

Eurex – Asian Trading Hours Extension

April 2020



Summary

Key Facts

- Eurex extended its trading and clearing hours on 10 Dec 2018 to also cover the Asian time zone
- Products in scope are Eurex’s select benchmark futures and MSCI futures, options are out of scope
- Market opening is at 8am SGT; end of the trading & clearing day remains unchanged
- TES entry service (Block-, EFP-, EFS trades) is available from 08:15am SGT
- Please Note: Open GTC / GTD orders in THX relevant Futures can be executed in Asian Hours
- The Trading day starts with a Pre-Trading phase, followed by Pre-Opening & Opening Auction and Continuous Trading

Eurex extended hours – trading phases



* Singapore time during Central European Summer Time. Time difference: SGT/CET: +7h; SGT/CEST: +6h

** To optimize overnight processing, as of 25 Feb 2019, the post-trading phase is reduced from 30mins to 10mins (22:00 CET to 22:10 CET). The clearing services are not impacted and will continue to be available until 22:30 CET.



Eurex Trading Hours Extension – Trading Activity (1/2)

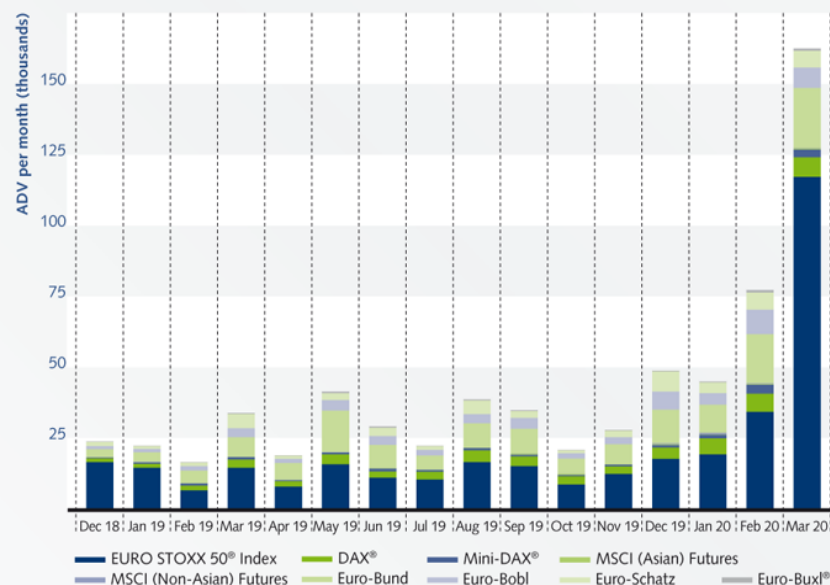
Eurex Trading Hours Extension offers attractive spreads and liquidity in European Benchmark products during Asian Hours. Futures on EURO STOXX and Euro-Bund trading at 1 tick spreads.

Eurex offers attractive spreads during Asian Hours:

Product	Asian Hours	Core Hours
EURO STOXX 50®	1 tick	1 tick
DAX®	3 ticks	2 ticks
Mini-DAX®	2 ticks	3 ticks
Euro-Bund	1 tick	1 tick
Euro-Bobl	1 tick	1 tick
Euro-Schatz	1 tick	1 tick
Euro-Buxl®	4 ticks	2 ticks

