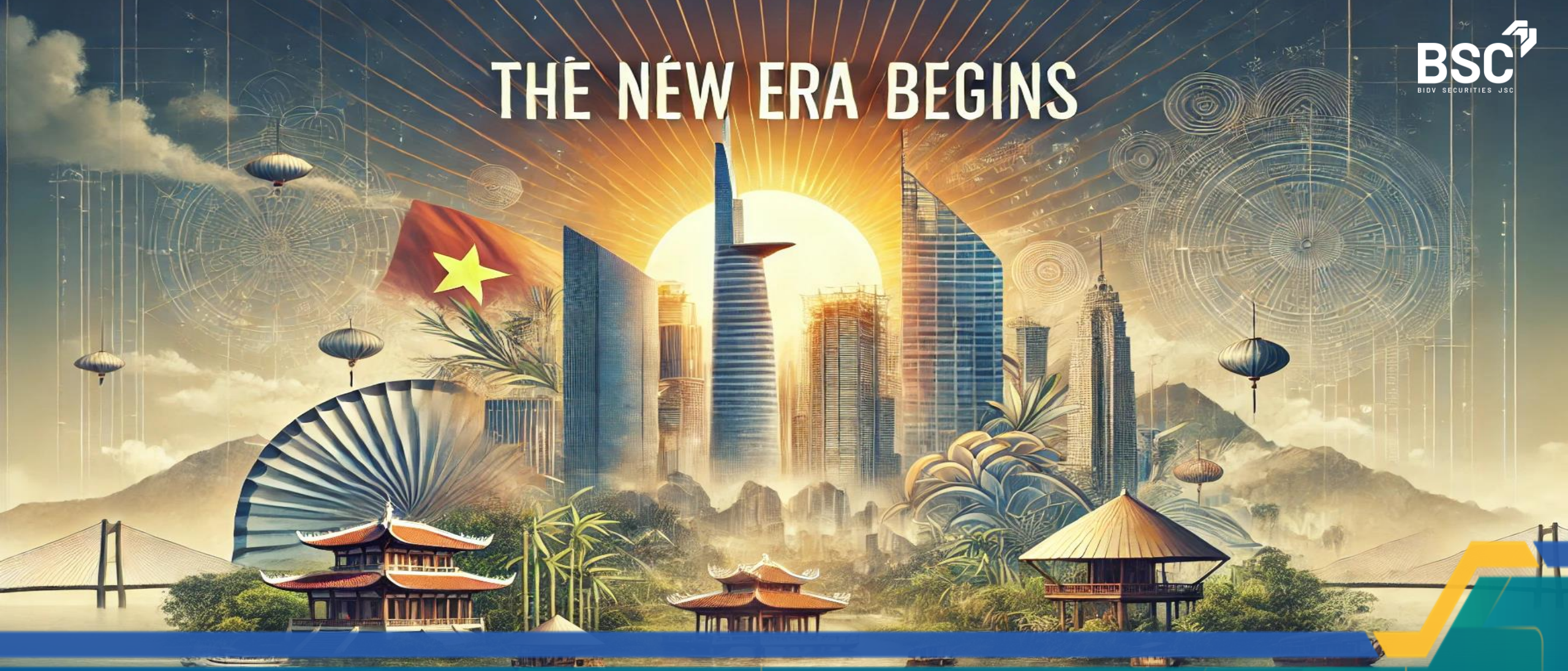


BSC
BIDV SECURITIES JSC

Thematic report

Enhancing the technology infrastructure of the Vietnamese stock market

03/2025

Content

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2. Efforts to launch the KRX system
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4. Settlement failure handling mechanism between securities firms and foreign institutional investors under the NPF solution
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6. How has Vietnam been actively working toward a market upgrade in practice?
7. The SSC's solution package aimed at upgrading the stock market
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2. Capital market structure and clearing & settlement process in South Korea
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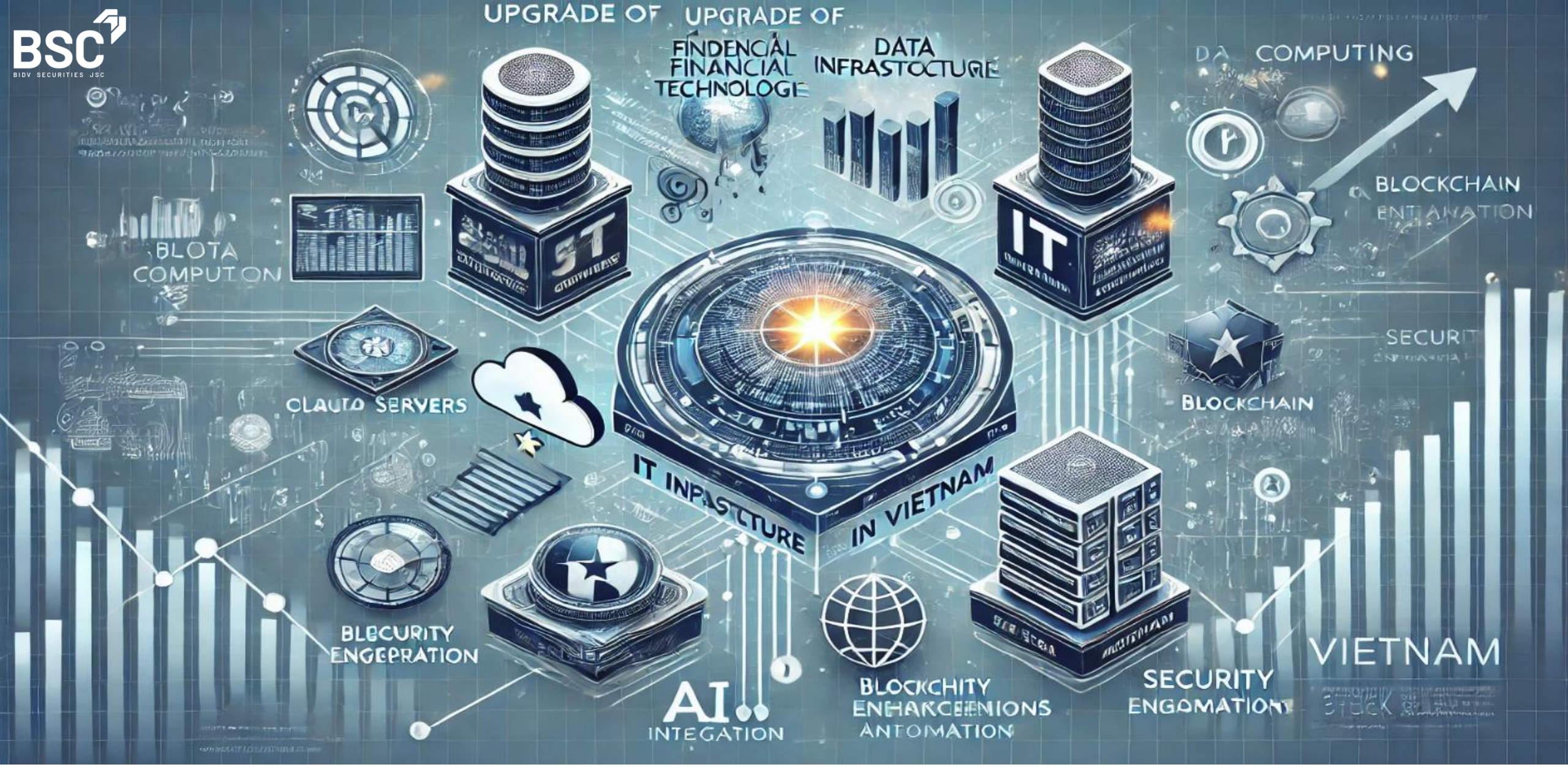
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Enhancing the technology infrastructure of the Vietnamese stock market

Overview of the current structure of Vietnam's stock market system

SSC State Securities Commission of Vietnam

KRX

VIETNAM EXCHANGE
SỞ GIAO DỊCH CHỨNG KHOÁN VIỆT NAM

HOSE

HANOI STOCK EXCHANGE
SỞ GIAO DỊCH CHỨNG KHOÁN HÀ NỘI

- Derivatives
- Corporate bonds
- Government bonds
- Listed stocks
- UPCOM

CCP

TRUNG TÂM LƯU KÝ CHỨNG KHOÁN VIỆT NAM
VIETNAM SECURITIES DEPOSITORY

- Settlement (CS)
- Registration (DR)
- Custody (DR)

Harmonize investor data, trading accounts, and securities records, with **seamless online integration** into the systems of the SSC and relevant stock exchanges.

