

Exchange Listed Derivatives

“Improving marketplace efficiency”

Survey presentation
28th June 2005



forming
the future
of finance.
capco.com

Contents

- Introduction
 - Background and objectives
 - Scope of work
 - Approach
 - Current state of industry
- Key industry themes
- Industry recommendations
- All industry themes
- Detailed collateral ranges

Introduction

Background and objectives

- Following discussions with the Futures Industry Association (FIA) and the Futures and Options Association (FOA), Capco were asked to conduct a global survey of market participants trading listed derivatives across major exchanges and clearing houses
- The main objective of the study was to identify the key areas that contribute to the additional costs borne by the industry above and beyond transaction fees. In particular, the goal was to identify common practices/services that market infrastructure players should adopt to facilitate global trading
- This presentation contains the consolidated list of identified issues and serves as input to the Global Leadership “Summit” held at The Grove on 28th June 2005

Introduction

Scope of work

Industry Contributors

Market participants:

- Institutional
- Bank-owned
- Independent
- Boutique/Market Maker

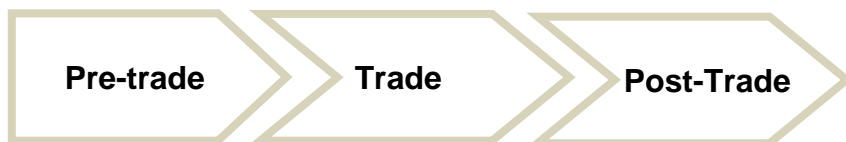
Market infrastructure players:

- Futures and options exchanges
- Clearing houses

Regions



Trade lifecycle



- | | | |
|----------------------|---------------------------------|----------------------------------|
| ▪ Research | ▪ Order and quote mgt | ▪ Clearing |
| ▪ Data and analytics | ▪ Execution and trade reporting | ▪ Risk and collateral management |
| ▪ Sales | ▪ Trade and position management | ▪ Settlement |
| ▪ Price discovery | | |

Products

Listed derivatives:

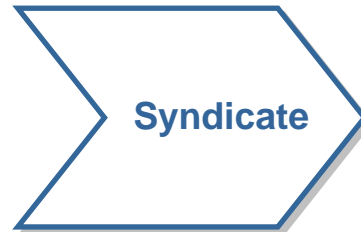
- Financial
- Commodity

Introduction

Approach



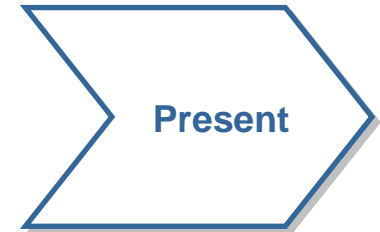
- Conducted interviews with selected market participants
- Identified core industry themes



- Reviewed findings with market infrastructure players



- Refined industry themes
- Developed findings



- Presented findings to Global "Summit"

Industry survey focus:

- 12 market participants (FCMs*) pre-selected by the FIA
- 14 exchanges/clearing houses pre-selected by the FIA
- Qualitative findings and data
- Common industry themes – excludes explicit focus on fee levels

* Top FCMs as listed by the CFTC "Selected FCM Financial Data" report

Industry business drivers:

- Revenues
- Costs
- Control
- Consolidation

Industry issues:

- Process efficiency
- Ease of functionality
- Costs (qualitative)
- Technology
- Regulatory

Introduction

Approach – trading topics

Market coverage

- Are there issues with depth/breadth of product coverage across the exchanges?

Technology

- Do inconsistent exchange interfaces pose a problem for systems integration?
- Flexibility; connectivity; scalability; performance; batch processing vs real-time?

Pricing

- Is the pricing structure sufficiently transparent to members?

Market models supported

- Do inconsistencies in market models across exchanges pose a problem?
 - Order driven vs hybrid
 - Trading day sequence
 - Matching algorithms
 - Pre and post trade anonymity

Functionality

- Is consistent functionality provided across key areas?:
 - Markets operations and surveillance
 - Management of membership
 - Market control functions and market operations
 - Monitoring market activity
 - Analysis of historical data
 - Order/quote entry and validation
 - Quote and order types
 - Volume and time related conditions
 - Combination orders
 - Trading strategies
 - Quote and order book management
 - Order entry
 - Amendment, cancellations and validation criteria
 - Order quote matching
 - Order book set-up features
 - Trade management and reporting
 - Correction of erroneous trades
 - Trade enrichment
 - “Give-up” functionalities
 - Risk management
 - Risk management features, such as intra-day limits and volatility interruptions
 - Account allocation procedures
 - Market making

Introduction

Approach – clearing topics

Governance and strategy

- Can members exert an influence on the strategic direction of clearing Houses?
- Is the overall strategic direction of the clearing houses aligned with the strategic priorities of the members?

Pricing

- Is the pricing structure for clearing consistent across clearing houses/regions?
- Is the pricing structure sufficiently transparent to members?

Regulatory and legal

- Is there common regulation across products/regions/exchanges?
- Is there a positive market perception of the industry regulatory and legal framework?

Risk model

- Do varying margining models of the clearing houses present an issue?
- Do the clearing houses provide adequate market protection and robust default procedures?

Services

- Are there inconsistencies with the functional services provided by the exchange/clearing house?
 - Management of membership
 - Trade management
 - Clearing and settlement - settlement guarantee/fails policy
 - Position management – full netting
 - Exercise and expiry management
 - Cross market/product margining
 - Real-time novation
 - Customer support and member training
 - Corporate action management
 - Collateral optimisation
 - Standard risk calculation
- Are there issues with inconsistent membership structures across the exchanges (product vs market groupings)?