Product	1Q2020 Asian Hours Volume	1Q2020 Asian Hours ADV	Notional Volume in USD Millions	% Off-book	% Agency	% Asian hours	1Q2019 Asian Hours Volume	1Q2019 Asian Hours ADV	%YoY ADV Growth
EURO STOXX 50® Index	3,682,740	57,543	129,061	0.2%	34.6%	2.8%	748,832	11,886	431%
DAX®	403,199	6,300	134,409	0.0%	3.8%	4.6%	124,516	1,976	291%
Mini-DAX®	151,413	2,366	10,097	0.0%	0.8%	2.4%	42,377	673	302%
MSCI (Asian) Futures	18,557	290	761	59.6%	68.8%	1.5%	5,892	94	191%
MSCI EM Asia	4,116	64	212	5.0%	0.0%	0.5%	210	3	3671%
MSCI Japan	585	9	32	81.2%	0.0%	0.4%	1,433	22.7	-96%
MSCI China Free	4,312	67	186	57.6%	0.1%	8.2%	1,322	21	540%
MSCI Australia	5,396	84	174	98.5%	0.1%	12.8%	1,754	28	0%
Others	4,148	65	156	62.4%	67.6%	3.8%	1,173	19	171%
MSCI (Non-Asian) Futures	20,821	325	1,295	53.8%	41.9%	0.5%	4,847	77	1355%
Euro-Bund	1,030,694	16,105	201,221	0.0%	10.8%	1.9%	309,452	4,912	287%
Euro-Bobl	421,921	6,593	63,843	0.0%	2.8%	1.3%	123,898	1,967	455%
Euro-Schatz	333,254	5,207	41,885	0.0%	3.8%	1.3%	153,440	2,436	383%
Euro-Buxl®	47,312	739	11,284	0.0%	0.4%	0.9%	12,444	198	485%
Grand Total	6,109,911	95,467	593,856	0.5%	34.7%	2.2%	1,525,698	24,217	370%

Monthly ADV by product (December 2018 to March 2020) – Eurex Asian Hours
01:15 AM CET to 07:59 AM CET
08:15 AM SGT to 02:59 PM SGT

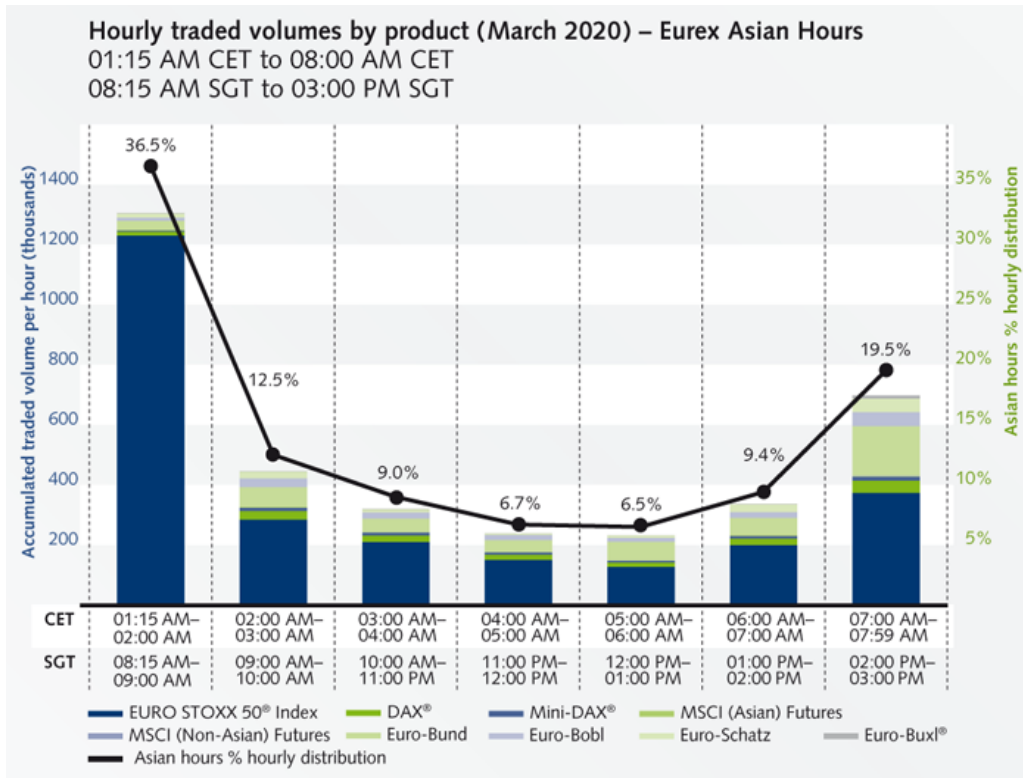


Data from:
10th December 2018 – 31st March 2020



Eurex Trading Hours Extension – Trading Activity (2/2)

Accumulated Hourly Traded Volumes show a healthy distribution of activity during the Asian time zone.



