

Delivery Manual for Deliverable Interest Rate Swap Futures

- USD DSFs — 2-Year, 5-Year, 10-Year and 30-Year Contracts
- Euro DSFs — 2-Year, 5-Year and 10-Year Contracts

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INTRODUCTION

In December 2012, CME Group transformed interest rate markets with the introduction of deliverable swap futures (DSFs), which are futures that provide for physical delivery of standardized centrally cleared interest rate swaps (IRS). Each DSF expiring futures contract results in the assignment of a contract-grade over-the-counter (OTC) interest rate swap cleared by CME Clearing. This manual provides an overview of the physical delivery process for DSFs, both US dollar-denominated (USD) and euro-denominated (EUR).¹

The Significance of Physical Delivery

Since the late 1990s, various futures exchanges have listed interest rate swap futures for trading. Among these, the common feature is that they expire by cash settlement with reference to one IRS rate benchmark or another.

Two developments paved the way for CME Group's introduction of DSFs. The first was the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank). Enacted in July 2010, one of its notable features was a mandate for centralized clearing of IRS. The second occurred in Autumn 2010, when CME Clearing enabled itself to accept over-the-counter IRS for centralized clearing.

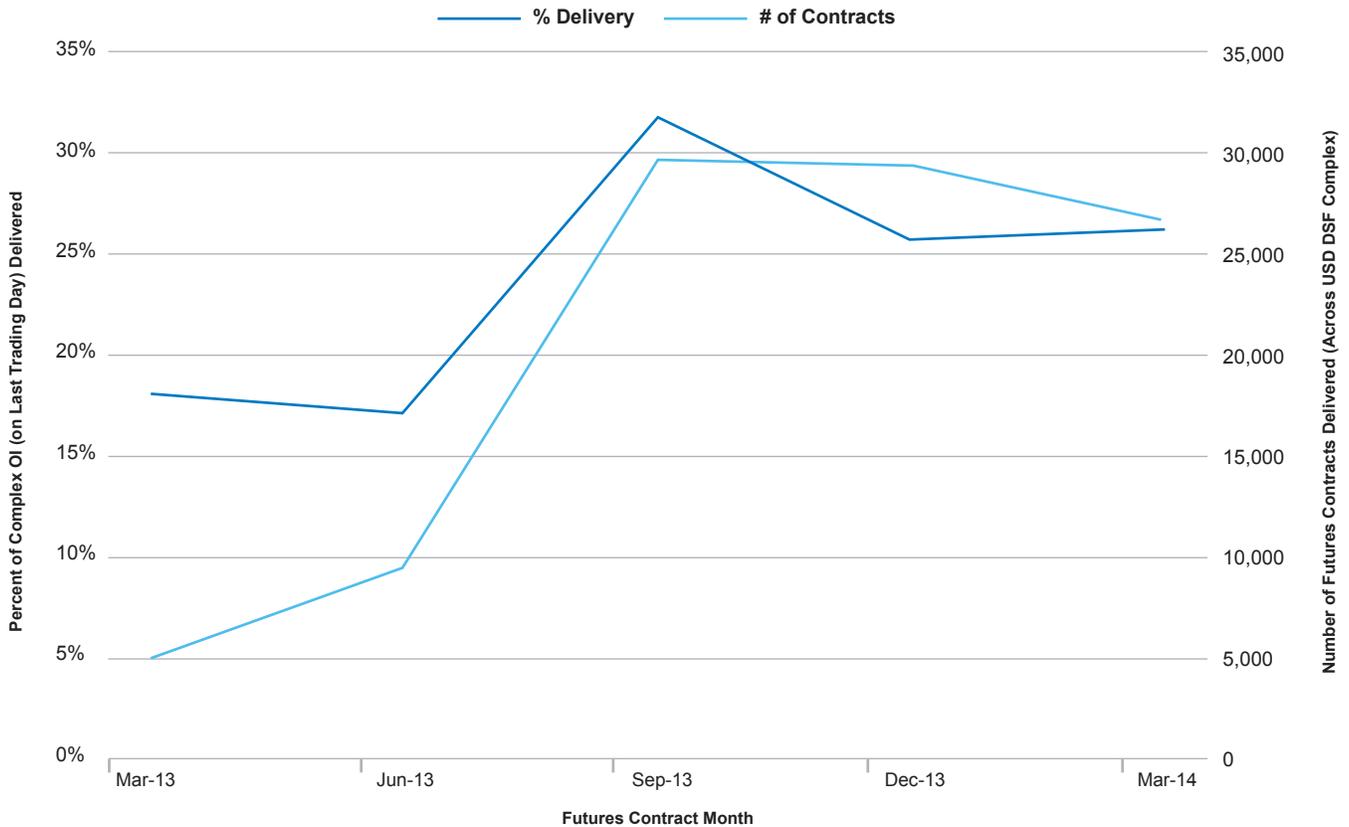
The DSF contract structure benefits users in at least two ways. First, physical delivery creates a stronger relationship between the futures contract and its underlying market, insofar as it ensures convergence to OTC market pricing. Physical delivery at expiration also affords futures position holders the flexibility to replace expiring futures exposures with OTC IRS exposures, which they may prefer from a cash-flow perspective.