Improving market liquidity and expanding product and service offerings

New products include: stock short selling, allowance for selling unsettled securities (T+0), and equity option contracts



(1997 – 2003)
Volume: 14x
Value: 4x

(2014 – 2015)
Value: 26%

(2014)
(2017)
Volume &Value: short-term increase

NGÂN HÀNG NHÀ NƯỚC VIỆT NAM
STATE BANK OF VIETNAM

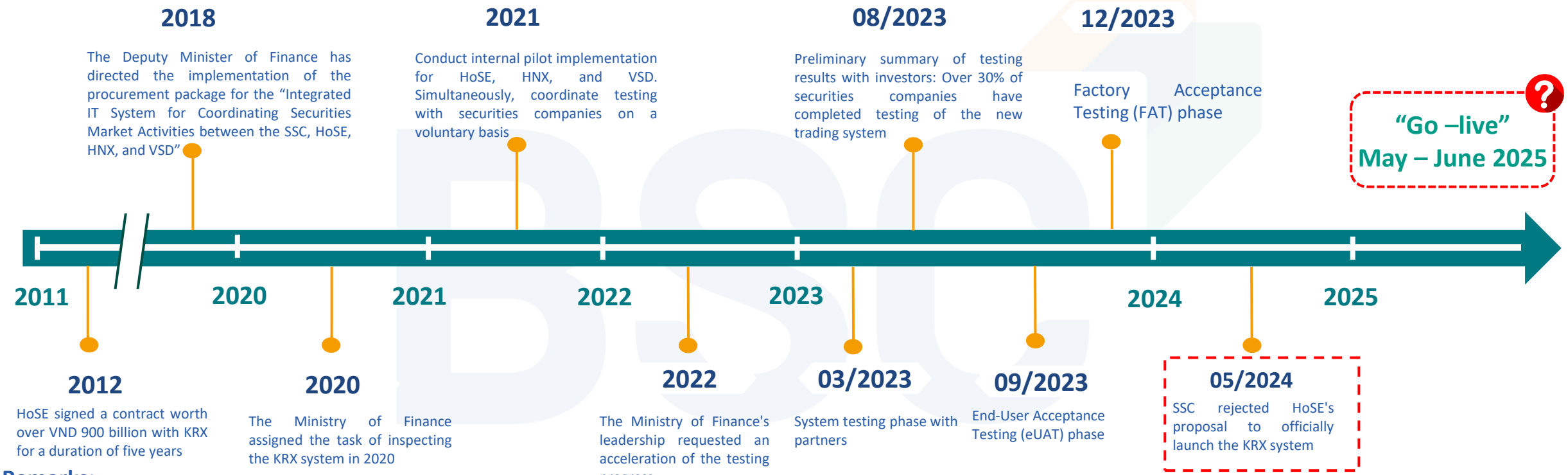
? → Clearing member

T + 2 → T + 1/ T+0 ?

1 investor - 1 SID

Source: BIDV Securities Company (BSC) compiled

Efforts to launch the KRX system



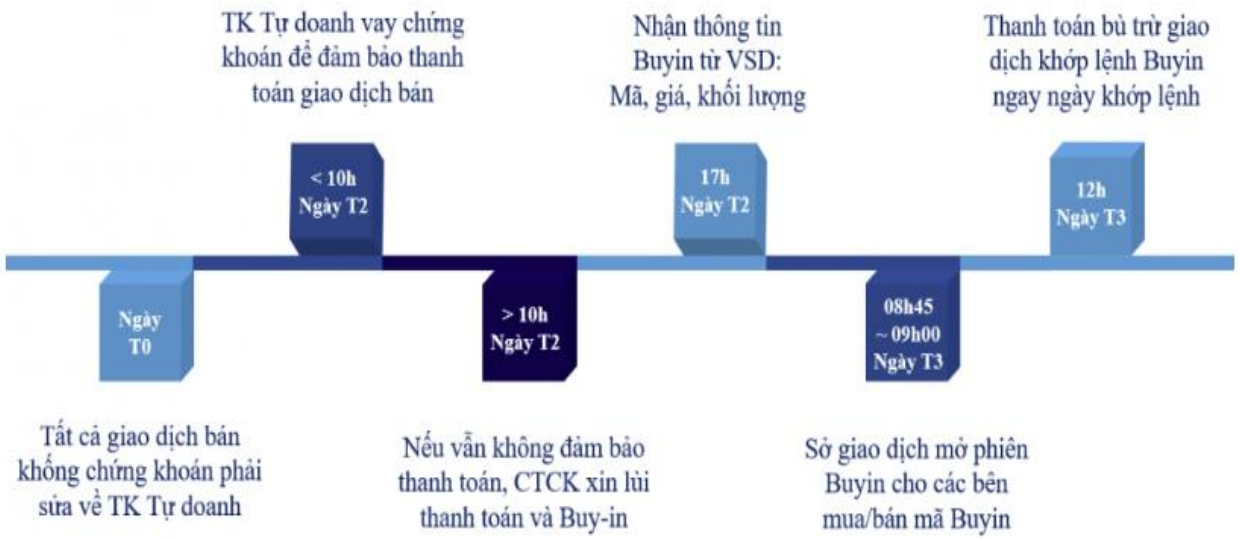
Remarks:

- The KRX IT system project was initiated in 2012. According to HoSE's initial plan, the implementation was expected to take approximately 18 months, with the system scheduled to go live in Q1/2015. However, after multiple delays due to various reasons, the system has yet to be officially launched. As shared by HoSE leadership on February 5, 2025, the KRX project has, in essence: (1) met legal requirements regarding information security; (2) undergone market-wide testing; and (3) reached the final stages before official market rollout. If launched in 2025, it would mark a significant milestone for the next development phase of Vietnam's stock market. **Notably, on March 11, 2025, the State Securities Commission (SSC) announced a roadmap of solutions for market upgrading, which mentioned that the KRX system is expected to be operational by May or June 2025.**
- Although the **KRX system is not a mandatory criterion for market upgrade consideration**, its early implementation would lay the foundation for the introduction of new products and serve as a critical step toward launching the Central Counterparty (CCP) model for the equity market. This would help shorten the settlement cycle, increase market liquidity, and thereby improve the remaining criteria evaluated by FTSE and MSCI — accelerating the upgrade process.