Over 230 direct members have contributed to the liquidity during Asian hours with 35% flow from end clients (Agency-Account) in 2020

Total volume during Asian trading hours (single counted):	13,855,428 contracts since launch
Trading participation - Account Roles 2020 YTM:	38.7% on M-accounts (Market Making Account) 34.7% on A-accounts (Agency) 26.6% on P-accounts (Principal)
Total number of active Eurex Members 2020:	231 (accumulated)

Monthly Data from:
 1st March 2020 till 31st March 2020

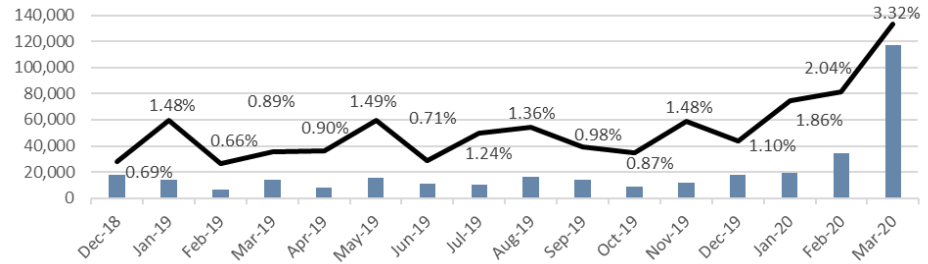


Eurex Trading Hours Extension – ADV Development (1/2)

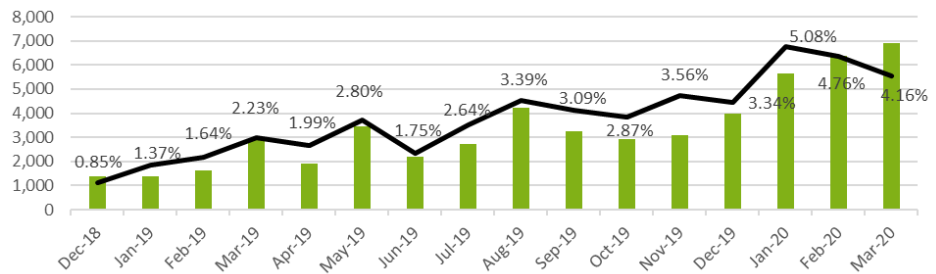
Average Daily Volume (ADV) development shows opportunities during the Asian time zone.

Our Equity Index Futures (EURO STOXX 50®, DAX® and Mini-DAX®) have shown good improvement in monthly ADV during Trading Hours Extension over the months since launch

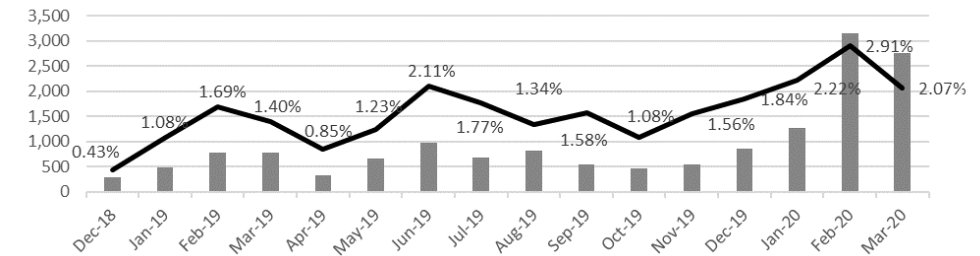
Average Daily Volume (2020 YTM):	57,543 contracts on EURO STOXX 50® Index Futures
	6,300 contracts on DAX® Index Futures
	2,366 contracts on Mini-DAX® Index Futures