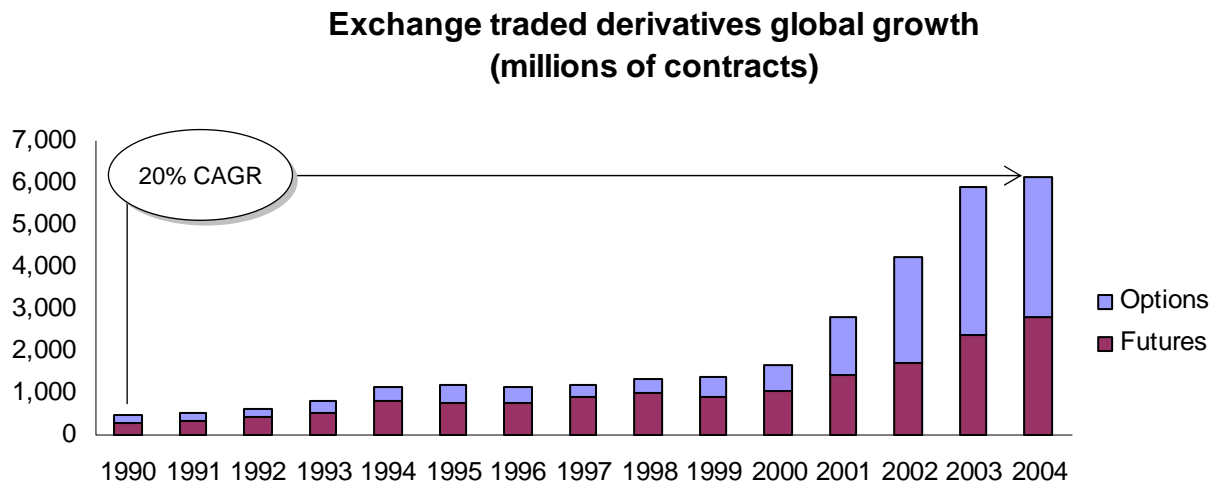
Technology

- Are there issues with the level of manual processing required by the exchanges? Volumes?
- Does the existence of disparate clearing houses systems cause an integration issue for members? Between regions?
- How reliable are the applications that support clearing and settlement functions?
- Are participants required to store/maintain disparate reference data to handle demands of varying exchanges?

Introduction

Current state of industry – futures and options brokerage has become a commodity, scale driven business

- Growth in futures and options contracts traded has been consistently high – 20% CAGR from 1990-2004



Source: Bank of International Settlements

- The listed derivative markets have become increasingly global, in terms of product range, major exchanges and clearing houses that must be covered, client geographic footprint and hence the scale of broker operations required
- Margins for futures and options brokers are increasingly thin, hence significant volume is required to remain economically viable

Key industry themes

Fee levels are the number one industry cost issue. The following themes are focused on cost reduction and process efficiency

Technology and interfaces

- Open vs closed APIs
- Proprietary vs “Open” protocol (e.g. FIX)
- Standardisation and usability by customer systems
- Co-ordination of upgrades between users and ISVs
- Consistent approach to addressing system downtime and off-market trades and prices
- Bandwidth

Market operations and surveillance

- Membership requirements – uniformity across regions and recognition in different locations
- Local membership requirements and individual investor registrations
- Crossing and block trading rules standardisation

Quote and order book management

- Simple but flexible strategies
- Standardisation of base set of order types vs “value-added”
- Order/quote types and strategies
- Location of functionality: exchange vs ISV vs market participant

Give-ups

- Procedures and processing
- Fees
- Standardise system (GAINS) – billing and collection of give-ups
- Maximum use of de-facto standard by brokers

Risk management

- SPAN and TIMS
- Standardisation – impact of non recognised VaR models

Key industry themes

Fee levels are the number one industry cost issue. The following themes are focused on cost reduction and process efficiency

Margin and collateral management*

- Standardisation of margining methods
- Gross vs net Margining
- Collateral range accepted
- Collateral fees
- Transparency

* Clearing houses only

Fee structures

- Automated fee schedules
- Simplified fee rebate structure – compatibility with brokers systems and procedures for passing benefits to end investor
- Consistent auditing between participants and exchanges/ clearing houses
- Transparency

Exercise and assignment policy

- Standardisation of exchange processing – global rule book
- Auto exercise when in-the-money
- Delivery of information before market opens
- Timing of clearing cycles

Corporate actions

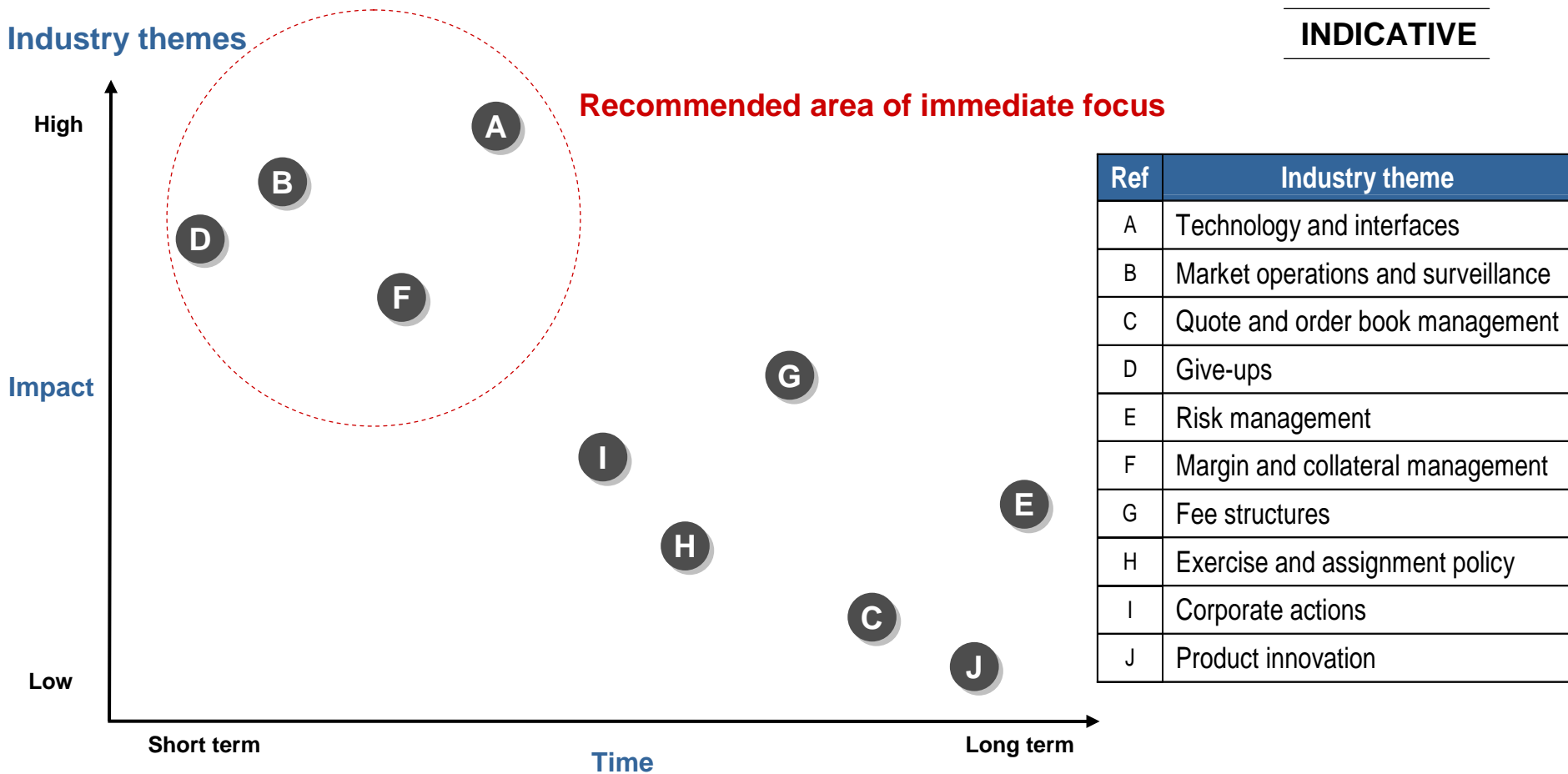
- Standardisation
- Timely delivery of information
- Automate – reduce scrubbing of data