Source: BIDV Securities Company (BSC) compiled

Some notable (expected) features

Thời gian thanh toán trong giao dịch Buy-in



Mandatory Buy-in Transactions:

- Applied when a securities company (brokerage firm) fails to deliver sufficient securities for settlement with the Vietnam Securities Depository (VSD), after all other operational measures have been exhausted;
- Execution time: from 8:45 AM to 9:00 AM on trading days;
- Upon receiving a notice from VSD, the member is required to place a buy-in order on the designated date, with correct quantity, ceiling price, and specified account;
- Buy-in transactions will be conducted on a separate trading board;

→ This mechanism lays the groundwork for the introduction of short selling products and serves as a basis for executing securities settlement in cases of default or failure to deliver;

Adjustments to trading limits and CB rules in the Thai market

Thay đổi giới hạn trần và sàn cho SET, MAI và TFEX

Thị trường	Sản phẩm	Trần/Sàn	
SET, MAI	Cổ phiếu, chứng quyền, ETF, Chứng chỉ lưu ký ...	+/- 30%	+/- 15%
	Cổ phiếu nước ngoài	+/- 60%	+/- 30%
TFEX	HĐTL chỉ số/ quyền chọn, HĐTL ngành, HĐTL cổ phiếu riêng lẻ	+/- 30%	+/- 15%

3 giai đoạn ngắt mạch thị trường

Giai đoạn	Cũ		Mới	
	Index	Ngừng giao dịch*	Index	Ngừng giao dịch*
1	-10%	30	-8%	30
2	-20%	60	-15%	30
3	N/A	N/A	-20%	60

Lưu ý: giao dịch sẽ tiếp sau khi giai đoạn thứ ba được kích hoạt
***Đơn vị: phút**

Lưu ý: Các quy định sửa đổi sẽ có hiệu lực từ ngày 18 tháng 3 đến ngày 30 tháng 6 năm 2020

Nguồn: Sở giao dịch chứng khoán Thái Lan

☐ Cũ ■ Mới

Circuit Breaker Mechanism:

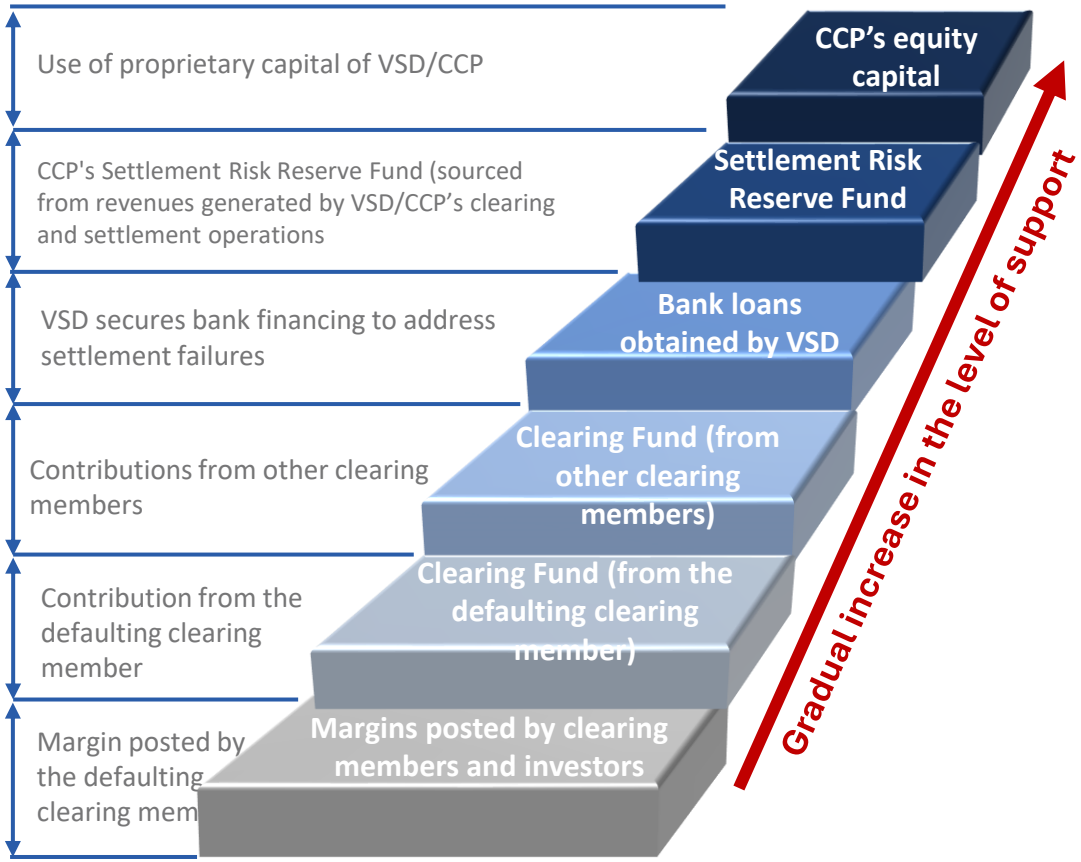
- A mechanism that automatically halts trading during a session when the stock index declines to, or beyond, preset thresholds programmed into the system and maintains such levels for a specified duration;
- Serves as a market stabilization tool to prevent panic-driven mass sell-offs occurring simultaneously;

→ This provides a critical legal and operational framework for managing and operating the market in emergency situations — aligning Vietnam's practices with those of regional and global markets.

Source: BIDV Securities Company (BSC) compiled

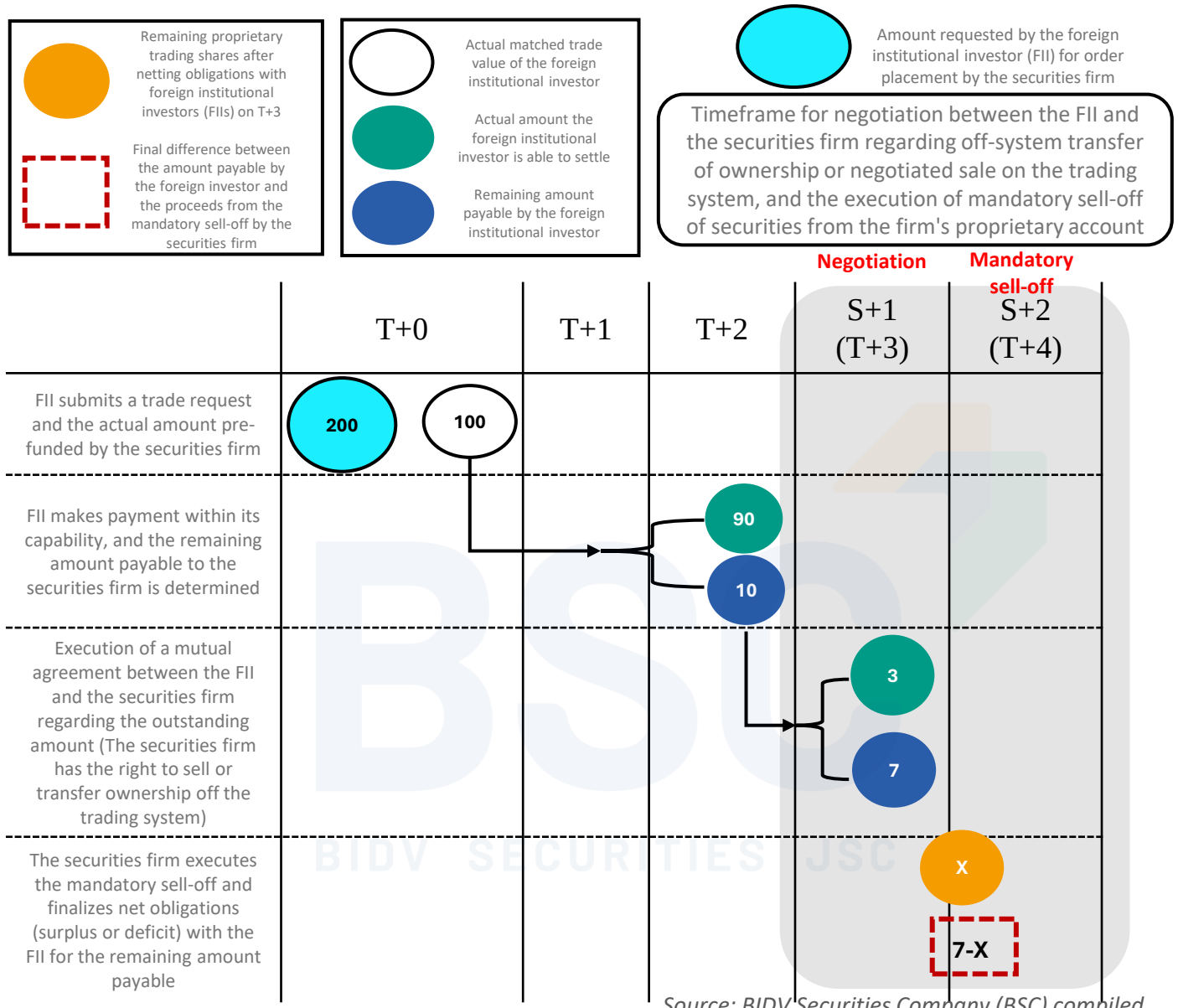
Settlement failure handling mechanism between securities firms and foreign institutional investors under the NPF solution