The increasing incidence of physical delivery – in terms of both raw numbers of futures contracts and the share of open interest taken to delivery – over the first five USD DSF expirations in 2013 and early 2014 evidences that contract users find this feature to be valuable.

As the chart on page 4 illustrates, the last three contract delivery months – September 2013, December 2013 and March 2014 – resulted in deliveries on more than 25,000 futures contracts, more than 25% of the outstanding open interest, equivalent to around \$2.5 billion in notional value of CME Cleared IRS assigned in delivery at each expiration. In contrast, Treasury futures have resulted in 2.3% of open interest being delivered since 2000.

¹ US Dollar Interest Rate Swap futures (USD DSFs) and Euro Interest Rate Swap futures (EUR DSFs) are listed on, and trade according to the rules of, the Chicago Board of Trade (CBOT). The CBOT Rulebook is the definitive source for all rules and requirements governing the DSF delivery process, and it is advised that any participant should consult these rules prior to trading and taking delivery of the product.

USD Deliverable Swap Futures Complex (2-Yr, 5-Yr, 10-Yr, 30-Yr) Delivery History, March 2013-March 2014



Source: CME Group.

Deliverable Grade

USD DSFs

Each USD DSF contract is for physical delivery of IRS with notional size of \$100,000.

The underlying deliverable-grade swap for each futures contract has a fixed rate that is established by CME Group when the contract is listed for trading, and that remains constant for the life of the futures contract.

Although the fixed rate for a given contract delivery month may be set at any value in the Exchange's sole discretion, it typically matches the corresponding US dollar Market Agreed Coupon (MAC) swap rate, as determined and promulgated by ISDA and the SIFMA Asset Management Group.

The deliverable grade for a 2-Year USD DSF, 5-Year USD DSF, 10-Year USD DSF or 30-Year USD DSF is an interest rate swap:

- With corresponding tenor,
 - That pays (receives) semiannual fixed rate interest payments at the swap rate that standardizes the futures contract, in exchange for receipt (or payment) of quarterly floating rate interest payments based on the 3-month London interbank offered rate, and it is advised that any participant should consult these rules prior to trading and taking delivery of the product.
- As reflected in 3-month US dollar ICE LIBOR, administered by ICE Benchmark Administration Limited, and
- That is cleared and guaranteed by CME Clearing.

Euro DSFs

Each Euro DSF contract is for physical delivery of IRS with notional size of €100,000.