EURO STOXX 50® Index Futures



DAX® Index Futures



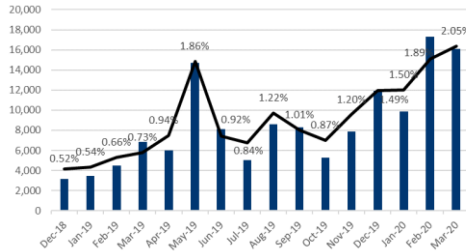
Mini-DAX® Index Futures

All data from:
10th December 2018 – 31st March 2020

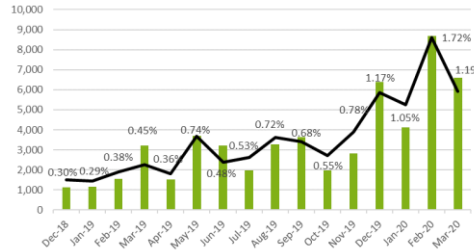


Eurex Trading Hours Extension – ADV Development (2/2)

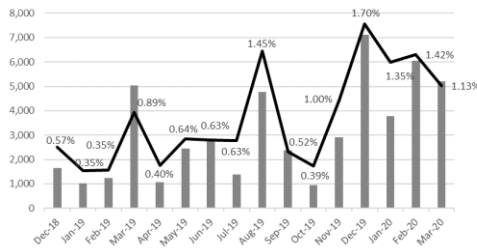
Average Daily Volume (ADV) development shows opportunities during the Asian time zone.



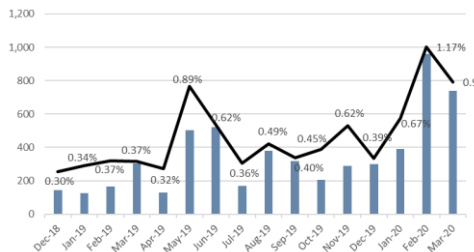
Euro-Bund Futures



Euro-Bobl Futures



Euro-Schatz Futures



Euro-Buxl® Futures

Our Interest Rate Futures (Euro-Bund, Euro-Bobl, Euro-Schatz, Euro-Buxl®) have shown good improvement in monthly ADV during Trading Hours Extension over the months since launch

Average Daily Volume (2020 YTM):

16,105 contracts on Euro-Bund Futures

6,593 contracts on Euro-Bobl Futures

5,207 contracts on Euro-Schatz Futures

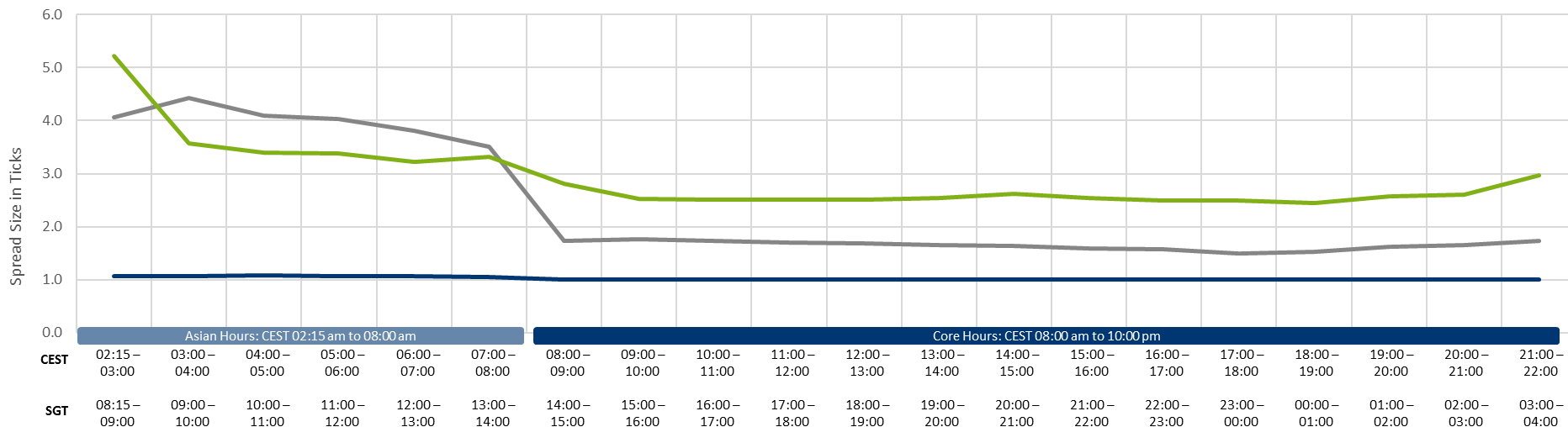
739 contracts on Euro-Buxl® Futures

All data from:
10th December 2018 – 31st March 2020



Eurex Trading Hours Extension – Orderbook Quality (1/2)

