

## SUBMISSION COVER SHEET

**Registered Entity Identifier Code (optional):** 2013-09-P8    **Date:** **September 29, 2013**

**IMPORTANT: CHECK BOX IF CONFIDENTIAL TREATMENT IS REQUESTED.**

<b>ORGANIZATION</b>	Bloomberg SEF LLC
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<b>FILING AS A:</b> <input type="checkbox"/> <b>DCM</b> <input checked="" type="checkbox"/> <b>SEF</b> <input type="checkbox"/> <b>DCO</b> <input type="checkbox"/> <b>SDR</b> <input type="checkbox"/> <b>ECM/SPDC</b>
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<b>TYPE OF FILING</b>	
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- **Rules and Rule Amendments**

- Certification under § 40.6 (a) or § 41.24 (a)
- “Non-Material Agricultural Rule Change” under § 40.4 (b)(5)
- Notification under § 40.6 (d)
- Request for Approval under § 40.4 (a) or § 40.5 (a)
- Advance Notice of SIDCO Rule Change under § 40.10 (a)

- **Products**

- Certification under § 39.5(b), § 40.2 (a), or § 41.23 (a)
- Swap Class Certification under § 40.2 (d)
- Request for Approval under § 40.3 (a)
- Novel Derivative Product Notification under § 40.12 (a)

<b>RULE NUMBERS</b>	
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None applicable; terms and conditions of the “Foreign Exchange: Non-Deliverable Forward Contract” (“Contract”) are attached as Attachment A.

<b>DESCRIPTION</b>	
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In accordance with Commodity Futures Trading Commission (“Commission”) Regulation § 40.2(a), this is a submission, by Bloomberg SEF LLC (“BSEF”), for Commission review and approval of a new product for trading – the “Foreign Exchange: Non-Deliverable Forward Contract” (“Contract”).

**Bloomberg SEF LLC  
New Contract Submission 2013-09-P8  
September 29, 2013**

1. The Contract's terms and conditions are attached as Attachment A.
2. The intended listing date is October 2, 2013.
3. Attached, please find a certification that: (a) the Contract complies with the Act and the Commission regulations thereunder; and (b) concurrent with this submission, BSEF posted on its website: (i) a notice of pending certification of this Contract with the Commission; and (ii) a copy of this submission.

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**EXPLANATION AND ANALYSIS OF THE CONTRACT'S COMPLIANCE WITH  
APPLICABLE CORE PRINCIPLES AND COMMISSION REGULATIONS**

As required by Commission Regulation § 40.2(a), the following analysis, in the form of narrative and explanatory charts, demonstrates that the Contract is consistent with the requirements of the Act and the Commission regulations and policies thereunder (in particular, Appendix B to Part 37 and Appendix C to Part 38, respectively).

**Appendix B to Part 37—Demonstration of Compliance That a Contract Is Not Readily Susceptible to Manipulation**

**Core Principle 3 of Section 5h of the Act—Swaps Not Readily Susceptible to Manipulation. The swap execution facility shall permit trading only in swaps that are not readily susceptible to manipulation.**

**(a) Guidance.**

**(1) In general, a swap contract is an agreement to exchange a series of cash flows over a period of time based on some reference price, which could be a single price, such as an absolute level or a differential, or a price index calculated based on multiple observations. Moreover, such a reference price may be reported by the swap execution facility itself or by an independent third party. When listing a swap for trading, a swap execution facility shall ensure a swap's compliance with Core Principle 3, paying special attention to the reference price used to determine the cash flow exchanges. Specifically, Core Principle 3 requires that the reference price used by a swap not be readily susceptible to manipulation. As a result, when identifying a reference price, a swap execution facility should either: Calculate its own reference price using suitable and well-established acceptable methods or carefully select a reliable third-party index.**

**(2) The importance of the reference price's suitability for a given swap is similar to that of the final settlement price for a cash-settled futures contract. If the final settlement price is**

**manipulated, then the futures contract does not serve its intended price discovery and risk management functions. Similarly, inappropriate reference prices cause the cash flows between the buyer and seller to differ from the proper amounts, thus benefitting one party and disadvantaging the other. Thus, careful consideration should be given to the potential for manipulation or distortion of the reference price.**

This Contract is typical of non-deliverable forwards, in that the counterparties arrange settlement by calculating the difference between the Contracted NDF Rate, which is agreed on between the counterparties at the start of the contract, and the prevailing Spot FX Rate, on the Fixing Date. This difference is then multiplied by the notional amount, which is also determined at the start of the contract. As such, the reference price is the prevailing Spot FX Rate on the date / time in which the parties agree that the comparison will be made (i.e., Fixing Date). The source for the Spot FX Rate on the Fixing Date will be bilaterally agreed and, in majority of cases, determined by the Central Banks. This information is easily accessible to the public; Bloomberg displays daily fixing rates on page FIXI<GO>.