As with its US dollar counterparts, the underlying deliverable-grade swap for each Euro DSF contract has a fixed rate that is established by CME Group when the contract is listed for trading and that holds constant for the life of the futures contract. Though it bears no obligation to do so, the Exchange characteristically sets the fixed rate for a given contract delivery month so as to equal the corresponding Euro MAC swap rate. The deliverable grade for a 2-Year Euro DSF, or 5-Year Euro DSF, or 10-Year Euro DSF is an interest rate swap:

- With corresponding tenor,
- That pays (receives) annual fixed rate interest payments at the swap rate that standardizes the futures contract, in exchange for receipt (or payment) of semiannual floating rate interest payments based on the 6-month Euro interbank offered rate, as reflected in 6-month EURIBOR[®], administered by Euribor-EBF, and
- That is cleared and guaranteed by CME Clearing.

Who Participates in Physical Delivery?

Participation in the DSF physical delivery process is restricted to market participants who meet two criteria. First, they must be Eligible Contract Participants (ECPs), as defined in the US Code of Federal Regulations (17 CFR 1.3(m)) and the US Commodity Exchange Act, as amended (Section 1a(18)). Second, an account assigned to deliver or accept delivery on an expiring futures contract must be either a duly registered CME IRS Clearing Member or an IRS Participant registered with CME by an IRS Clearing Member.

To learn more about registration with CME IRS Clearing, please visit cmegroup.com/trading/otc/ and cmegroup.com/trading/otc/files/otc-registration-forms.xls

The Role of the Clearing Firms

A CME Futures Clearing Member is permitted to maintain DSF positions for customers regardless of whether it is affiliated with a CME IRS Clearing Member. However, the process of making or taking delivery of IRS in connection with expiring DSFs **requires** the IRS participant to have at least one account carried by a CME IRS Clearing Member.

Therefore, any customer who anticipates making or taking delivery on an expiring DSF contract must work with its CME Futures Clearing Member to ensure that the customer's CME IRS Clearing Member is notified and prepared to guarantee goodness of delivery. If a CME IRS Clearing Member rejects a pending delivery, it is the sole responsibility of the customer's CME Futures Clearing Member to work with CME Clearing to promptly resolve the matter by redirecting the delivery to another CME IRS Clearing Member (who, presumably, also carries a CME IRS Participant account on behalf of the customer).

The Timetable for Delivery

Futures Clearing Members – Obligations

The delivery process for DSFs becomes effective during the last five trading days of the expiring contracts. During each of the five trading days, CME Futures Clearing Members are required to provide CME Clearing an inventory of the long and short DSF positions being maintained by them. This daily report is provided to CME Clearing by an intent submission in Deliveries Plus.

Futures Clearing Member Firms must demonstrate that the futures account owner intending to make or accept delivery meets the two requirements of ECP **and** CME IRS Clearing Member or IRS Participant. Futures Clearing Member Firms are required to provide the CME Clearing Deliveries Team notification of open positions that it does not anticipate resulting in delivery of IRS. This requirement applies to **all** Futures Clearing Members maintaining **any** DSF positions that they anticipate will not result in DSF delivery.

Furthermore, Futures Clearing Member Firms must ensure that the account owner intending to participate in delivery can maintain a position in the DSF Deliverable Grade, and they must get acknowledgment from the designated IRS Clearing Member that they will assume responsibility for the delivery.

Customer accounts must be permissioned by their Futures Clearing Firms to trade expiring DSFs during the seven calendar days prior to the Last Trading Day. This risk management tool, the DSF Access Manager, prevents firms from trading DSFs during the delivery process without the explicit approval of their Futures Clearing Firms.

For more information about the DSF Access Manager, please visit: cmegroup.com/confluence/display/EPICSANDBOX/DSF+Access+Manager

IRS Clearing Members – Notification and Obligations

CME Clearing provides IRS Clearing Members a detailed report of pending deliveries from unaffiliated Futures Clearing Firms during each of the last five trading days of the expiring contract. For each pending delivery, IRS Clearing Members are required to provide CME Clearing with an approval or rejection response directed to the Deliveries Team by 12:30 p.m. the following business day.