Equity & Index Average Hourly Spread



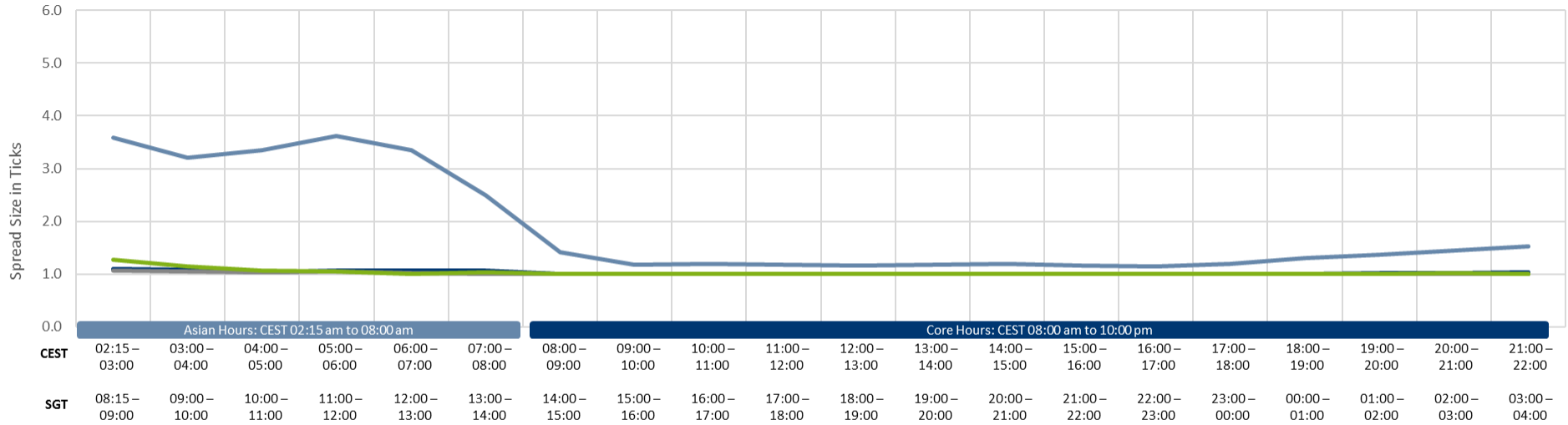
Products – Average Spread (in ticks) during	Asian Hours	Core Hours
EURO STOXX 50® Index Futures (FESX)	1	1
DAX® Futures (FDAX)	4	2
Mini-DAX® Futures (FDXM)	3	3

*Data as of 30th June 2019



Eurex Trading Hours Extension – Orderbook Quality (2/2)