### ***Reference Price is Not Readily Susceptible to Manipulation***

As noted above, the Spot FX Rate (i.e., the reference price) is not easily susceptible to manipulation since it is generated by the through a transparent, rules-based process. The reliability of Fixing FX Rate data is evident in its general acceptance in the market place as a reliable, unbiased source for foreign exchange rate data calculated by Central Banks, Emerging Market Trades Association (“EMTA”) and a number of reputable calculation agencies, including Bloomberg.

**(3) For swaps that are settled by physical delivery or by cash settlement refer to the guidance in appendix C to part 38 of this chapter—Demonstration of Compliance That a Contract is not Readily Susceptible to Manipulation, section b(2) and section c(4), respectively.**

### **Appendix C to Part 38 - Demonstration of Compliance That a Contract Is Not Readily Susceptible to Manipulation**

**(c) Futures Contracts Settled by Cash Settlement. (1) Cash settlement is a method of settling certain futures or option contracts whereby, at contract expiration, the contract is settled by cash payment in lieu of physical delivery of the commodity or instrument underlying the contract. An acceptable specification of the cash settlement price for commodity futures and option contracts would include rules that fully describe the essential economic characteristics of the underlying commodity (e.g., grade, quality, weight, class, growth, issuer, maturity, source, rating, description of the underlying index and index’s calculation methodology, etc.), as well as how the final settlement price is calculated. In addition, the rules should clearly specify the trading months and hours of trading, the last trading day, contract size, minimum price change (tick size) and any limitations on price movements (e.g., price limits or trading halts).**

### ***Terms of the Contract***

The terms of the contract are attached in Attachment A, including the following:

Contract Overview	A non-deliverable forward (NDF) is an outright forward in which counterparties settle the difference between the contracted NDF price or rate and the prevailing spot price or rate on an agreed notional amount.
Reference Currency (i.e., Non-Deliverable Currency)	<ul style="list-style-type: none"> <li>• BRL Brazilian Real</li> <li>• ARS Argentine Peso</li> <li>• CNY Chinese Renminbi</li> <li>• IDR Indonesian Rupiah</li> <li>• INR Indian Rupee</li> <li>• KRW South Korean Won</li> <li>• MYR Malaysian Ringgit</li> <li>• PHP Philippine Peso</li> <li>• TWD Taiwan Dollar</li> <li>• VND Vietnamese đồng</li> <li>• EGP Egyptian pound</li> <li>• RUB Russian ruble</li> <li>• KZT Kazakh tenge</li> <li>• CLP Chilean Peso</li> <li>• COP Colombian Peso</li> <li>• PEN Peruvian nuevo sol</li> <li>• UAH Ukrainian hryvnia</li> <li>• NGN Nigerian naira</li> <li>• GHS Ghanaian cedi</li> <li>• PKR Pakistani rupee</li> </ul>
Settlement Currency	See Settlement Currency list in Attachment A.
Quoting Convention and Minimum Increment	Notional amount, as agreed by counterparties.
Minimum Size	Notional amount, as agreed by counterparties.
Notional Currency	Currency in which contract size is expressed in, as agreed by counterparties.
Trading Conventions	Buy or Sell, which refers to the contract size expressed in notional currency.
Forward Rate	Currency Exchange rate expressed as the amount of Reference Currency per unit of Settlement Currency.
Trade Date	The date on which parties enter into the contract.
Settlement Date	Specified settlement or payment date, as agreed by counterparties.
Fixing Date	The date at which the difference between the prevailing market exchange rate and the agreed upon exchange rate is calculated.
Settlement Procedure	Bilateral settlement performed in settlement currency based on the exchange rate published by the sources set forth in Attachment B hereto.
Trading Hours	00:01 -24:00 (ET), Sunday-Friday.

Block Size	As set forth in Appendix F to Part 43 of the CFTC Regulations.
Speculative Limits	As set in Part 151 of the CFTC Regulations.
Reportable Levels	As set in CFTC Regulation 15.03.

### *Calculation of Cash Settlement Price*

As noted above and as is typical with non-deliverable forwards, the cash settlement price will be the difference between the Contracted NDF Rate and the prevailing Spot FX Rate multiplied by an agreed upon notional amount. Thus, the settlement will be based on the following:

1. **Reference Currency:** As determined by the counterparties at the Trade Date (i.e., start of the Contract); available currencies are listed in the Contract's terms and conditions (Attachment A).
2. **Settlement Currency:** As determined by counterparties at the Trade Date; available currencies are listed in Contract's terms and conditions (Attachment A).
3. **Notional Amount:** Amount agreed by counterparties at Trade Date.
4. **Contracted NDF Rate:** Rate agreed by counterparties, expressed as Reference Currency per unit of Settlement Currency.
5. **Spot FX Rate:** Exchange rate, expressed as Reference Currency per unit of Settlement Currency. The Spot FX Rate is determined on the Fixing Date by reference to a rate published by a source set forth in Attachment B hereto.
6. **Fixing Date:** Date, agreed by counterparties, on which the difference between the Spot FX Rate and the Contracted NDF Rate is calculated.
7. **Settlement Date:** Date, agreed by counterparties, on which settlement payments will be made.