Default handling in the event of a member's cash settlement failure (risk management mechanism under the Central Counterparty – CCP model)



- Under the NPF solution, the Vietnam Securities Depository and Clearing Corporation (VSDC) will implement payment support measures for clearing participants through the Settlement Support Fund, loans from the settlement bank, and borrowing from the State Bank of Vietnam.
- The default handling mechanism for clearing participants (CIs) and the clearing and settlement model involving a Central Counterparty (CCP) are considered optimal solutions for the system — particularly in addressing the future margin requirements for foreign investors.

Flowchart for handling settlement shortfalls between Foreign Institutional Investors (FIIs) and securities firms under the "Non-Pre-Funding" (NPF) solution



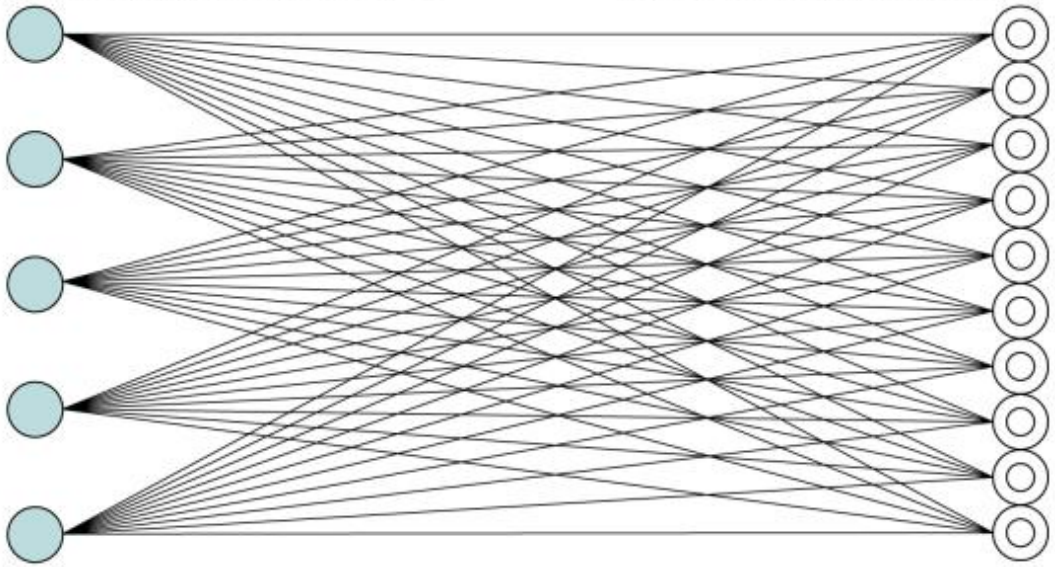
Source: BIDV Securities Company (BSC) compiled

Key Highlights of the CCP Model

Settlement model without a CCP

Number of selling members: 5

Number of buying members: 10

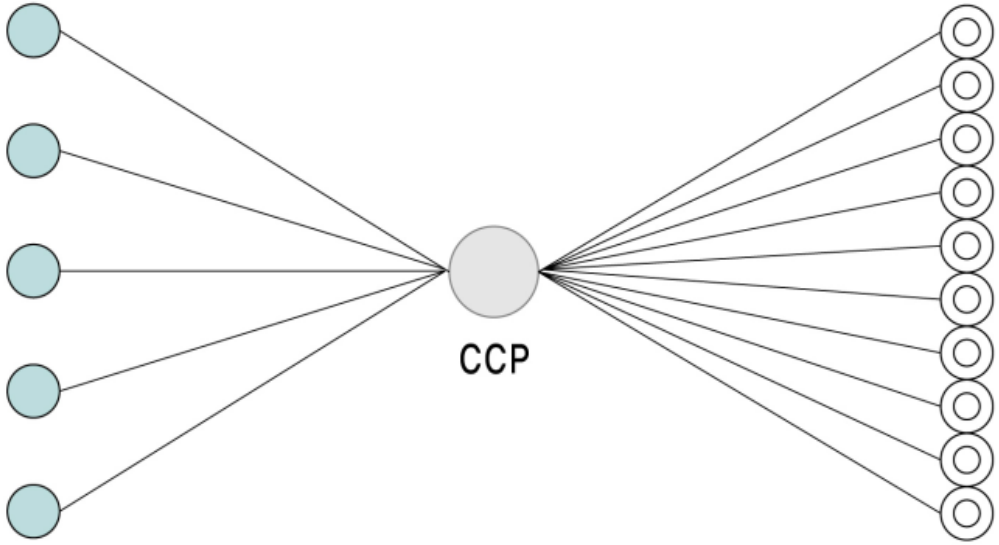


Up to 50 settlement transactions required

Settlement model with a CCP

Number of selling members: 5

Number of buying members: 10



Reduced to a maximum of 15 settlement transactions

- The CCP introduces: **(1) a position substitution mechanism and (2) a payment guarantee function**,→ which significantly differentiate the CCP model in the clearing and settlement of securities transactions.
- **The CCP will bring several benefits:** (1) Substantially increases investor purchasing power (compared to the current DvP method which requires 100% pre-funding);(2) Provides a basis for implementing short selling of securities pending delivery; (3) Resolves the pre-funding issue for foreign investors, thereby improving market liquidity.
- **To maximize its effectiveness and operational efficiency, the CCP model requires:** (1) a comprehensive legal framework; (2) robust technical infrastructure; (3) an appropriate risk management model; and(4) a mature cash equity market.

Source: KRX, BIDV Securities Company (BSC) compiled

How has Vietnam been actively working toward a market upgrade in practice?



3 years

- Reforming & major changes
- Watch list
- The upgrade approved

Sep/15 — FTSE Russell
Sep/15 — Deployed X-Stream INET Trading Platform
June/15 — Issued QFI
Sep/16 — Foreign ownership 29% -> 49%; foreign investors are allowed to participate in IPO
May/16 — T+2 applied
Apr/17 — Removing "pre-funding" + introducing the DvP settlement model and new products: short-selling, securities lending…
Jan/17 — IFRS applied
Jun/17 — MSCI
Feb/18 — Muqassa established
Mar/18 — FTSE Russell
May/18 — CMA & SAMA established a legal framework for CCP
Jun/18 — MSCI
Nov/18 — Loosening regulations on account opening for foreign investors
Jul/19 — Loosening the strategic foreign ownership ratio to 49%
Aug/20 — Muqassa go-live CCP

2015 2016 2017 2018 2019 2020 2021

2018 2019 2020 2021 2022 2023 2024 2025 - ?

Sep/18 — FTSE Russell
Mar/20 — Projects to apply IFRS
Aug/22 — T+2 applied
Sep/24 — Issuance of Circular 68 → removes pre-funding requirements and enables bilingual information disclosure
Nov/24 — Amendment of the 2024 Securities Law – establishes a legal framework for the creation of a CCP-dedicated entity.

7 years - ?