Fixed Income Average Hourly Spread



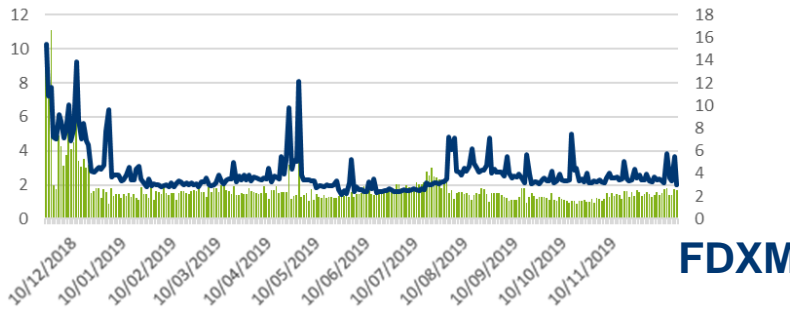
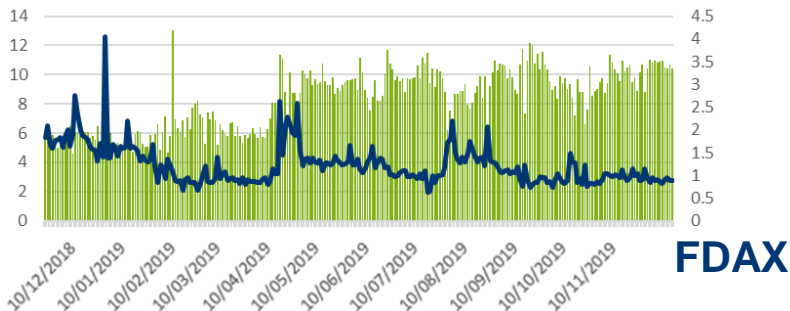
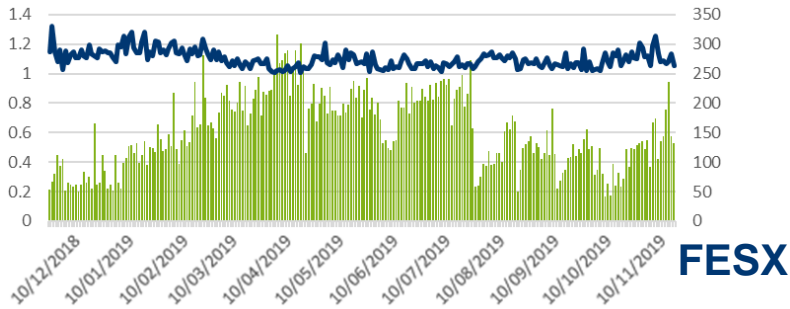
Products – Average Spread (in ticks) during	Asian Hours	Core Hours
■ Euro-Bund Futures (FGBL)	1	1
■ Euro-Bobl Futures (FGBM)	1	1
■ Euro-Schatz Futures (FGBS)	1	1
■ Euro-Buxl Futures (FGBX)	3	2