Product innovation

- Provides healthy competition
- Coordination of schedules – product launches
- Lead time on product launches
- Consultative approach – value added
- Relationships between vendors and market infrastructure players

Key industry themes

Based on the qualitative feedback received, not all themes have equal priority for the industry



Key industry themes

Technology and interfaces

Market participants' view

- Deploy open APIs that both ISVs and market participants can develop against
- Introduce a standardised protocol, such as FIX, for APIs
- Improve co-ordination of upgrades between market infrastructure players and ISVs
- Develop consistent approach to addressing system downtimes (e.g. "busting of trades") and off-market trades and prices
- Ensure that network bandwidth is continuously managed to better control the flow of relevant output

Market infrastructure players' response

- Most recognise that open APIs are required for growth
- FIX, FpML and other protocols are being put forward as possible solutions; however, these need to be balanced against functional and technical requirements
- Balance between competitive advantage and transparency for co-ordinating system upgrades needs to be recognised, with upgrades normally market and business case driven
- A common system used by all market infrastructure players would eliminate many of the issues, but this is likely to be impractical to achieve
- Common guidelines on system releases need to be recognised, with upgrades normally market and business case driven
- Industry should promote standard BCP procedures
- Various standards across the market on "busting trades" after system downtime are often driven by regulators and product complexity
- Increased demand for bandwidth and core system processing is an evolution of the marketplace

Key industry themes

Technology and interfaces

Market infrastructure player	TRADING			CLEARING		
	API Name	FIX * or Proprietary	Open/Closed	API Name	FIX * or Proprietary	Open/Closed
CBOT	ebot/LIFFE CONNECT API	Proprietary	Open			
CME	CME iLink 2.0	FIX	Open	Positions services API	FIXML	Open
EUREX	VALUES API	Proprietary ¹	Open	VALUES API	Proprietary ¹	Open
Euronext.liffe	CONNECT® API Version 8.0	Proprietary	Open			
HKFE	OMex API	Proprietary	Open	OMex API	Proprietary	Open
IPE	ICE API	Proprietary	Open			
LCH.Clearnet	No single API used	Proprietary	Open	No single API used	Proprietary	Open
LME	Trade Capture API	Proprietary	Closed ²			
NYMEX	NEON API	FIX	Open	ClearPort API	FIXML	Open
OCC				ENCORE API	Proprietary	Open
SGX	OMnet API (CLICK)	Proprietary	Open	OMnet API (CLICK)	Proprietary	Open
SFE	CLICK XT™ API	FIX	Open	OMnet API	Proprietary	Open
TIFFE	LIFFE CONNECT API	Proprietary	Open			
TSE	CORES-FOP	Proprietary	Closed			

Notes:

* FIX = Financial Information eXchange

1. Plus FIX transaction gateway

2. Limited API

13 Exchange Listed Derivatives – “Improving marketplace efficiency” - 28th June 2005 - Capco confidential

Source: Exchange/Clearing House interviews and websites

Key industry themes

Market operations and surveillance

Market participants' view

- Establish uniform approval across regions for membership requirements, facilitating “passporting” of memberships
- Reduce cost and complexity by harmonising local membership requirements and individual investor registrations:
 - floor/local and emerging markets driven
 - rules have changed with the times – membership requirements to reflect a global electronic market
- Standardise crossing and block trading:
 - different reporting times and size restrictions
 - appreciation that there will always be need for business to execute off-exchange

Market infrastructure players' response

- Regulators dictate most of the requirements and practices implemented by the market infrastructure players make standardisation and “passporting” difficult
- Both market infrastructure players and market participants need to rally the regulators for the benefit of a global open industry
- Irrespective of regulations, market participants must provide appropriate internal controls and structures
- Market infrastructure players want a “go to” person for issues resolution, etc – legal standing may vary from one location to the next
- Attitude and approach to crossing and block trading born out of historic regulatory and market practice – ideally no-one should be disadvantaged in an open market