- Reforms implemented
- New reforms implemented
- Q2/23: Initiated reform efforts to achieve market upgrade
- Reforms expected to change

BIDV SECURITIES JSC

The SSC's solution package aimed at upgrading the stock market

09 actionable solutions toward market reclassification

State Securities Commission of Vietnam

A

Establishment of a dialogue group

The dialogue group consists of SSC , securities firms, custodian banks, investment funds, and experts

➔ **tasked with resolving issues to ensure the best possible market experience for foreign investors**

➔ **supporting the market upgrade process**

Policy solutions working group

Implementation of OTA

VSDC is expected to implement the Omnibus Trading Account (OTA), which will allow fund management companies to execute buy/sell orders simultaneously for all their managed funds, without having to place separate orders for each individual account. This initiative will simplify order placement for asset managers and foreign investors, offering greater convenience.

-> The implementation is expected to take place before August 2025

Amendment of regulations on FII account opening

SBV will amend certain legal regulations to simplify and shorten the account opening process for foreign investors engaging in indirect investment activities.

-> These amendments are expected to be issued in March 2025

B

Technology infrastructure solution group

STP

VSDC will implement the Straight Through Processing (STP) system for electronic trade communication between securities firms and custodian banks. At the same time, the STP system will be upgraded to adopt SWIFT-standard messaging -> mproving convenience for servicing foreign investors.

-> Implementation is expected in March 2025

KRX

SSC has instructed the stock exchanges and VSDC to promptly implement the required tasks and report back to the SSC

-> KRX system expected to go live in April 2025

CCP

Upcoming tasks to be implemented: (1) Establishing a subsidiary under VSDC dedicated to Central Counterparty (CCP) operations; (2) Finalizing the settlement procedures between VSDC and market participants; (3) Enabling commercial banks to become clearing members

➔ The CCP is expected to be operational in 2026.

C

Solution group related to Circular 68

Foreign room

Proposal to retain foreign ownership room for foreign investors when conducting share buyback transactions from securities firms → The implementation of the KRX system will enable the retention of foreign room until T+3

Information disclosure

SSC plans to **amend the information disclosure appendix** by **removing the requirement to disclose the identity of the authorized representative**

NPF solution

SSC has held discussions with securities firms regarding **their consensus on handling the following issues**: (1) the list of securities eligible for the Non-Pre-Funding (NPF) mechanism, (2) the determination of minimum cash requirements, (3) the process for handling failed trades, and (4) the contractual framework with clients.

-> Minimizing inconsistencies in the implementation of the NPF model.

Source: SSC (Link), BIDV Securities Company (BSC) compiled

Awaiting the SSC to materialize its plan for upgrading Vietnam's stock market in 2025



3 years

- Reforming & major changes
- Watch list
- The upgrade approved

- Sep/15 — FTSE Russell
- Sep/15 — Deployed X-Stream INET Trading Platform
- Sep/16 — Foreign ownership 29% -> 49%; foreign investors are allowed to participate in IPO
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- Aug/20 — Muqassa go-live CCP

2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021

2018 | 2019 | 2020 | 2022 | 2023 | 2024 | 2025 | 2026

- Sep/18 — FTSE Russell
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- Aug/22 — T+2 applied
- Sep/24 — Issuance of Circular 68 → removes pre-funding requirements and enables bilingual information disclosure
- Nov/24 — Amendment of the 2024 Securities Law – establishes a legal framework for the creation of a CCP-dedicated entity."
- Mar/25 — VSDC implements the STP (Straight Through Processing) system
- Mar/25 — SBV relaxes account opening regulations for foreign investors
- May-June/25 — The KRX system is expected to go live — addressing foreign ownership limit (foreign room) issues under Circular 68.
- Jun/25 — MSCI
- Aug/25 — VSDC launches the OTA system
- Sep/25 — FTSE Russell
- Implementation of the CCP

Reforms implemented

Cải cách mới thay đổi

Q2/23: Initiated reform efforts to achieve market upgrade

Reforms expected to change

7 years - ?

In the base-case scenario, BSC Research forecasts that Vietnam's stock market may be considered by MSCI for inclusion in the Watch List in June 2025, and that FTSE Russell may announce an official upgrade approval in September 2025



Securities sector stocks

Financial metrics of leading securities company

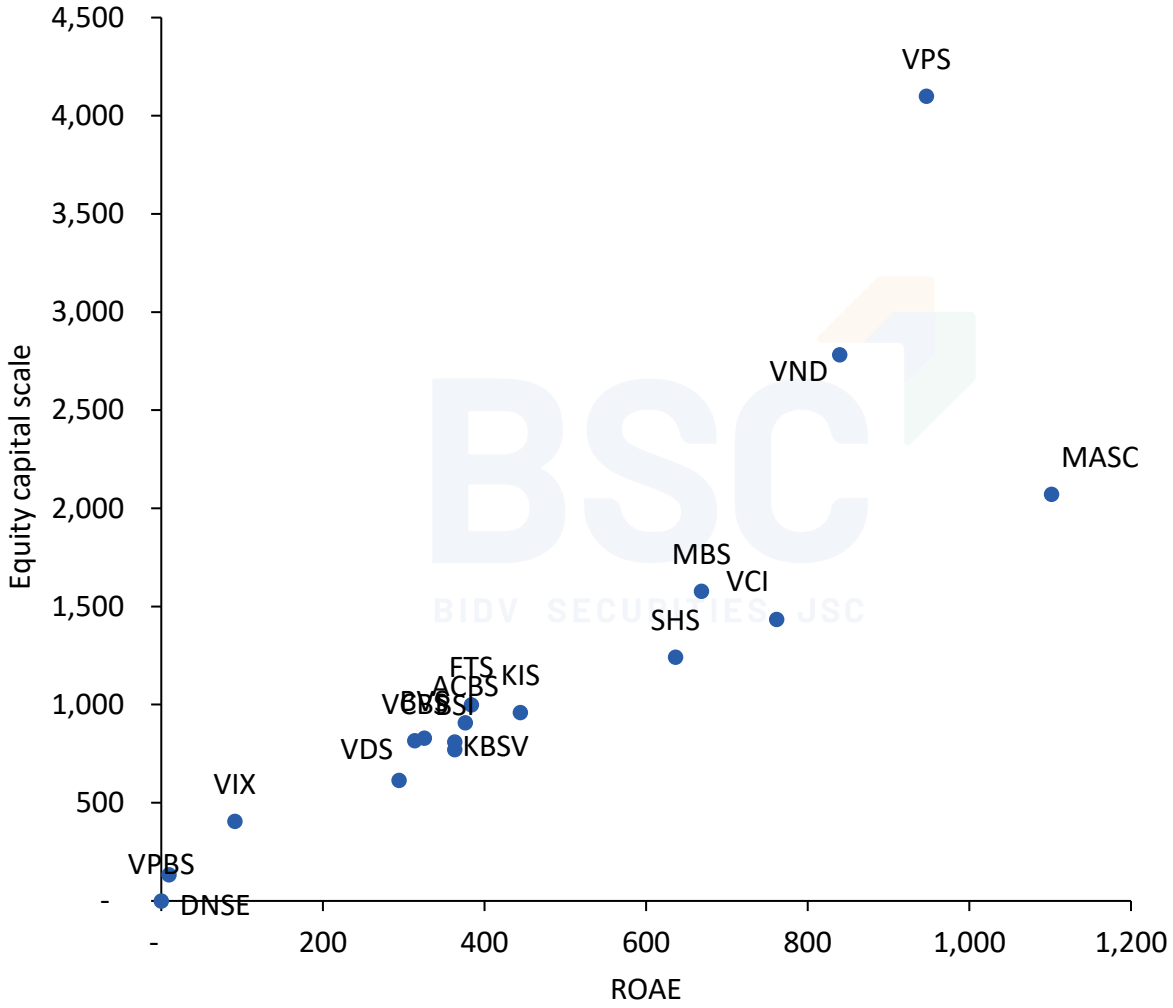
Table: Key parameters of some securities companies