CME Clearing notifies IRS Clearing Members of the accounts that are required to make or accept deliverable grade IRS in fulfillment of the expiring futures contract by 6 p.m. on Intention Day. CME Clearing informs IRS Clearing Members of the initial and variation margin amounts due as result of IRS exposures assigned in

DSF deliveries by 10 p.m. on Intention Day, the business day following the Last Trading Day. The IRS positions originating from delivery are detailed on the Trade Registers of the IRS Clearing Members on Intention Day.

The delivery process concludes by 7:30 a.m. on Delivery Day/IRS Effective Date. The payments of initial margin, variation margin and upfront payments are completed. The deliverable grade CME IRS is reported to the CME Swap Data Repository (SDR) by CME Clearing. CME Clearing automatically clears the new CME IRS without the claim workflow of a typical IRS trade, and it sends a clearing confirmation to the IRS Clearing Member.

The following table provides the timetable for CME Clearing and Clearing Members during the DSF delivery process:

Delivery Timetable For DSF CONTRACTS (All times listed in Central Time Unless Otherwise Noted)

	Futures Clearing Member	IRS Clearing Member	CME Clearing
Each of Expiring Contract's Last 5 Trading Days	Between 8 a.m. and 8 p.m. Report to CME Clearing Delivery Team details of all account holdings of open interest in expiring futures.	No later than 12:30 p.m. Where an account owner designates a CME IRS Clearing Member, who is unaffiliated with the account owner's CME Futures Clearing Member, to guarantee delivery on expiring DSF, such IRS Clearing Member must provide CME Clearing with an approval or rejection response.	By 11:30 p.m. CME Clearing provides delivery instructions to IRS Clearing Member.
Last Trading Day	No later than 8 p.m. Each CME Futures Clearing Member must provide to CME Clearing final designated CME IRS Clearing Member who will guarantee delivery on expiring DSF held in each futures account with such CME Futures Clearing Member carrying OI in expiring DSF.		5:15 p.m. Central European Time (CET) Expiring Euro contracts cease trading. 2 p.m. Expiring USD contracts cease trading. Upfront fee/delivery amounts are calculated on basis of contract final settlement prices and published on CME website.
Intention Day (Acceptance Date/Clearing Effective Date for IRS)	No later than 12 noon CME Futures Clearing Member may redirect a pending delivery from one CME IRS Clearing Member to another. If such IRS Clearing Member rejects such pending delivery, the CME Futures Clearing Member is solely responsible to work with CME Clearing to resolve the delivery. End of Processing Day Futures Clearing Member's positions in expiring DSF are removed.	No later than 12:30 p.m. All approvals and/or rejections of pending deliveries on expiring DSF must be submitted. No later than 6 p.m. CME IRS Clearing Members receive details of contract-grade IRS to be delivered or accepted in delivery.	No later than 10 p.m. CME Clearing informs IRS Clearing Members of initial margin and variation margin amounts due in connection with IRS exposures assigned in DSF deliveries.
Delivery Day (IRS Effective Date)			No later than 7:30 a.m. Payments of initial margin, variation margin, and upfront payments entailed in delivery are complete.

Delivery Invoice Price/Upfront Fee

Delivery invoice price takes the form of an initial payment upon delivery of the contract-grade IRS, where the payment amount is determined by the difference between the futures final settlement price and par.

Delivery invoice price = IRS Initial Payment Amount, as determined by contract final settlement price, P:

For USD DSF –

If $100 < P$, IRS Floating Rate Payer pays $\$1,000 \times (P - 100)$.
If $P \leq 100$, IRS Fixed Rate Payer pays $\$1,000 \times (100 - P)$.

For Euro DSF –

If $100 < P$, IRS Floating Rate Payer pays $\text{€}1,000 \times (P - 100)$.
If $P \leq 100$, IRS Fixed Rate Payer pays $\text{€}1,000 \times (100 - P)$.

