

Celebrating the Success of Nikkei 225 Futures

Global access to the Japan Equity Market



All examples in this report are hypothetical interpretations of situations and are used for explanation purposes only. The views in this report reflect solely those of the author and not necessarily those of CME Group or its affiliated institutions. This report and the information herein should not be considered investment advice or the results of actual market experience.

Internationalizing Japan's Equity Futures

This year marks the 30th anniversary of the Singapore International Monetary Exchange (SIMEX), now Singapore Exchange (SGX), pioneering the world's first futures contract based on the Japanese stock market using SGX Nikkei 225 Index futures. In a related milestone, Nikkei 225 futures debuted at CME Group 26 years ago this year. CME Group and SIMEX partnered in 1986 to launch futures based on the benchmark Nikkei 225 Index futures at SIMEX, Asia's first financial futures exchange.

Representing Asia's biggest advanced economy, the Nikkei 225 Index was also the first Asian equity index to be represented in the futures market. Led by then Chairman Leo Melamed, CME Group strengthened its strategic partnership with SIMEX by jointly pioneering the revolutionary Mutual Offset System – in 1984, it was one of the earliest and most successful exchange linkages in the history of the derivatives industry.

The Founding Father of the Futures Markets

Leo Melamed is regarded as the founding father of the futures market. His role in developing CME Group as a premier futures market and in setting up the International Monetary Market is legendary in financial markets. He also led in elevating SIMEX, which later merged with the Stock Exchange of Singapore and Securities Clearing and Computer Services Pte Ltd to form SGX.

"I knew that if MOS proved to work, we would have revolutionised the trading of futures by connecting two time zones and bringing business and respect to Singapore shores." – Leo Melamed, Chairman Emeritus, CME Group

About the Mutual Offset System (MOS)

Through a special arrangement between CME Group and SGX, traders of yen- and USD-based Nikkei futures contracts have the ability to take positions at one exchange and clear them at the other on the same trading day. As a result, traders can execute transactions in two exchanges and have the ability to clear those trades in their preferred time zone.

Endurance of the Mutual Offset System

More than three decades later, SIMEX's first and longest-standing partnership endures, and MOS is still widely used by global investors.

Under the MOS arrangement, Nikkei 225 Index futures were made available on CME Group's Globex trading platform in 1988, and CME Group itself listed the Nikkei futures contract in 1990.

The partnership between SGX and CME Group enabled round-the-clock trading and internationalized the Japanese equity futures market. Today, Nikkei 225 Index futures are actively traded all over the globe.

Over the last decade, turnover of Nikkei 225 Index futures listed at CME Group and SGX has grown more than 4 times compared to the previous decade, and the contract has made the successful transition from floor to electronic trading.

Figure 1: SIMEX Trading Floor



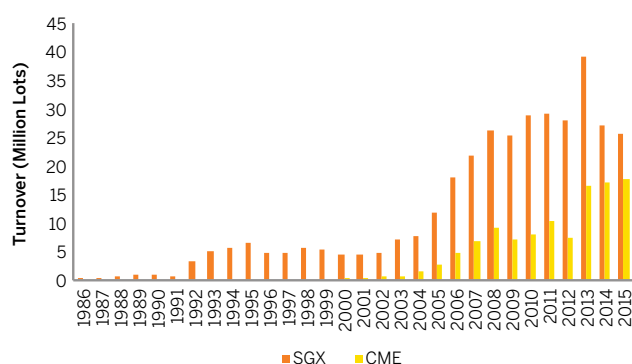
Source: SGX

About the Nikkei 225 Index

Since 1950, the Nikkei Stock Average, commonly referred to as the Nikkei 225 Index, is the most widely quoted index of Japanese equities. Many financial products are linked to the Nikkei 225 Index. The Nikkei 225 is a price-weighted equity index (denominated in yen), which consists of 225 stocks in the First Section (for large companies) of the Tokyo Stock Exchange, and the components are reviewed once a year.

The Nikkei 225 Index has a market value of approximately US\$3 trillion, accounting for more than 12% of Asia's combined stock markets, and more than 4% of the world's stock markets.