*Data as of 30th June 2019



Orderbook Liquidity Development Analysis

Average Daily Spread and Best Price Depth of FESX, FDAX, FDXM

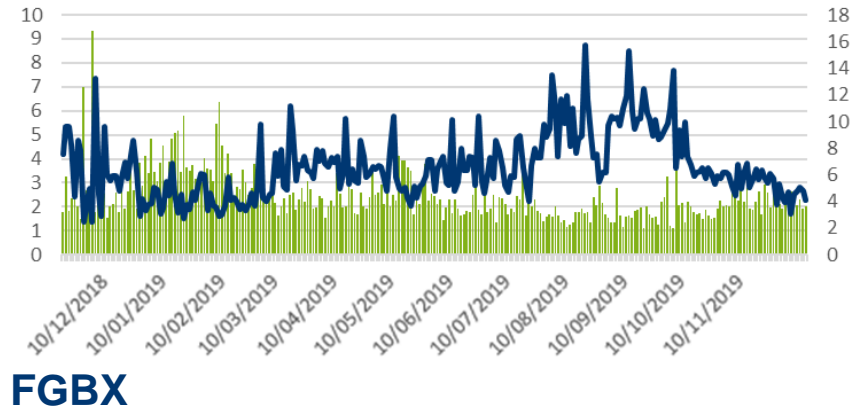
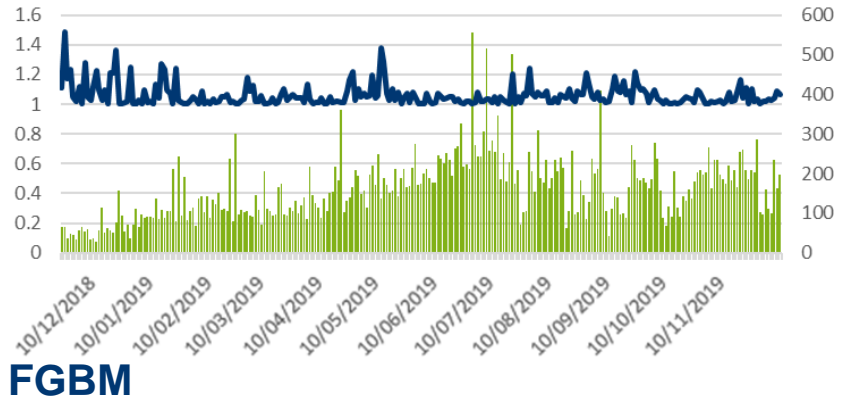
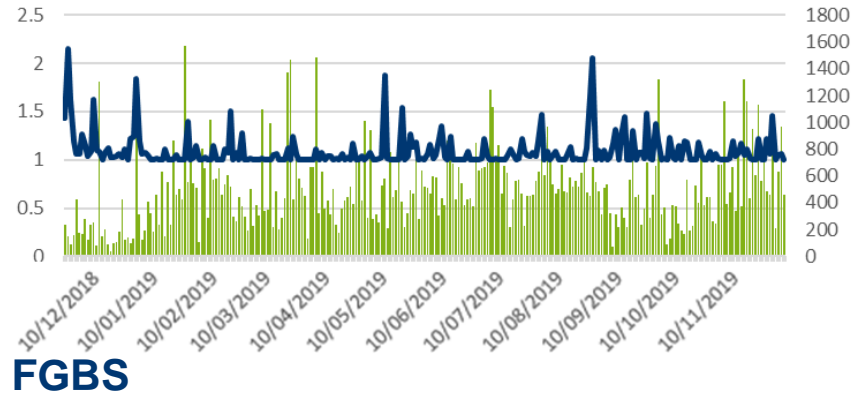
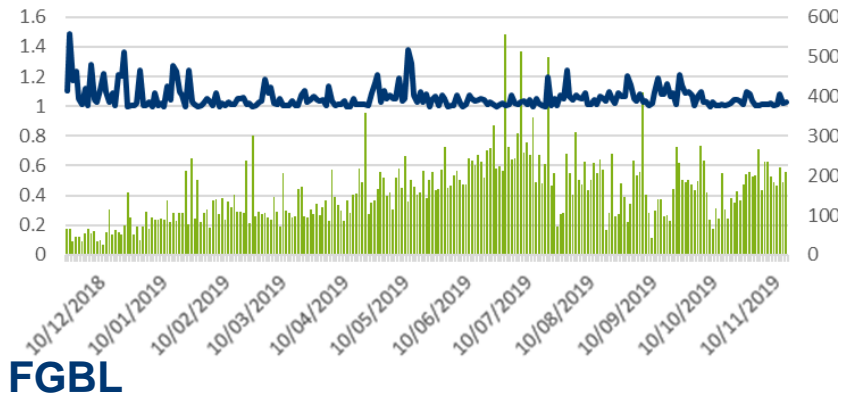


- FESX, FGBL, FGBM and FGBS performed marvellously trading at 1 tick on average during the extended hours; their respective liquidity is enhanced with a gradual growth in best price depth
- FDAX saw the most improvement in its liquidity in terms of spread; its best price size also made an improvement from average of 2 to 3.5 lots on average
- FDXM experienced a strong narrowing of spread, reaching close to 3 ticks with fluctuations; more improvement can be made
- FGBL, FGBM and FGBS have been trading on average with spread of 1 tick, but over time the variance of the spread size reduces, signalling a more consistent tight spread
- Charts on Fixed Income futures follow after this page

Best Price Depth (right axis) Spread (left axis)

Orderbook Liquidity Development Analysis

Average Daily Spread and Best Price Depth of FGBL, FGBM, FGBS, FGBX



Best Price Size (right axis) Spread (left axis)

APPENDIX

Product Scope for Eurex Asian Trading Hours

Equity Index Futures

- Liquid Benchmark Futures
 - **FESX (EURO STOXX 50 Futures)**
 - **FDAX (DAX Futures)**
 - **FDXM (Mini DAX Futures)**
- All Eurex MSCI Futures

Fixed Income Futures

- Liquid Benchmark Futures (Germany)
 - **FGBX (30y - Buxl Futures)**
 - **FGBL (10y - Bund Futures)**
 - **FGBM (5y - Bobl Futures)**
 - **FGBS (2y - Schatz Futures)**