Example 1

Suppose 10-Year Euro DSF futures expire at a final settlement price of 107.620. In effect, market participants estimate the present value of fixed-rate payments that the contract's deliverable-grade IRS will make over the coming decade exceeds the expected present value of the swap's floating-rate payments by a margin equal to €7,620 for every €100,000 of notional principal –

$$\text{€}7,620 = (\text{€}1,000 \text{ per price point}) \times (107.620 \text{ points minus } 100 \text{ points})$$

Examples 3

The following table summarizes the upfront payments for the December 2013 USD DSF contracts.

December 2013 Contracts-Deliverable Swap Futures Settlement and Upfront Fee

Contract	Contract Fixed Rate	Contract Size	Final Settlement Price	Upfront Fee Per Contract	
				Buyer	Seller
30 Year	3.25	\$1000 per point	89.5	\$10,500.00	-\$10,500.00
10 Year	2.50	\$1000 per point	96.078125	\$3,921.88	-\$3,921.88
5 Year	1.50	\$1000 per point	99.453125	\$546.88	-\$546.88
2 Year	0.50	\$1000 per point	100.1484375	-\$148.44	\$148.44

Based upon the Final Settlement Prices for the December 2013 contracts, CME Clearing applied the Final Settlement Prices for the December 2013 contracts. These calculations demonstrate the method for determining the Buyer and Seller Upfront fees, which are equal and opposite.

Two business days later, on the 3rd Wednesday of the futures delivery month, each long position holder in the expired futures pays to CME Clearing a delivery invoice amount of €7,620 per contract to become the floating-rate payer (fixed-rate receiver) on a new 10-year interest rate swap in the amount of €100,000 notional per contract. Each short position holder in the expired futures receives from CME Clearing an initial payment amount of €7,620 as the fixed-rate payer (floating-rate receiver).

Example 2

On 16 Dec 2013, December (2013) 30-Year USD DSF futures expired at a final settlement price of 89.5. As the final settlement price is below 100, market participants evidently expect the fixed-rate payments promised by the futures contract's deliverable-grade IRS to be exceeded by the swap's floating rate payment stream by a present-valued amount of \$10,500 per \$100,000 of notional principal –

$$\text{\$}10,500 = (\text{\$}1,000 \text{ per point}) \times (100 \text{ points minus } 89.5 \text{ points})$$

On 18 Dec 2013, each long position holder in the expiring futures received an Initial Payment Amount of \$10,500 per contract as the floating-rate payer (fixed-rate receiver) on a new 30-year IRS sized at \$100,000 notional per futures contract. The converse applies to each short position holder in the expiring futures.

Below are the **Buyer** Upfront Fees (ie, upfront fees for holders of long futures positions) for the December 2013 contracts:

$$\begin{aligned} 30\text{Yr: } & (100 - 89.5) \times \$1000 = & \text{\$}10,500.00 \\ 10\text{Yr: } & (100 - 96.078125) \times \$1000 = & \text{\$}3,921.88 \\ 5\text{Yr: } & (100 - 99.453125) \times \$1000 = & \text{\$}546.88 \\ 2\text{Yr: } & (100 - 100.1484375) \times \$1000 = & \text{-}\text{\$}148.44 \end{aligned}$$