Key industry themes

Market operations and surveillance

Market infrastructure player	TRADING			CLEARING			Crossing	Block trading
	Membership (individual/firm)*	Presence (Local vs Remote)	Formal exams (Yes/No)	Membership (individual/firm)*	Presence (Local vs Remote)	Formal exams (Yes/No)		
CBOT	I	Remote	Yes				✓	✗
CME	F	Remote	No	F	Remote	No	✓	✓
EUREX	F	Remote	Yes	F	Remote	Yes	✓	✓
Euronext.liffe	I	Remote	No				✓	✓
HKFE	F	Local	Yes	F	Local	Yes	✗	✓
IPE	I	Remote	Yes ¹				✓	✓
LCH.Clearnet				F	Remote	No		
LME	F	Local	Yes				✓	✓
NYMEX	I	Remote	Yes	I	Remote	No	✓	✗
OCC				F	Remote	No ²		
SGX	F	Remote	Yes	F	Local	Yes	✗	✓
SFE	F	Local	No	F	Local	No	✓	✓
TIFFE	I	Local	Yes				✓	✓
TSE	F	Local	Yes				✓	✓

Notes:

Source: Exchange/Clearing House interviews and websites

* I = "Responsible individual" named and F = Membership held only at firm level

1. Revised floor trader's exam for individual participants

2. Some individuals require NASD certification

Key industry themes

Give-ups

Market participants' view

- Standardise procedures and processing to improve operational efficiency, for example:
 - allocation of give-ups at order entry vs post execution
 - manual vs automated take-up – leads to potential non-desired clearing relationship
- Standardise fees for processing
- Establish common system for billing and collection of give-up fees (e.g. GAINS)
- Maximise broker participation and use of common feed systems

Market infrastructure players' response

- Vertical vs horizontal exchange/clearing house integration affects processing and timing
- Systems and interfaces also impact how give-ups are processed (e.g. built into third party solutions), but some market infrastructure players do not have a system at all
- The drive for a standardised brokerage fee process and system, and overall industry take-up is in the hands of the market participants
- An independent and separate entity may be required to structure and govern give-up processing

Key industry themes

Give-ups

Market infrastructure player	Give-up charge
CBOT	\$0.05 ¹
CME	\$0.05 ²
EUREX	No charge
Euronext.liffe	No charge ³
HKFE	No charge
IPE	No charge
LCH.Clearnet	No charge

Market infrastructure player	Give-up charge
LME	No charge
NYMEX	No charge ⁴
OCC	No charge
SGX	No charge
SFE	No charge
TIFFE	No charge
TSE	Not applicable ⁵

Notes:

1. Per contract charge to executing and claiming firm
2. Charge to executing firm (tiered volume discounts available for large users)
3. If done on same day as trade in TRS system
4. No give-up mechanism. Floor brokers charge "ATOM" for execute and allocation of trades
5. No give-up facility

Source: Exchange/Clearing House interviews and websites

Key industry themes

Margin and collateral management

Market participants' view

- Standardise margining methods (gross vs net margining), and aim to net margin across exchanges using same clearing house
- Remove need for upfront margining – emerging markets (i.e. sending margin on T-1)
- Improve transparency to validate margin information for market participants and end investors
- Establish common set of collateral that can be accepted by clearing houses globally
- Rationalise collateral deposit fees as well as utilisation fees and haircuts, especially relating to cash deposits and interest rates applied
- Simplify and standardise collateral registration process (e.g. held market participant account vs transfer to clearing house account)
- Encourage collaboration between member firms and clearing houses in order to improve consistency of rules and documents

Market infrastructure players' response

- The trend is for clearing houses to move to net margining, particularly for market participants' "house accounts"
- Few charge a custody fee on collateral deposits to cover costs
- Difficult to standardise on collateral range accepted due to regulatory and custodial issue; however, range should be broadened
- Clearing houses are faced with the issue of proving title/access to pledge collateral outside their environment – results in an increased cost for infrastructure to manage and process the collateral

Key industry themes

Margin and collateral management

Acceptable forms of collateral at clearing houses

Clearing house	CASH					GOVT. BONDS				CORP BONDS	EQUITIES	OTHER
	G5*	CHF	SKANDI	AUD	OTHER	US	EUR	GBP	OTHER			
CME - Clearing Division	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EUREX Clearing AG	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
HKFE Clearing Corporation					✓	✓			✓			✓
LCH.Clearnet	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
NYMEX Clearing House					✓ ¹	✓						✓
Options Clearing Corporation	✓	✓			✓	✓			✓		✓	✓
SGX Derivatives Clearing	✓				✓	✓	✓		✓		✓	✓
SFE Clearing Corporation	✓ ²			✓	✓	✓			✓		✓	✓
TIFFE Clearing					✓ ³				✓	✓	✓	✓
JSCC					✓ ³	✓			✓	✓	✓	✓

Collateral range notes:

Simplified overview of detail in Appendix

* G5 currencies = EUR (France, Germany), JPY, GBP, USD

** SKANDI currencies = DKK, NOK, SKK

1. USD only

2. All G5 currencies except GBP

3. JPY only

Market infrastructure player	Clearing house	Fee for collateral deposit (bps)
CBOT, CME	CME - Clearing Division	0 ¹
CBOE	Options Clearing Corporation	0
EUREX	EUREX Clearing AG	1-2 ²
HKFE	HKFE Clearing Corporation	50 ³
Euronext.liffe, IPE, LME	LCH.Clearnet	10 ⁴
NYMEX	NYMEX Clearing House	0
SGX	SGX Derivatives Clearing	12.5 ⁵
SFE	SFE Clearing Corporation	25-50 ⁶
TIFFE	TIFFE Clearing	0
TSE	Japan Securities Clearing Corporation (JSCC)	0

Source: Exchange/Clearing House interviews and websites

Collateral deposit notes:

1. A fee of 5bps for collateral placed in the IEF3 & IEF4 programs
2. Cost of custody
3. Charges apply to utilised non-cash collateral; no fee for cash
4. Only for non-cash collateral
5. Cash (Cash rate - 12.5bps)
6. Fee is 25bps for house cash and collateral. 50bps for clients