Figure 2: Turnover of Nikkei Futures on SGX & CME



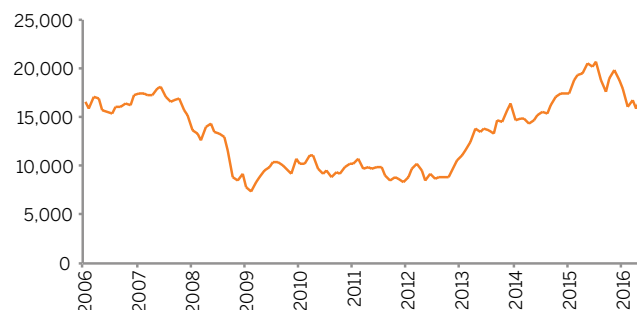
Source: Bloomberg, 1 August 2016

Components of the Nikkei 225 Index

The five largest constituent weights of the Nikkei 225 Index are currently made up of a retailer, two telecommunications companies and two manufacturers. Unlike the S&P 500® or Singapore's Straits Times Index (STI), financial stocks do not represent the largest sector of the index. Four-fifths of Nikkei 225 stocks represent four sectors - consumer, industrial, information technology, and healthcare. Apart from domestic economic factors, the performance of the Nikkei 225 Index, like much of Asia in 2016, has been driven by global growth outlooks.

Stocks are weighted on the Nikkei 225 Index by giving an equal weighting based on a par value of 50 yen per share. Events such as stock splits, and removals and additions of constituents impact the effective weighting and calculation of the index. The Nikkei 225 Index is designed to reflect the overall market, so there is no specific weighting of industries.

Figure 3: Nikkei 225 Index Performance



Source: Bloomberg, 1 August 2016

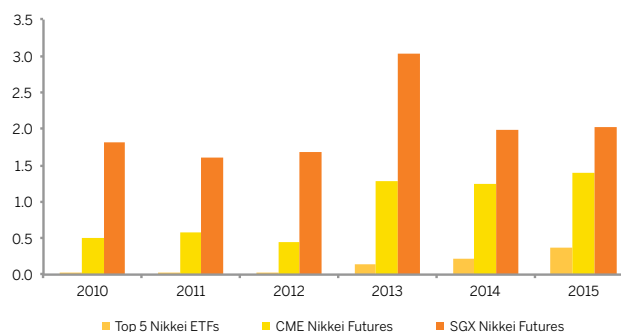
Nikkei 225 Futures versus Exchange Traded Funds (ETFs) Tracking Nikkei 225

Offshore Nikkei futures continue to provide investors with high liquidity and ease of access. The total daily turnover of SGX and CME Group's Nikkei 225 futures was US\$23 billion in 2015, which dwarfs the US\$2.6 billion turnover of the top 5 ETFs tracking the Nikkei 225 Index. The top ETFs tracking the Index listed in Japan are the Nomura Nikkei 225 Index, Nikko Nikkei 225 Index, Daiwa Nikkei 225 Index, Next Funds Nikkei 225 Index Leverage, and the Maxis Nikkei 225 Index.

Futures are the instrument of choice for investors seeking access to the Japanese equity market for risk management, as sizable positions can be entered or exited easily with the deep liquidity offered on offshore markets, as indicated by Figure 4. Leverage can also be deployed effectively through futures.

Professional traders depend on the liquidity, cross margining, and the MOS between CME Group and SGX to effectively manage risk and express views. Indeed, the liquidity generated by this linkage fueled the growth of Nikkei futures in the over the past decades.

Figure 4: Turnover of Nikkei Futures and ETFs (US\$ Trillion)



Source: Bloomberg, 1 August 2016

Expanding the Nikkei Derivatives Ecosystem

Though Nikkei 225 futures and options were originally traded via open outcry in trading pits, the contracts have since evolved in line with changing customer needs. Today, SGX and CME Group customers have a choice of currencies and trading venues for this suite of products.

Yen-denominated and USD-denominated Nikkei 225 futures are available at SGX and CME Group, offering convenience for investors with portfolios comprised of yen-based or dollar-based investments.

Open interest in the CME Group's USD-denominated Nikkei 225 futures has grown among asset managers. The net position of asset managers has been at or above 40% in the past few years.