Appendix

USD Deliverable Interest Rate Swap Futures Contract Specifications

Trading Unit	An interest rate swap (IRS), cleared by CME Clearing, with \$100,000 notional principal and tenor equal to Reference Tenor, that exchanges annual fixed interest payments at a rate per annum equal to Contract Fixed Rate for quarterly floating interest rate payments based on the 3-month London interbank offered rate.	
Reference Tenors	2-Year, 5-Year, 10-Year or 30-Year	
Delivery Months	March, June, September or December	
Contract Fixed Rate	Set by the Exchange when a futures contract is listed for trading, as a rate per annum with 30/360 day count fraction, at an integer multiple of 25 basis points per annum.	
Price Basis	Prices are made in terms of price points: 100 points plus net present value (NPV) of IRS that meets Delivery Standard, where NPV is present value of IRS fixed-rate payments minus present value of IRS floating-rate payments as of 3rd Wednesday of futures Delivery Month. Par is on the basis of 100 points.	
Contract Size	\$1,000 per point (\$100,000 per contract)	
Minimum Price Increment	Reference Tenor	Minimum Price Increment
	30-Year	1/32nd point (\$31.25 per contract)
	10-Year and 5-Year	½ of 1/32nd point (\$15.625 per contract)
	2-Year	¼ of 1/32nd point (\$7.8125 per contract)
Last Trading Day	2nd London business day before 3rd Wednesday of Delivery Month	
Delivery Day	3rd Wednesday of Delivery Month	
Delivery Standard	IRS cleared by CME Clearing, with the following elections –	
	<i>Fixed Rate Payer</i>	Short futures position holder making delivery
	<i>Floating Rate Payer</i>	Long futures position holder taking delivery
	<i>IRS Effective Date</i>	3rd Wednesday of Delivery Month = Delivery Day
	<i>Currency</i>	USD
	<i>Notional Amount</i>	Contract Size = \$1,000 per point (\$100,000 per futures contract)
	<i>Business Day(s)</i>	New York and London
	<i>Business Day Convention</i>	Modified Following
	<i>Termination Date</i>	Anniversary of IRS Effective Date at futures contract Reference
	<i>Fixed Rate Payment Dates</i>	Semiannually, from IRS Effective Date
	<i>Fixed Rate</i>	Contract Fixed Rate
	<i>Fixed Rate Day Count</i>	30/360
	<i>Floating Rate Payment Dates</i>	Quarterly, from IRS Effective Date
	<i>Floating Rate Option</i>	USD-LIBOR-BBA
	<i>Designated Maturity</i>	3 Month
	<i>Spread</i>	None
	<i>Floating Rate Day Count</i>	Actual/360
	<i>Compounding</i>	None

USD Deliverable Interest Rate Swap Futures Contract Specifications (continued)

Delivery Method	<p>Physical delivery of IRS that meets Delivery Standard.</p> <p>IRS Clearing Acceptance Date, and IRS Clearing Effective Date = First CME Clearing Business Day preceding 3rd Wednesday of Delivery Month.</p> <p>Delivery Date = 3rd Wednesday of Delivery Month.</p> <p>Delivery invoice price = IRS Initial Payment Amount, as determined by contract final settlement price, P:</p> <p>If $100 < P$, IRS Floating Rate Payer pays $\\$1,000 \times (P - 100)$.</p> <p>If $P \leq 100$, IRS Fixed Rate Payer pays $\\$1,000 \times (100 - P)$.</p>	
Delivery Eligibility	<p>To participate in physical delivery, a futures position holder must be an Eligible Contract Participant (17 CFR 1.3(m) in Code of Federal Regulations, Section 1a(18) of the Commodity Exchange Act, and CME Rule 90005.C.) and must be registered with CME by a CME IRS Clearing Member as an IRS Participant (CME Rules 90005.A. and 90005.B.).</p>	
Position Accountability	5,000+ contracts	
Reportable Positions	1+ contracts	
Block Trade Thresholds	Reference Tenor	Minimum Price Increment
	30-Year	500
	10-Year	1000
	5-Year	1,500
	2-Year	3,000
	<i>Each block trade must be reported to the Exchange by the seller within 15 minutes of transaction.</i>	
Trading Hours and Venue	<p>CME Globex: 5 p.m. to 4 p.m. Chicago time, Sun-Fri.</p> <p>Open Outcry: 7:20 a.m. to 2 p.m. Chicago time, Mon-Fri.</p> <p>Trading in expiring futures terminates at 2 p.m. Chicago time on Last Trading Day.</p> <p>USD Interest Rate Swap futures trade on, and according to the rules of, the Chicago Board of Trade.</p>	