Major Design Elements – Trading

General

- All trading functionalities available including T7 Trade Entry Service (TES)
- Full re-use of existing Eurex membership, technical infrastructure, login data and trader IDs

Market Integrity

- **Risk Protection for Liquidity Providers (LP):** the Eurex system provides LPs with various features for system-based risk protection. With these tools, LPs can significantly constrain operational and market risks, preventing too many simultaneous trade executions on quotes provided by a LP
- **Volatility Interruption:** the risk that markets decline in large price drops is not only a result of market orders but also limit orders. To guard against that, in its benchmark products, the Eurex system validates every single trade against price bands within given time frames. If the system concludes that price determination lies outside the price bands, it automatically stops regular order book trading
- **Market Supervision:** on-going level of support during trading hours, using various parameters and triggers to monitor abnormalities in the order book activity and ensure there is a fair and orderly market

Liquidity Provision

- Liquidity Provision programs available for the Asian time zone, combined with attractive incentive schemes for qualifying Liquidity Providers (more information on LP schemes upon request)
- Continuous quotes during Asian trading hours will be provided by our partnering Liquidity Providers

Major Design Elements – Clearing & Risk

General

- Clearing and risk functionalities available during Asian trading hours
- Full re-use of existing Eurex Clearing membership, technical infrastructure, login data and Member ID
- Intraday Risk Management; Intra-night Margin calls to be fulfilled during Asian trading hours
- Staff must be reachable during Asian trading hours
- Post-trade functionalities expected to be available for select benchmark products during Asian hours

Risk Management

- Risk functionalities (portfolio-based margining methodology) currently used during the regular trading hours to be applied during the Asian trading and clearing hours for active products (further optimisation and analysis ongoing)
- Advanced Risk Protection handling (level 1: alert, level 2: slow down, level 3: halt) based on PRISMA calculations available during Asian trading and clearing hours
- No changes to default management process
- Same Intraday risk reports as of today (e.g. CI042, CI050, CI060) offered during the Asian trading hours to members on Common Report Engine (CRE)
- Real time risk monitoring and consistent margin call procedures during Asian trading hours
- Margin calls to be fulfilled in AUD or via existing USD payment infrastructure during Asian hours

Major Design Elements – Clearing & Risk

Margin Calls during Asia Trading Hours

- Existing margin call procedures for activities during the standard trading session will remain unchanged
- Overnight margin calls are auto debited the following morning by 8am CET (EUR) / 9am CET (CHF/GBP)
- Regular intraday margin calls may be issued between 8am CET and 10pm CET (today's practice)
- New: Margin calls during Asian trading hours shall only be issued in the case of position changes (i.e. no intra-night margin call solely based on market movements)*
- Calculated overnight shortfalls are “set to zero”, i.e. Eurex Clearing will consider overnight margin calls as fulfilled by the start of Asian hours, even though the call will only be debited by 8am CET (EUR) / 9am CET (CHF/GBP). Eurex Clearing will treat all collateral pools flat or over-collateralized for the start of the Asian trading hours*
- Eurex Clearing will only issue a margin call during Asian hours, if the intraday margin limit has been exceeded (in general 10% of the Clearing Member's overnight margin requirement per pool)*

*subject to regulatory approval

Major Design Elements – Clearing & Risk

Margin Calls - Mitigating Measures

- Clearing Members can pledge additional cash / non-cash collateral with Eurex (i.e. over-collateralization) during regular hours on the preceding business day to avoid margin calls during Asian hours
- Clearing Members can define a Permanent Cash Balance (PCB) to establish a cash buffer which is automatically restored on a daily basis
- Clearing Members may actively manage their total margin requirement by entering risk reducing trades
- Clearing Members have the possibility to delete their own open orders from the order book prior to Asian hours market opening to avoid position changes and hence margin calls during the extended session

Correspondent Banks

- Available correspondent banks for USD include Citibank N.A., Deutsche Bank Trust, Bank of New York Mellon, JP Morgan Chase Bank N.A., JP Morgan Chase Bank N.A., London, and Bank of America
- Available correspondent banks for AUD: ANZ Banking Group Limited and Westpac Banking Corporation

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