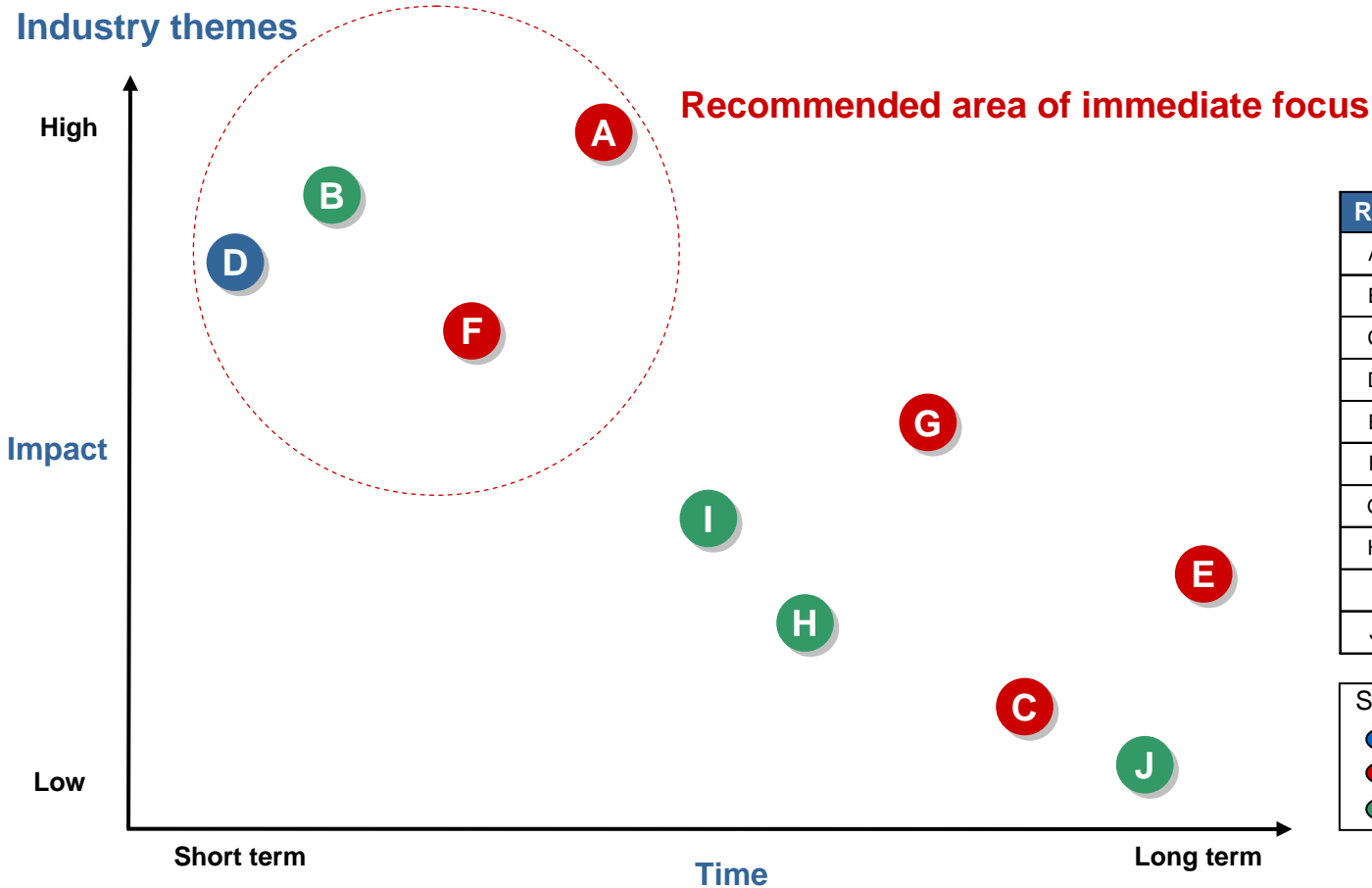
Source: Exchange/Clearing House interviews and websites

Industry recommendations

Industry recommendations

All industry players must participate in solving the issues. Some players, including industry bodies, may be better positioned to sponsor or lead the solution process

INDICATIVE



Ref	Industry theme
A	Technology and interfaces
B	Market operations and surveillance
C	Quote and order book management
D	Give-ups
E	Risk management
F	Margin and collateral management
G	Fee structures
H	Exercise and assignment policy
I	Corporate actions
J	Product innovation

Solutions sponsor:

- Market participant
- Market infrastructure player
- Both - industry

Industry recommendations

It is time for the industry to take action and start tackling the cost and process efficiency issues

- The industry has grown significantly - volumes, new products, new services, new entrants (market participants and market infrastructure players), etc
- It is not surprising that the identified issues exist today- many are due to a divergence of standards
- These issues affect the entire industry – no player is immune and collaboration is vital
- Suggested high-level next steps include:
 - Confirm issues as defined
 - Agree priorities ("most bang for the buck")
 - Establish solution working groups and sponsor
 - Plan and execute

All industry themes

All industry themes

Technology and interfaces

Market participants' view

- Deploy open APIs that both ISVs and market participants can develop against
- Introduce a standardised protocol, such as FIX, for APIs
- Improve co-ordination of upgrades between market infrastructure players and ISVs
- Develop consistent approach to addressing system downtimes (e.g. "busting of trades") and off-market trades and prices
- Ensure that network bandwidth is continuously managed to better control the flow of relevant output

Market infrastructure players' response

- Most recognise that open APIs are required for growth
- FIX, FpML and other protocols are being put forward as possible solutions; however, these need to be balanced against functional and technical requirements
- Balance between competitive advantage and transparency for co-ordinating system upgrades needs to be recognised, with upgrades normally market and business case driven
- A common system used by all market infrastructure players would eliminate many of the issues, but this is likely to be impractical to achieve
- Common guidelines on system releases need to be recognised, with upgrades normally market and business case driven
- Industry should promote standard BCP procedures
- Various standards across the market on "busting trades" after system downtime are often driven by regulators and product complexity
- Increased demand for bandwidth and core system processing is an evolution of the marketplace