Euro Deliverable Interest Rate Swap Futures Contract Specifications

Trading Unit	An interest rate swap (IRS), cleared by CME Clearing, with €100,000 notional principal and tenor equal to Reference Tenor, that exchanges annual fixed interest payments at a rate per annum equal to Contract Fixed Rate for semiannual floating interest rate payments based on the 6-month Euro interbank offered rate.	
Reference Tenors	2-Year, 5-Year, or 10-Year	
Delivery Months	March, June, September, or December	
Contract Fixed Rate	Set by the Exchange when a futures contract is listed for trading, as a rate per annum with 30/360 day count fraction, at an integer multiple of 25 basis points per annum.	
Price Basis	Prices are made in terms of price points: 100 points plus net present value (NPV) of IRS that meets Delivery Standard, where NPV is present value of IRS fixed-rate payments minus present value of IRS floating-rate payments as of 3rd Wednesday of futures Delivery Month. Par is on the basis of 100 points.	
Contract Size	€1,000 per point (€100,000 per contract)	
Minimum Price Increment	Reference Tenor	Minimum Price Increment
	10-Year 5-Year	0.01 points (€10 per contract)
	2-Year	0.005 points (€5 per contract)
Last Trading Day	2nd TARGET Settlement Day before 3rd Wednesday of Delivery Month	
Delivery Day	3rd Wednesday of Delivery Month	
Delivery Standard	IRS cleared by CME Clearing, with the following elections –	
	<i>Fixed Rate Payer</i>	Short futures position holder making delivery
	<i>Floating Rate Payer</i>	Long futures position holder taking delivery
	<i>IRS Effective Date</i>	3rd Wednesday of Delivery Month = Delivery Day
	<i>Currency</i>	EUR
	<i>Notional Amount</i>	Contract Size = €1,000 per point (€100,000 per futures contract)
	<i>Business Day(s)</i>	TARGET Settlement Days
	<i>Business Day Convention</i>	Modified Following
	<i>Termination Date</i>	Anniversary of IRS Effective Date at futures contract Reference Tenor
	<i>Fixed Rate Payment Dates</i>	Semiannually, from IRS Effective Date
	<i>Fixed Rate</i>	Contract Fixed Rate
	<i>Fixed Rate Day Count</i>	30/360
	<i>Floating Rate Payment Dates</i>	Semiannually, from IRS Effective Date
	<i>Floating Rate Option</i>	EUR-EURIBOR-Reuters
	<i>Designated Maturity</i>	6 Month
	<i>Spread</i>	None
	<i>Floating Rate Day Count</i>	Actual/360
	<i>Compounding</i>	None

Euro Deliverable Interest Rate Swap Futures Contract Specifications (continued)

Delivery Method	Physical delivery of IRS that meets Delivery Standard. IRS Clearing Acceptance Date, and IRS Clearing Effective Date = First CME Clearing Business Day preceding 3rd Wednesday of Delivery Month. Delivery Date = 3rd Wednesday of Delivery Month. Delivery invoice price = IRS Initial Payment Amount, as determined by contract final settlement price, P: If $100 < P$, IRS Floating Rate Payer pays €1,000 x (P – 100). If $P \leq 100$, IRS Fixed Rate Payer pays €1,000 x (100 – P).	
Delivery Eligibility	To participate in physical delivery, a futures position holder must be an Eligible Contract Participant (17 CFR 1.3(m) in Code of Federal Regulations, Section 1a(18) of the Commodity Exchange Act, and CME Rule 90005.C.) and must be registered with CME by a CME IRS Clearing Member as an IRS Participant (CME Rules 90005.A. and 90005.B.).	
Position Accountability	5,000+ contracts	
Reportable Positions	1+ contracts	
Block Trade Thresholds	Reference Tenor	Minimum Price Increment
	10-Year	500
	5-Year	750
	2-Year	1,500
	<i>Each block trade must be reported to the Exchange by the seller within 15 minutes of transaction.</i>	
Trading Hours and Venue	CME Globex: 5 p.m. to 4 p.m. Chicago time, Sun-Fri. Trading in expiring futures terminates at 5:15 p.m. CET (generally 10:15 a.m. Chicago time) Euro Interest Rate Swap futures shall trade on, and according to the rules of, the Chicago Board of Trade	

For more information, please visit cmegroup.com/dsf

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