Ticket	Exchange	Mkt Price	Mkt Cap (VND bn)	Average Volume (mn per day)	Total Equity (VND bn)	Debt/Equity	Revenue (VND bn)	EBT (VND bn)	ROA (%)	ROE (%)	P/E	P/B
SSI	HOSE	26,700	52,435	30,342	19,639	0.82	8,529.3	3,543.5	4.0%	11.3%	18.2	2.0
TCBS	OTC	N/A	N/A	N/A	19,613	0.99	7,615.3	4,802.1	7.9%	15.4%	N/A	N/A
VND	HOSE	15,100	22,987	22,958	15,223	0.52	5,324.4	2,088.3	4.0%	9.5%	13.4	1.2
HCM	HOSE	32,150	23,174	10,677	7,208	1.96	4,276.2	1,295.6	4.2%	11.1%	22.3	2.2
VCI	HOSE	39,250	28,185	10,147	7,181	0.87	3,695.5	1,089.3	4.2%	9.0%	16.8	2.2
VPS	OTC	N/A	N/A	N/A	5,700	1.10	6,466.3	3,153.8	9.5%	24.8%	N/A	N/A
MBS	HOSE	30,900	17,700	5,037.2	5,728	1.49	3,120.4	930.6	4.0%	12.4%	23.8	2.6
FTS	HOSE	50,500	15,449	3,455.0	3,059	1.72	1,147.7	663.2	6.3%	14.6%	27.2	3.8
SHS	HOSE	15,000	12,197	14,118.6	8,132	0.37	1,991.3	1,239.3	8.0%	9.5%	12.6	1.1
BSI	HOSE	56,500	12,603	1,097.3	2,231	1.03	1,410.7	515.7	4.4%	8.5%	30.8	2.5
DSE	HOSE	25,100	8,283	1,013.5	3,300	0.96	807.4	227.5	2.0%	5.0%	45.6	2.1
VDS	HOSE	20,700	5,030	1,975.6	2,430	0.98	987.4	355.6	5.0%	11.1%	17.4	1.8
VIX	HOSE	12,450	18,158	62,370.0	14,585	0.36	1,837.8	815.1	4.6%	5.3%	27.4	1.1

Note: Data as of 12/03/2025

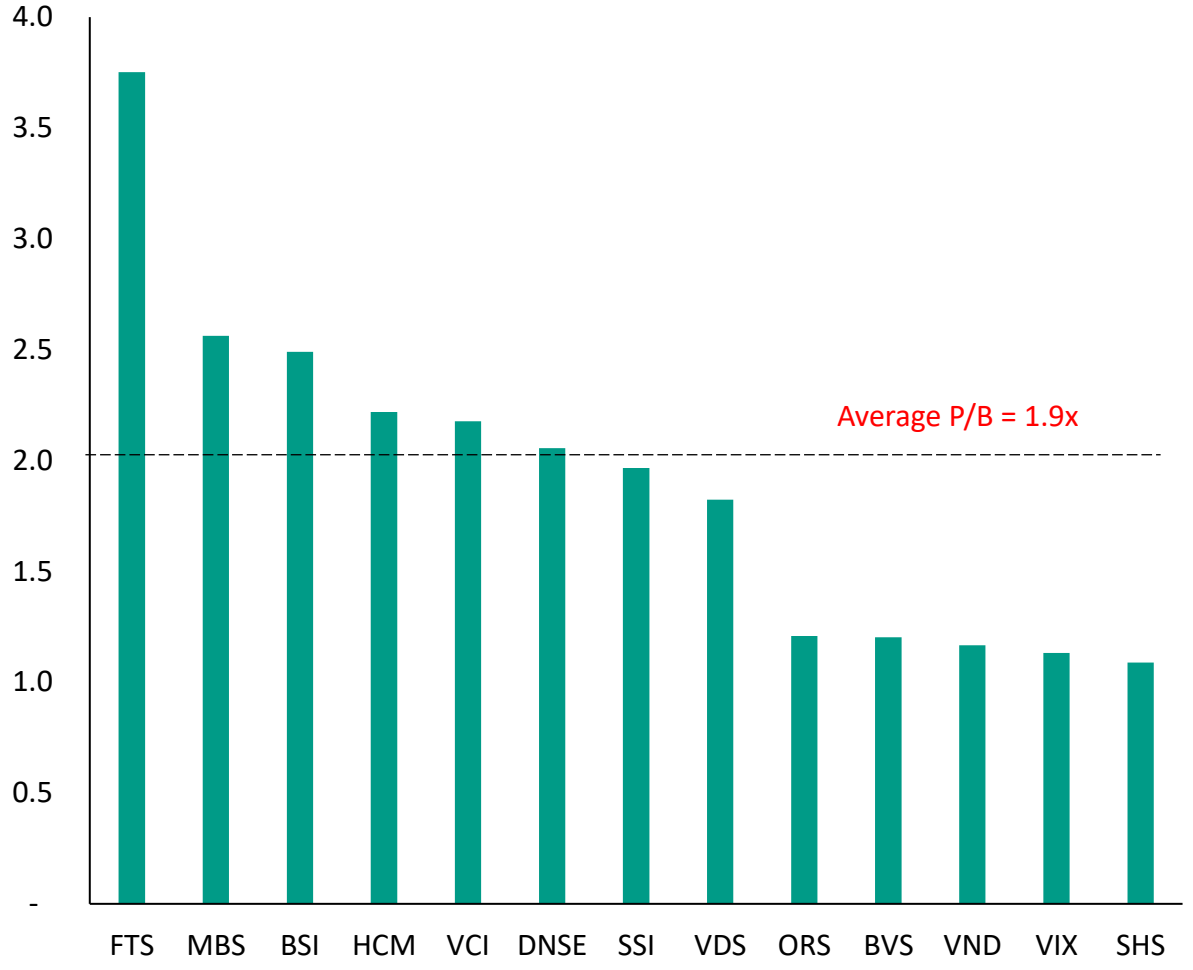
Source: BIDV Securities Company (BSC) compiled

Figure: Scale of equity capital and ROE profitability of securities companies



Source: BIDV Securities Company (BSC)

Figure: The current P/B valuation of securities companies averages around nearly 2 times



Source: BIDV Securities Company (BSC)

Note: Data as of 12/03/2025

Disclaimer

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Bloomberg: **RESP BSC ResearchV <GO>**