All industry themes

Technology and interfaces

Market infrastructure player	TRADING			CLEARING		
	API Name	FIX * or Proprietary	Open/Closed	API Name	FIX * or Proprietary	Open/Closed
CBOT	ebot/LIFFE CONNECT API	Proprietary	Open			
CME	CME iLink 2.0	FIX	Open	Positions services API	FIXML	Open
EUREX	VALUES API	Proprietary ¹	Open	VALUES API	Proprietary ¹	Open
Euronext.liffe	CONNECT® API Version 8.0	Proprietary	Open			
HKFE	OMex API	Proprietary	Open	OMex API	Proprietary	Open
IPE	ICE API	Proprietary	Open			
LCH.Clearnet	No single API used	Proprietary	Open	No single API used	Proprietary	Open
LME	Trade Capture API	Proprietary	Closed ²			
NYMEX	NEON API	FIX	Open	ClearPort API	FIXML	Open
OCC				ENCORE API	Proprietary	Open
SGX	OMnet API (CLICK)	Proprietary	Open	OMnet API (CLICK)	Proprietary	Open
SFE	CLICK XT™ API	FIX	Open	OMnet API	Proprietary	Open
TIFFE	LIFFE CONNECT API	Proprietary	Open			
TSE	CORES-FOP	Proprietary	Closed			

Notes:

* FIX = Financial Information eXchange

1. Plus FIX transaction gateway

2. Limited API

25 Exchange Listed Derivatives – “Improving marketplace efficiency” - 28th June 2005 - Capco confidential

Source: Exchange/Clearing House interviews and websites

All industry themes

Market operations and surveillance

Market participants' view

- Establish uniform approval across regions for membership requirements, facilitating “passporting” of memberships
- Reduce cost and complexity by harmonising local membership requirements and individual investor registrations:
 - floor/local and emerging markets driven
 - rules have changed with the times – membership requirements to reflect a global electronic market
- Standardise crossing and block trading:
 - different reporting times and size restrictions
 - appreciation that there will always be need for business to execute off-exchange

Market infrastructure players' response

- Regulators dictate most of the requirements and practices implemented by the market infrastructure players make standardisation and “passporting” difficult
- Both market infrastructure players and market participants need to rally the regulators for the benefit of a global open industry
- Irrespective of regulations, market participants must provide appropriate internal controls and structures
- Market infrastructure players want a “go to” person for issues resolution, etc – legal standing may vary from one location to the next
- Attitude and approach to crossing and block trading born out of historic regulatory and market practice – ideally no-one should be disadvantaged in an open market

All industry themes

Market operations and surveillance

Market infrastructure player	TRADING			CLEARING			Crossing	Block trading
	Membership (individual/firm)*	Presence (Local vs Remote)	Formal exams (Yes/No)	Membership (individual/firm)*	Presence (Local vs Remote)	Formal exams (Yes/No)		
CBOT	I	Remote	Yes				✓	✗
CME	F	Remote	No	F	Remote	No	✓	✓
EUREX	F	Remote	Yes	F	Remote	Yes	✓	✓
Euronext.liffe	I	Remote	No				✓	✓
HKFE	F	Local	Yes	F	Local	Yes	✗	✓
IPE	I	Remote	Yes ¹				✓	✓
LCH.Clearnet				F	Remote	No		
LME	F	Local	Yes				✓	✓
NYMEX	I	Remote	Yes	I	Remote	No	✓	✗
OCC				F	Remote	No ²		
SGX	F	Remote	Yes	F	Local	Yes	✗	✓
SFE	F	Local	No	F	Local	No	✓	✓
TIFFE	I	Local	Yes				✓	✓
TSE	F	Local	Yes				✓	✓

Notes:

Source: Exchange/Clearing House interviews and websites

* I = "Responsible individual" named and F = Membership held only at firm level

1. Revised floor trader's exam for individual participants

2. Some individuals require NASD certification

All industry themes

Quote and order book management

Market participants' view

- Standardise base set of order/quote types vs “value-added” order/quote types and strategies (e.g. stop orders)
- Introduce simple but flexible strategies (e.g. spreads) across all exchanges
- Balance depth of functionality vs performance vs uptime vs flexibility
- Note: Market participants' views are divided when discussing complexity, functionality and whether it should be hosted by the exchange

Market infrastructure players response

- Those exchanges who have implemented a third party solution tend to have more standardised processing and are somewhat tied to vendors' strategy. Ultimately, need to respond to market requirements
- Introduction of certain order and quote types not necessarily a straight forward exercise (e.g. stop orders come in different flavours – on stop, stop loss,.....)
- Standardisation is fine, but it must be relevant and compatible with products that require specific trading models
- Many ISVs have already built the desired complex functionality and continue to enhance it
- Most market participants request that exchanges leave complexity to them as part of their differentiating service offering to end investors
- Complexity offered in core system will ultimately be part of a wider business plan and possible competitive advantage over other exchanges

All industry themes

Give-ups

Market participants' view

- Standardise procedures and processing to improve operational efficiency, for example:
 - allocation of give-ups at order entry vs post execution
 - manual vs automated take-up – leads to potential non-desired clearing relationship
- Standardise fees for processing
- Establish common system for billing and collection of give-up fees (e.g. GAINS)
- Maximise broker participation and use of common feed systems

Market infrastructure players' response

- Vertical vs horizontal exchange/clearing house integration affects processing and timing
- Systems and interfaces also impact how give-ups are processed (e.g. built into third party solutions), but some market infrastructure players do not have a system at all
- The drive for a standardised brokerage fee process and system, and overall industry take-up is in the hands of the market participants
- An independent and separate entity may be required to structure and govern give-up processing

All industry themes

Give-ups

Market infrastructure player	Give-up charge
CBOT	\$0.05 ¹
CME	\$0.05 ²
EUREX	No charge
Euronext.liffe	No charge ³
HKFE	No charge
IPE	No charge
LCH.Clearnet	No charge

Market infrastructure player	Give-up charge
LME	No charge
NYMEX	No charge ⁴
OCC	No charge
SGX	No charge
SFE	No charge
TIFFE	No charge
TSE	Not applicable ⁵

Notes:

1. Per contract charge to executing and claiming firm
2. Charge to executing firm (tiered volume discounts available for large users)
3. If done on same day as trade in TRS system
4. No give-up mechanism. Floor brokers charge "ATOM" for execute and allocation of trades
5. No give-up facility

Source: Exchange/Clearing House interviews and websites

All industry themes

Risk management

Market participants' view

- Standardise risk models on either SPAN or TIMS
- Adopt existing standard models especially in new or emerging markets
- Adopt recognised VaR models to reduce costs to modify market participant systems