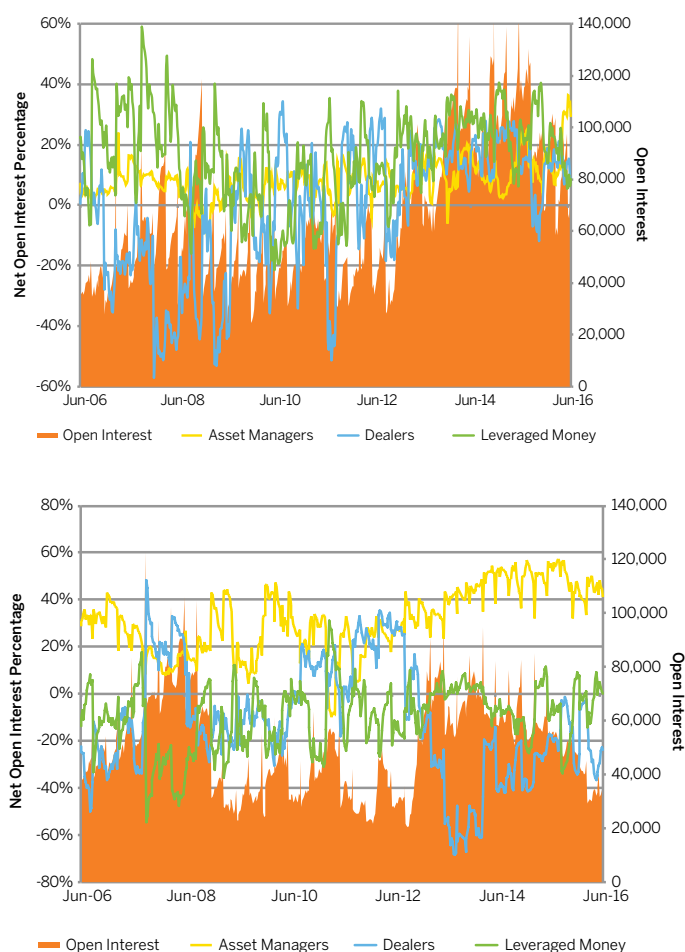
Both SGX and CME Group have listed complementary products, including options on the Nikkei 225 Index, and SGX also has Asia's first dividend futures to provide the widest suite of offshore Japan products.

SGX and CME Group Immersed in the Ecosystem

Nikkei futures traded at CME Group and SGX are integral parts of the ecosystem that supports access to the Japanese equity market, with each exchange leveraging on its inherent strengths.

For example, for Nikkei 225 Index options, outstanding positions on SGX have grown as investors' hedging requirements increased with higher market volatility. Open interest in the contract topped 1 million lots at SGX at the end of July 2016.

Figure 5: Commitment of Traders and Open Interest on CME Group's Nikkei USD and Nikkei JPY Futures



Source: CME Group Market Data

The charts in Figure 5 show the access to two currency denominations of an index future at the same venue, as in CME Group's Nikkei futures. Demand for USD-denominated currencies is typically from the asset manager community. This is met by leveraged money accounts, which go short while going long on the yen position. This is referred to as a "quanto" spread trade, and is unique in Nikkei futures. It requires both currency-denominated contracts to be available and liquid at the same venue, to enable the cross-margining to be economically viable.

In both illustrations, the usage of futures and options contracts to gain exposure to the Nikkei 225 Index is evidenced by the increase in their respective open interest.

Reminiscing the SGX-CME Group Partnership

Figure 6: Ng Kok Song (Founding Chairman of SIMEX) and Leo Melamed



In closing, we share the thoughts of Leo Melamed from an interview he gave regarding the early days of the SGX-CME Group partnership during the 1980s.

Interview with Business Times Singapore on February 10, 2015

“Although Singapore had little futures market experience, the community of traders all spoke with one voice.

More than that, Singapore’s officials, both in the public and private sector, were eager to make the deal. Thus, Singapore became my choice.

“... Did I foresee that the Simex would someday become part of SGX and a center for Asian equity derivatives? Of course not. But in a very real sense I understood that the success of our agreement would be fundamental to Singapore’s future growth as a center of finance in South-east Asia.” – Leo Melamed, Chairman Emeritus, CME Group

APPENDIX

SGX Extends Nikkei Derivatives Trading Hours With Next-Generation Derivatives Platforms

From the end of October 2016, SGX will implement its upgrade of its derivatives trading and clearing platforms. As a result, SGX Nikkei 225 Index Futures and Options trading hours will be extended to 4.45pm Eastern Time. Block trade registration will also be extended to 4.45pm Eastern Time. This enhancement will reduce the session gap from 45 minutes to 15 minutes between the T and T+1 trading sessions

Figure 7: New Trading Hours for SGX Nikkei 225 Index Futures*

Session State	Eastern Time	Remarks
Pre-Open (T)	7:15 p.m. – 7:28 p.m.	Non-matching phase. Order entry, modification and cancellation allowed.
Non-Cancel (T)	7:28 p.m. – 7:30 p.m.	Non-matching phase. Order entry allowed but no modification or cancellation
Opening (T)	7:30 p.m. – 2:25 a.m.	Matching phase
Pre-Close (T)	2:25 a.m. – 2:29 am	Non-matching phase. Order entry, modification and cancellation allowed.
Non-Cancel (T)	2:29 a.m. – 2:30 am	Non-matching phase. Order entry allowed but no modification or cancellation
15 minute gap		
Pre-Open (T+1)	2:45 a.m. – 2:53 a.m.	
Non-Cancel (T+1)	2:53 a.m. – 2:55 a.m.	
Opening (T+1)	2:55 a.m. – 4:45 p.m.	All T+1 sessions will end at 4:45 a.m.