APPENDIX

A. Assessment reports by BSC Research related to the stock market upgrade theme

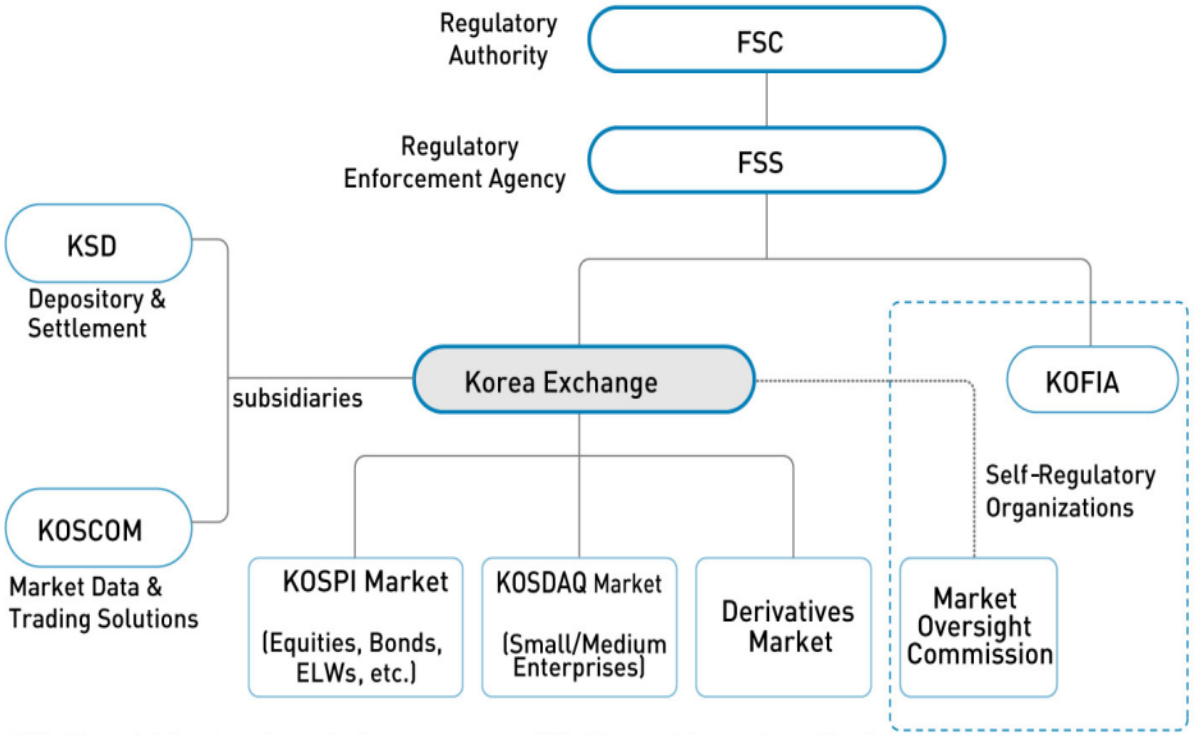
1. *Vietnam Stock Market Upgrade Report (March 2024)*: ***Link***
2. *Report on the Practical Implementation of Day-Trading in Selected Asian Countries (June 2024): **Link***
3. *Sector Outlook 2025 – The Era of Emergence (December 2024): **Link***
4. *Selected equity reports related to the stock market upgrade theme (BSC will provide continuous updates):*

+ HPG – The Steel King (Link); MSN – Unlocking the Efficiency Phase (Link);

+ VNM – Asserting Market Leadership (Link); VHM – The Forgotten Diamond (Link)

Capital market structure and clearing & settlement process in South Korea

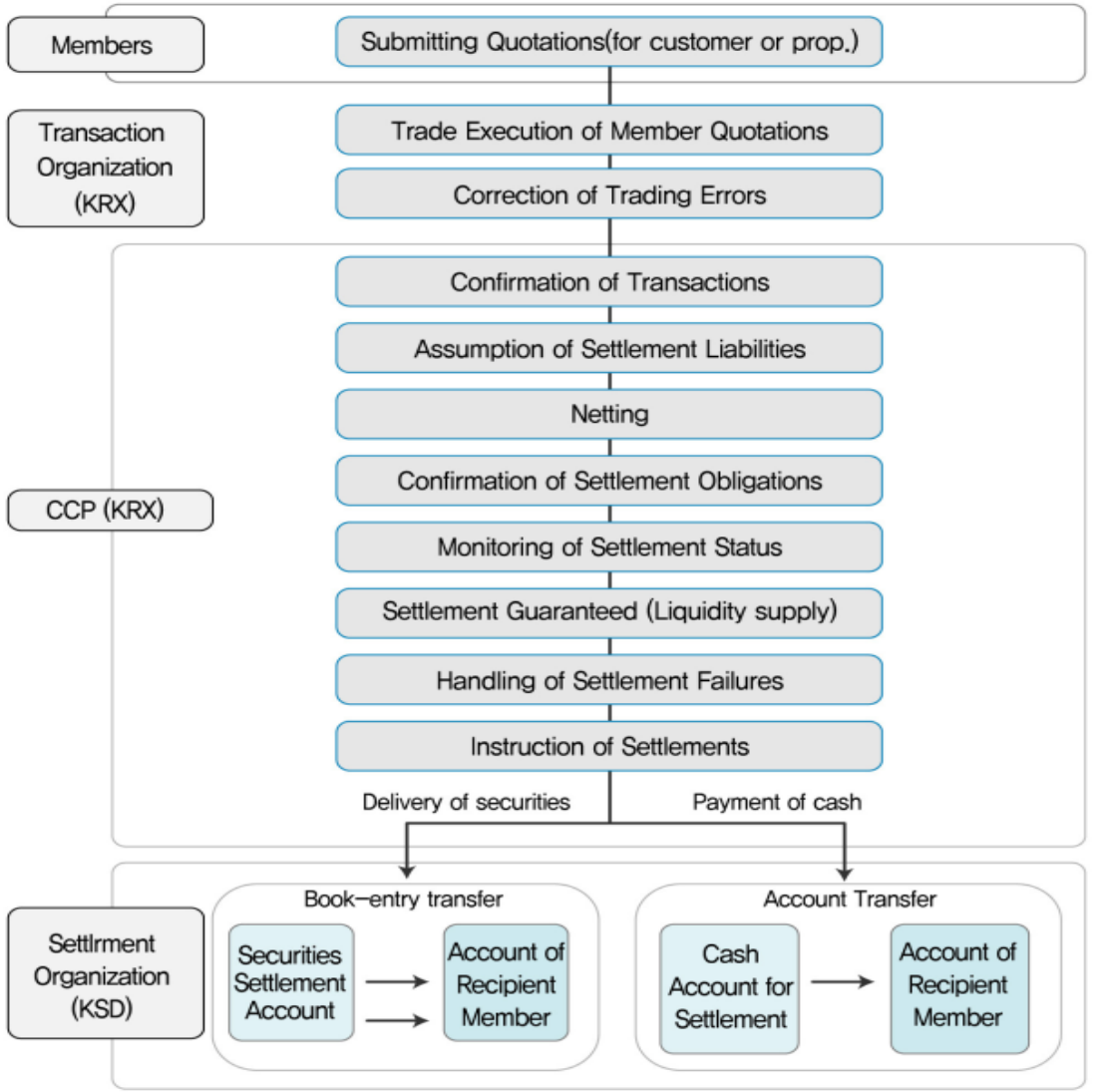
Structure of Korean Capital Market



FSC: Financial Services Commission
FSS: Financial Supervisory Service
KOFIA : Korea Financial Investment Association