Market infrastructure players' response

- Some interest in creating stronger links between clearing and trading, particularly for real time credit limits
- Established clearing houses tend to have adopted SPAN or TIMS
- Pushing all products through same version of risk management, however, can be difficult (complex risk matrix) and/or not yield the most efficient results
- Performing cross-product margining raises a number of questions regarding whether it can be done legally and/or contractually, thereby questioning the worth of trying to do so

All industry themes

Margin and collateral management

Market participants' view

- Standardise margining methods (gross vs net margining), and aim to net margin across exchanges using same clearing house
- Remove need for upfront margining – emerging markets (i.e. sending margin on T-1)
- Improve transparency to validate margin information for market participants and end investors
- Establish common set of collateral that can be accepted by clearing houses globally
- Rationalise collateral deposit fees as well as utilisation fees and haircuts, especially relating to cash deposits and interest rates applied
- Simplify and standardise collateral registration process (e.g. held market participant account vs transfer to clearing house account)
- Encourage collaboration between member firms and clearing houses in order to improve consistency of rules and documents

Market infrastructure players' response

- The trend is for clearing houses to move to net margining, particularly for market participants' "house accounts"
- Few charge a custody fee on collateral deposits to cover costs
- Difficult to standardise on collateral range accepted due to regulatory and custodial issue; however, range should be broadened
- Clearing houses are faced with the issue of proving title/access to pledge collateral outside their environment – results in an increased cost for infrastructure to manage and process the collateral

All industry themes

Margin and collateral management

Acceptable forms of collateral at clearing houses

Clearing house	CASH					GOVT. BONDS				CORP BONDS	EQUITIES	OTHER
	G5*	CHF	SKANDI	AUD	OTHER	US	EUR	GBP	OTHER			
CME - Clearing Division	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EUREX Clearing AG	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
HKFE Clearing Corporation					✓	✓			✓			✓
LCH.Clearnet	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
NYMEX Clearing House					✓ ¹	✓						✓
Options Clearing Corporation	✓	✓			✓	✓			✓		✓	✓
SGX Derivatives Clearing	✓				✓	✓	✓		✓		✓	✓
SFE Clearing Corporation	✓ ²			✓	✓	✓			✓		✓	✓
TIFFE Clearing					✓ ³				✓	✓	✓	✓
JSCC					✓ ³	✓			✓	✓	✓	✓

Collateral range notes:

Simplified overview of detail in Appendix

* G5 currencies = EUR (France, Germany), JPY, GBP, USD

** SKANDI currencies = DKK, NOK, SKK

1. USD only

2. All G5 currencies except GBP

3. JPY only

Market infrastructure player	Clearing house	Fee for collateral deposit (bps)
CBOT, CME	CME - Clearing Division	0 ¹
CBOE	Options Clearing Corporation	0
EUREX	EUREX Clearing AG	1-2 ²
HKFE	HKFE Clearing Corporation	50 ³
Euronext.liffe, IPE, LME	LCH.Clearnet	10 ⁴
NYMEX	NYMEX Clearing House	0
SGX	SGX Derivatives Clearing	12.5 ⁵
SFE	SFE Clearing Corporation	25-50 ⁶
TIFFE	TIFFE Clearing	0
TSE	Japan Securities Clearing Corporation (JSCC)	0

Source: Exchange/Clearing House interviews and websites

Collateral deposit notes:

1. A fee of 5bps for collateral placed in the IEF3 & IEF4 programs
2. Cost of custody
3. Charges apply to utilised non-cash collateral; no fee for cash
4. Only for non-cash collateral
5. Cash (Cash rate - 12.5bps)
6. Fee is 25bps for house cash and collateral. 50bps for clients

Source: Exchange/Clearing House interviews and websites

All industry themes

Fee structures

Market participants' view

- Implement automated fee schedules, including fees shown on individual transactions
- Establish simplified fee rebate and transaction discount structures that are compatible with market participants' systems and procedures for passing benefits to the end investor
- Create consistent approach, including time period for performing audit of fees between market participants and exchanges/clearing houses
- Simplify fee categories – some market infrastructure players have too many classifications based on role

Market infrastructure players' response

- Fees and the administration of them are influenced by the market participants' overall business model
- Fee rebates are sometimes required for product launches and relaunches
- It is difficult to standardise when some of the incentives are short term
- Information needs to be shared across entire value chain to improve fee processing
- Most acknowledge that the fee structures (e.g. volume rebates) deployed are incompatible with market participants' systems and therefore acknowledge the need to collaborate to ensure efficiency. Some believe it is the responsibility of the market participant to resolve
- Many avoid issue by not providing fee rebates/discounts

All industry themes

Exercise and assignment

Market participants' view

- Introduce a global and harmonised rule book (required to standardise implementation of activities, such as auto exercise and physical delivery)
- Implement auto exercise when in-the-money globally
- Deliver key information (e.g. assignment notices) before the market opens, failing to do so impacts end investors
- Define timing of clearing cycles so that they fit within trading day period – extensions, such as over the weekend, introduce an additional risk to be managed

Market infrastructure players' response

- Auto exercise has shortened clearing cycles
- A harmonised global rule book is required, otherwise auto exercise when in-the-money can not be standardised. This includes agreement on intrinsic value levels which must outweigh fees for exercising
- For many market infrastructure players, physical delivery after assignment is not an issue given the fact that most products are cash settled

All industry themes

Corporate actions

Market participants' view

- Address the issue of when and how information is disseminated as an industry
- Standardise and automate corporate action feeds from market infrastructure players – reduce errors and “data scrubbing”
- Require teaming approach with cash market: regulators, exchanges, CSDs and market participants
- Seen as competitive advantage if market participant can provide correct information in a timely fashion to clients, but this should not be done at the risk of not maintaining control
- Agree approach to applying corporate actions (e.g. strike price adjusted after stock split)

Market infrastructure players' response

- Difficult to deliver timely information unless the market is integrated: cash and derivatives
- Not just a derivatives exchange or clearing house issue – issue for the cash market as well
- CSDs and local regulators need to set help standards