*New trading hours will be confirmed ahead of launch

Other significant benefits from the upgraded infrastructure include industry standard access protocols, extensive self-help functionality and improved straight-through-processing. The new systems will strengthen risk controls and system safeguards to help market participants manage their trading and clearing positions on a 24-hour basis.

Figure 8: Benefits from New SGX Derivatives Platforms

Industry Standard Access Protocols	Self-Trade Prevention	Mass Quote Protection
<ul style="list-style-type: none"> The new SGX trading platform will support the OUCH low-latency binary socket protocol for order entry, providing the fastest, asynchronous interaction with the order book. Direct Multicast ITCH data feed in market-by-order format for immediate market signals and instant order book updates. 	<ul style="list-style-type: none"> Avoid unintentional internal trading by preventing certain participant's orders from executing against each other. Participants benefit from reduced programing complexity in their trading strategies to avoid self-trading. 	<ul style="list-style-type: none"> Allows Market Makers to manage exposure risk more effectively and gives Market Makers more confidence to quote with greater quantity or better spread or both.

To read more economic research reports like this one or subscribe to the mailing list, visit cmegroup.com/research.



CME GROUP HEADQUARTERS

20 South Wacker Drive
Chicago, Illinois 60606
cme group.com

CME GROUP GLOBAL OFFICES

New York	London	Singapore
Bangalore	Beijing	Belfast
Boston	Calgary	Hong Kong
Houston	São Paulo	Seoul
Tokyo	Washington D.C.	

CME Group Disclaimers

Futures and swaps trading is not suitable for all investors, and involves the risk of loss. Futures and swaps are leveraged investments, and because only a percentage of a contract's value is required to trade, it is possible to lose more than the amount of money initially deposited for a futures and a swap position. Therefore, traders should only use funds that they can afford to lose without affecting their lifestyles and only a portion of those funds should be devoted to any one trade because they cannot expect to profit on every trade.

The information and any materials contained in this brochure should not be considered as an offer, invitation or solicitation to buy or sell financial instruments, provide financial advice, create a trading platform, facilitate or take deposits, or provide any other financial products or financial services of any kind in any jurisdiction. The information contained in this brochure is provided for information purposes only and is not intended to provide, and should not be construed as, advice. It does not take into account your objectives, financial situation or needs. You should obtain appropriate professional advice before acting on or relying on the information set out in this brochure. This brochure does not constitute a prospectus, product disclosure statement or legal advice, nor is it a recommendation to buy, sell or retain any specific investment or to utilise or refrain from utilising any particular service. Readers should consult their legal advisors for legal advice in connection with the matters covered in this document. This brochure and its contents have not been reviewed or approved by any regulatory authority in Singapore. The information contained in this brochure is provided as is and without any warranty of any kind, either express or implied. CME Group assumes no responsibility for any errors or omissions.

"CME Group" and "芝商所" are trademarks of CME Group Inc. The Globe logo, E-mini, E-micro, Globex, CME and Chicago Mercantile Exchange are trademarks of Chicago Mercantile Exchange Inc. ("CME"). CBOT and Chicago Board of Trade are trademarks of the Board of Trade of the City of Chicago, Inc. ("CBOT"). ClearPort and NYMEX are trademarks of the New York Mercantile Exchange, Inc. ("NYMEX"). COMEX is a trademark of Commodity Exchange Inc. All other trademarks are the property of their respective owners. "CME Europe" and "CME Clearing Europe" are brands of CME Group Inc. and its subsidiaries, members of which include Chicago Mercantile Exchange Inc., CME Europe Limited, CME Clearing Europe Limited and CME Marketing Europe Limited. These may not be modified, reproduced, stored in a retrievable system, transmitted, copied, distributed or otherwise used without the written permission of the party owning these materials.