KRX KOREA EXCHANGE

Clearing & Settlement Procedures in KRX Markets

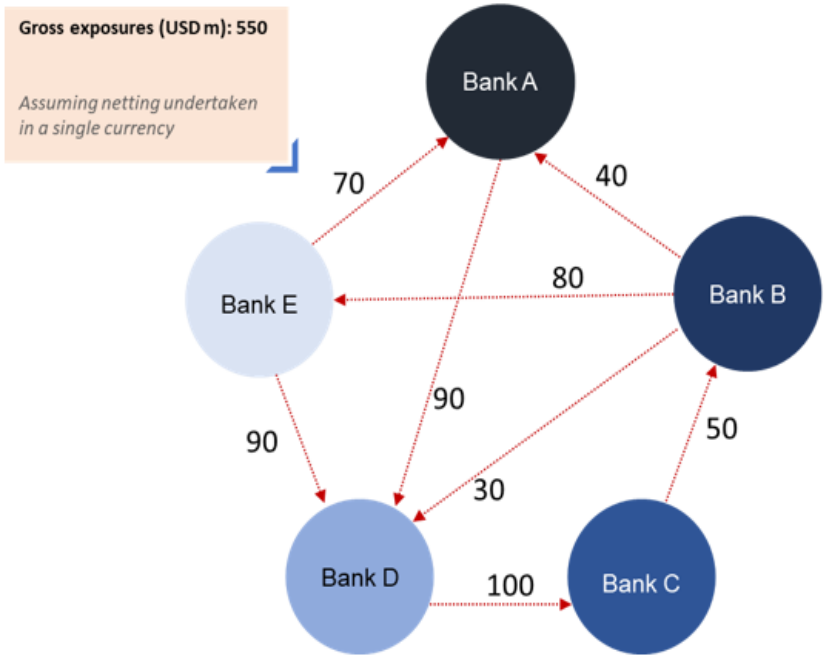


Source: KRX, BIDV Securities Company (BSC) compiled

Benefits of the CCP framework based on CCP Global's standards

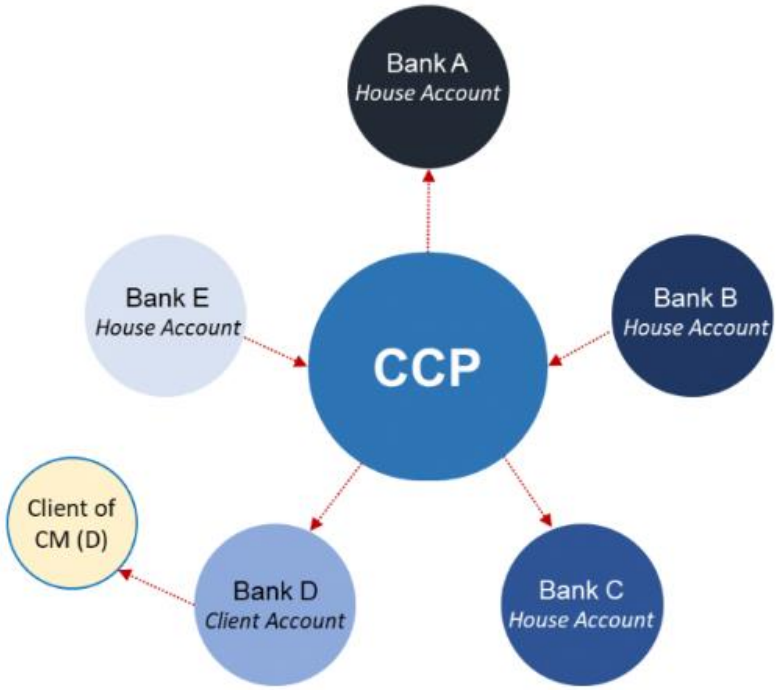
Bilateral Trading Ecosystem

(Non-cleared)



CCP, CM and Client Relationship

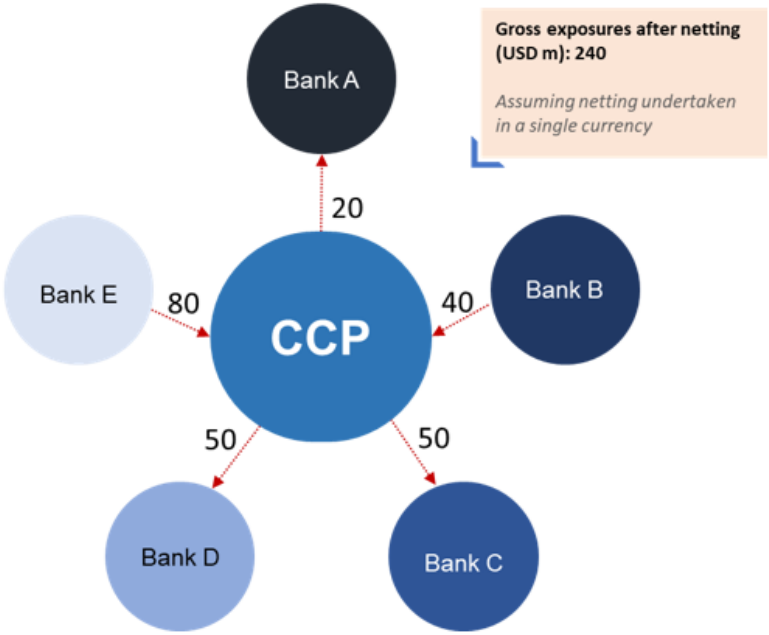
(Centrally Cleared)



CM: Clearing Member | CCP: Central Counterparty

Multilateral Trading Ecosystem

(Centrally Cleared, After Netting)



Source: CCP Global, BIDV Securities Company (BSC) compiled

Notable anticipated features of the KRX system (expected)

Cash equity market

	Current System	New System
I. Market Board Display		
1. Periodic Auction Matching	Displays the three best bid and ask prices for each stock along with the corresponding bid/ask volumes.	The three displayed bid/ask prices represent the best projected remaining orders after matching.
2. Foreign Ownership Limit (Room)		
Matched Transactions:	Current Room decreases immediately when a foreign investor's buy order is matched.	Current Room decreases as soon as the foreign investor's buy order is entered into the system.
Negotiated Transactions (foreign investor buying from domestic individual)	Current Room decreases immediately when the negotiated trade is executed.	Current Room decreases as soon as the negotiated buy order from the foreign investor is entered into the system.
II. Trading Mechanism		
1. Negotiated Transactions	The seller inputs the negotiated trade order and the buyer confirms it.	Either the buyer or seller can initiate the transaction; the counterparty confirms or rejects it.
Amendments/Cancellations for Unexecuted Orders	Members may amend negotiated trades by canceling and re-entering a new order, provided they present the original investor order, receive agreement from the counterparty, and obtain approval from the exchange.	Investors are not allowed to amend or cancel negotiated trades once entered into the system.
2. Order Matching Transactions		
Amendments/Cancellations	Incorrect orders can be canceled and re-entered correctly.	Allows price/volume edits on unexecuted limit orders (LO) or the unexecuted portion during continuous trading, following these rules:
Order Priority	is determined based on the time the valid order is entered into the exchange's trading system	- Price edits or increases in volume change the time priority of the order. - Decreasing volume does not affect time priority.
3. ATO/ATC Periodic Matching Session		
Order Priority	ATO/ATC orders are prioritized over LO orders during matching.	ATO/ATC orders are not prioritized over LO orders during matching.
Lot Size	Only round lots are allowed.	Both round lots and odd lots are allowed.
4. Continuous Matching Session (LO)		
Market Order	- HNX: MAK, MOK, MTL - HSX: MP	- HNX: FAK, FOK, MTL - HSX: MTL
5. Odd-Lot Transactions	Allowed only during continuous matching and negotiated sessions.	Allowed in periodic matching, continuous matching, and negotiated transactions.
6. Trading of Securities under Trading Restrictions (PCA)	Only allowed in the afternoon session (1:00 PM – 3:00 PM) via matching and negotiation.	- Periodic matching every 15 minutes. - No amendments/cancellations allowed during the last 5 minutes of each matching session.

Source: BIDV Securities Company (BSC) compiled

Notable anticipated features of the KRX system (expected)

	Derivatives market	
	Current System	**New System**
1. Trading Time	Clients can trade on the next trading day after VSD approves the account opening.	Clients can trade **immediately after VSD approves the account opening.**
2. Change in Contract Code Naming Rules	**Naming Convention:** - Underlying asset (VN30/GB05/GB10) - Product type (F) - Expiry date (YYMM) * Example: VN30F2405 – VN30 index futures contract expiring in May 2024	**Naming Convention:** - Security type: Derivatives = 4 - Derivatives group: Futures = 1 - Underlying asset: VN30 = 11, GB05 = B5, GB10 = BA - Expiry year: 2024 = E, 2025 = F, … - Expiry month: January = 1, February = 2, …, September = 9, October = A, November = B, December = C - Derivative identifier: Futures = 000
3. Margin Principle	Clients must deposit margin to VSD before placing orders.	Margin is applied after order placement.
4. Close-out Order		**Close-out Order**: The close-out order is a special type of order specifically designed for blocked accounts, allowing them to reduce violating positions through offsetting orders without rejection from the trading system. The execution of this order may reduce the required margin, position limits, or open interest (OI) limits.

Source: BIDV Securities Company (BSC) compiled

BIDV SECURITIES JSC