All industry themes

Product innovation

Market participants' view

- Provide greater lead time on product launches – work closely with market participants when rolling out new, complex contracts
- Desire evaluation process and feasibility study for product launches
- Co-ordinate – product launch schedules
- Require consultative approach – value added
- Co-ordinate relationship between market participants, vendors and market infrastructure players – all need to be aligned for a successful product or service launch

Market infrastructure players' response

- The market likes to provide lots of ideas, but commitment not guaranteed, require buy-in from all stakeholders
- Ensure there are market makers and take a strategic position in new products
- Alternative models – sponsorship models where market players underwrite new products
- Product must be value-added and respect downstream processes
- Improve benchmarks for standard product development protocols
- Compete by introducing new products rather than by replicating existing ones

Detailed collateral ranges

Detailed collateral ranges

Clearing House	Cash	Non-cash collateral
CME - Clearing Division	AUD CAD CHF EUR GBP JPY MXN NOK NZD SKK USD	S&P 500 Index Bubils, Schatze, Bobls and Bunds (Germany) Conventional and Index-Linked Gilts (United Kingdom) Bills and Bonds (Canada) BTF, BTAN, and OATS(France) U.S. Treasury Bills U.S. Treasury Bonds U.S. Treasury Notes U.S. Treasury Strips (Principal & Coupon) Callable and Non-callable Fannie Mae Benchmark Bills Callable and Non-callable Freddie Mac Reference Bills Callable and Non-callable Federal Home Loan Bank Bills Callable and Non-callable Federal Farm Credit Bank Bills Fannie Mae (FNMA) Mortgage Backed-securities Freddie Mac (FHLMC) Mortgage Backed-securities Ginnie Mae (GNMA) Mortgage Backed-securities US Government Agency securities Government Bonds E Bills of Canada Letters of credit Specialised collateral programs (IFE, IFE2, IFE3, IFE4, IFE5)

Source: Exchange/Clearing House interviews, websites and FOW TRADEdata

Detailed collateral ranges

Clearing House	Cash	Non-cash collateral
EUREX Clearing AG	AUD CAD CHF DKK EUR GBP JPY NOK SEK USD	DAX, EURO STOXX 50, and Other stocks ETF eb.rexx® German Government ETF Funds as announced by Eurex Clearing AG EUR/DEM Federal Government and State bonds, Government Bills (Bubills) EUR/DEM Local Government Bonds & Agencies EUR/DEM Corporates & Bank Bonds & Other Bonds Federal Government Bills (CHF) Canton Loan obligations, bonds with warrants (CHF) City and Municipality Loan obligations, Bonds with warrants (CHF) Banks Loan obligations, bonds with warrants, Convertible bonds, 'Kassascheine' (CHF) Mortgage bonds of the central Swiss Mortgage bond issuing authorities (Pfandbriefzentralen) (CHF) AUD Government Bonds and Exchange Listing CAD Government Bonds and Exchange Listing DKK Government Bonds and Exchange Listing GBP Government Bonds and Exchange Listing JPY Government Bonds and Exchange Listing NOK Government Bonds and Exchange Listing SEK Government Bonds and Exchange Listing USD Government Bonds and Exchange Listing Equities

Source: Exchange/Clearing House interviews, websites and FOW TRADEdata

Detailed collateral ranges

Clearing House	Cash	Non-cash collateral
HKFE Clearing Corporation	HKD JPY USD	HK Govt Exchange Fund notes (EFB or EFN) US Treasuries HKD Exchange Traded Fund Bills/Notes
LCH.Clearnet	AUD CHF DKK EUR GBP JPY NOK SKK USD	FT-SE 100 & stocks underlying equity options Australian Government Bond (ACGB) Austrian Treasury Bill (RATB) Austrian Government Bond (RAGB) Belgian Treasury Bill (BGTB) Belgian Government Bond (BGB) Canadian Treasury Bill (CTB) Canadian Government Bond (CAN) Danish Treasury Bill (DGTB) US Treasury Bill (B), Note/Bond Sterling CDs US Dollar CDs
NYMEX Clearing House	USD	US Treasury obligations (valued at 95%) Letters of credit (only used to satisfy a max. of 50% of the margin requirement) Selected Money Market Funds (valued at 95%)

Source: Exchange/Clearing House interviews, websites and FOW TRADEdata

Detailed collateral ranges

Clearing House	Cash	Non-cash collateral
Options Clearing Corporation	CHF EUR GBP JPY MXN USD	US and Canadian Government Securities US Exchange and Nasdaq listed stocks Letters of Credit from US and non-US banks denominated in USD Money Market Fund Shares
SGX derivatives Clearing	EUR JPY SGD USD	Singapore stocks (List of 37 acceptable stocks) Singapore Government Securities: - Up to 5 years maturity - More than 5 years maturity US Treasury Securities - Up to 5 years maturity - More than 5 years maturity Japanese Government Bonds - Up to 5 years maturity - More than 5 years maturity EURO Government Bonds - French (Treasury Bills, Treasury Notes, Treasury Bonds) - German (Treasury Bills, treasury Notes, Treasury Bonds) Irrevocable standby letters of credit - USD or JPY Bank CDs Letter of Credit or Bank Guarantees Gold Bars Gold Certificates issued by banks approved by MAS Securities listed on SEL, NSE, ASX or 1st section of TSE

Detailed collateral ranges

Clearing House	Cash	Non-cash collateral
SFE Clearing Corporation	AUD EUR HKD NZD USD	Australian Commonwealth Government Securities US Government Treasury Bills Stocks Top 20 on ASX (with overall limit) Stocks Top 20 on NZX (with overall limit)
TIFFE Clearing	JPY	Japanese Government. Bonds Government guaranteed bonds Equity stocks listed on Japanese stock exchanges Stocks registered with Dealers Assoc. Underwritten Japanese Municipal Bonds Foreign Bonds listed on exchange in Japan (Yen denominated) Yen Bonds issued by IBRD Yen Bonds issued by ADB Yen Bonds issued by foreign corps listed on exchange in Japan
Japan Securities Clearing Corporation	JPY	Japanese Government bonds Municipal Bonds Corporate Bonds US Bonds Stocks Funds