CME, CBOT and NYMEX are each registered as a Recognized Market Operator in Singapore and authorized as Automated Trading Service providers in Hong Kong S.A.R.. CME is also regulated as a Recognised Clearing House in Singapore. Chicago Mercantile Exchange Inc. is a Recognised Overseas Clearing House (ROCH) recognised by the Bank of England. Chicago Mercantile Exchange Inc., Board of Trade of the City of Chicago and the New York Mercantile Exchange are Recognised Overseas Investment Exchanges (ROIE's) recognised by the Financial Conduct Authority. CME Europe Limited is a Recognised Investment Exchange (RIE) recognised and supervised by the Financial Conduct Authority in the United Kingdom. Globex Markets Limited is authorised and regulated by the Financial Conduct Authority. CME Marketing Europe Limited (FRN: 220523) is authorised and regulated by the Financial Conduct Authority in the United Kingdom.

Further the information contained herein does not constitute the provision of direct access with any foreign financial instrument market or clearing services for foreign financial instrument market transactions defined under Japan's Financial Instrument & Exchange Act (Law No. 25 of 1948, as amended). CME Europe Limited is not registered or licensed to provide, nor does it purport to provide financial services of any kind in any jurisdiction in Asia including Hong Kong, Singapore or Japan.

None of CME Group entities are registered or licensed to provide, nor does it purport to provide, financial services of any kind in People's Republic of China or Taiwan. None of the CME Group entities are licensed to carry on business in dealing or advising on futures contracts under the Securities and Futures Ordinance in Hong Kong. This brochure and any information contained or incorporated by reference herein is not an advertisement and is not intended for public distribution within People's Republic of China. This brochure is for distribution in Singapore solely to persons holding a capital markets services licence for trading in futures contracts or exempt from such requirements, and for distribution in Korea and Australia (ARBN Number: 103 432 391) solely to "professional investors", as defined in Article 9(5) of the Financial Investment Services and Capital Markets Act and related rules and in the Corporations Act 2001 (Cth) and related rules respectively, and circulation should be restricted accordingly. In the United Kingdom, this communication is for the exclusive use of Eligible Counterparties and Professional Clients only and must not be relied upon by Private Clients who should take independent financial advice. Circulation should be restricted accordingly.

All matters pertaining to rules and specifications herein are made subject to and are superseded by official CME, CBOT, NYMEX, CME Europe, CME Clearing Europe and CME Group rules. Current rules should be consulted in all cases concerning contract specifications.

Copyright © 2016 CME Group and 芝商所. All rights reserved.

Singapore Exchange Disclaimers

This document is not intended for distribution to, or for use by or to be acted on by any person or entity located in any jurisdiction where such distribution, use or action would be contrary to applicable laws or regulations or would subject SGX to any registration or licensing requirement. This document is not an offer or solicitation to buy or sell, nor financial advice or recommendation for any investment product. This document has been published for general circulation only. It does not address the specific investment objectives, financial situation or particular needs of any person. Advice should be sought from a financial adviser regarding the suitability of any investment product before investing or adopting any investment strategies. Investment products are subject to significant investment risks, including the possible loss of the principal amount invested. Past performance of investment products is not indicative of their future performance. While SGX and its affiliates have taken reasonable care to ensure the accuracy and completeness of the information provided, they will not be liable for any loss or damage of any kind (whether direct, indirect or consequential losses or other economic loss of any kind) suffered due to any omission, error, inaccuracy, incompleteness, or otherwise, any reliance on such information. Neither SGX nor any of its affiliates shall be liable for the content of information provided by third parties. SGX and its affiliates may deal in investment products in the usual course of their business, and may be on the opposite side of any trades. SGX is an exempt financial adviser under the Financial Advisers Act (Cap. 110) of Singapore. The information in this document is subject to change without notice.

"Nikkei" in the following context refers to Nikkei Keizai Shimbun, Inc; and "Nikkei Digital" refers to Nikkei Digital Media, Inc, part of the Nikkei group of companies. Nikkei shall own copyrights, intellectual property rights or any other rights with respect to the term "Nikkei Average" and the contents thereof; Either Nikkei Digital or Nikkei shall in no way warrant or recommend SGX products; Nikkei shall have the right to change, or have Nikkei Digital to change, the contents of "Nikkei Average", and to discontinue, or have Nikkei Digital discontinue, announcing "Nikkei Average"; and either Nikkei Digital or Nikkei shall not have any obligation or liability to publish continuously "Nikkei Average" and Nikkei Digital calculates "Nikkei Average" on the assumption that either Nikkei Digital or Nikkei shall not be liable for any error, delay or suspension with respect to the publication of "Nikkei Average".