On the Fixing Date, the parties will agree on the Spot FX Rate, as published by the applicable source set forth in Attachment B hereto, which will be expressed as Reference Currency per unit of Settlement Currency. They will calculate the difference between the Contracted NDF Price / Rate and the Spot Price / Rate and multiply that difference by the notional amount, to arrive at the cash settlement price. The cash settlement will be due on the Settlement Date. As noted, this method of calculating settlement for the Contract is a common, widely-used, and widely accepted method of calculating the cash settlement for non-deliverable forward contracts.

**2) Cash settled contracts may be susceptible to manipulation or price distortion. In evaluating the susceptibility of a cash-settled contract to manipulation, a designated contract market should consider the size and liquidity of the cash market that underlies the listed contract in a manner that follows the determination of deliverable supply as noted above in (b)(1). In particular, situations susceptible to manipulation include those in which the volume of cash market transactions and/or the number of participants contacted in determining the cash-settlement price are very low. Cash-settled contracts may create an incentive to manipulate or artificially influence the data from which the cash-settlement price is derived or to exert undue influence on the cash-settlement price's computation in order to profit on a futures position in that commodity.**

**The utility of a cash-settled contract for risk management and price discovery would be significantly impaired if the cash settlement price is not a reliable or robust indicator of the value of the underlying commodity or instrument. Accordingly, careful consideration should be given to the potential for manipulation or distortion of the cash settlement price, as well as the reliability of that price as an indicator of cash market values. Appropriate consideration also should be given to the commercial acceptability, public availability, and timeliness of the price series that is used to calculate the cash settlement price. Documentation demonstrating that the settlement price index is a reliable indicator of market values and conditions and is commonly used as a reference index by industry/market agents should be provided. Such documentation may take on various forms, including carefully documented interview results with knowledgeable agents.**

The Contract is not readily susceptible to manipulation for a number of reasons. First, the foreign exchange market is an extremely liquid market with massive volume, making manipulation very difficult to achieve. Second, as noted above, the method for calculating the cash settlement price – calculating the difference between the Spot FX Rate and the Contracted NDF Rate – is widely used and generally accepted by market participants. Third, as discussed above, the reference used for the Spot FX Rate is very reliable and widely available, and used by numerous market participants. And last, BSEF has a robust market surveillance program that is effectively able to surveil this market, detect uncommon activity, and investigate any such activity for signs of manipulation.

**(3) Where an independent, private-sector third party calculates the cash settlement price series, a designated contract market should consider the need for a licensing agreement that will ensure the designated contract market’s rights to the use of the price series to settle the listed contract.**

**(i) Where an independent, private-sector third party calculates the cash settlement price series, the designated contract market should verify that the third party utilizes business practices that minimize the opportunity or incentive to manipulate the cash-settlement price series. Such safeguards may include lock-downs, prohibitions against derivatives trading by employees, or public dissemination of the names of sources and the price quotes they provide. Because a cash-settled contract may create an incentive to manipulate or artificially influence the underlying market from which the cash-settlement price is derived or to exert undue influence on the cash-settlement computation in order to profit on a futures position in that commodity, a designated contract market should, whenever practicable, enter into an information-sharing agreement with the third-party provider which would enable the designated contract market to better detect and prevent manipulative behavior.**

Please see above regarding the calculation of the cash settlement price.

**(ii) Where a designated contract market itself generates the cash settlement price series, the designated contract market should establish calculation procedures that safeguard against potential attempts to artificially influence the price. For example, if the cash settlement price is derived by the designated contract market based on a survey of cash market**

**sources, the designated contract market should maintain a list of such entities which all should be reputable sources with knowledge of the cash market. In addition, the sample of sources polled should be representative of the cash market, and the poll should be conducted at a time when trading in the cash market is active.**

Please see above regarding the calculation of the cash settlement price, indicating that the method of calculating the cash settlement price is widely accepted in the market.

**(iii) The cash-settlement calculation should involve computational procedures that eliminate or reduce the impact of potentially unrepresentative data.**

**(iv) The cash settlement price should be an accurate and reliable indicator of prices in the underlying cash market. The cash settlement price also should be acceptable to commercial users of the commodity contract. The registered entity should fully document that the settlement price is accurate, reliable, highly regarded by industry/market agents, and fully reflects the economic and commercial conditions of the relevant designated contract market.**

Please see above regarding the reliability and widespread acceptance of the method used to generate the cash settlement price.

**(v) To the extent possible, the cash settlement price should be based on cash price series that are publicly available and available on a timely basis for purposes of calculating the cash settlement price at the expiration of a commodity contract. A designated contract market should make the final cash settlement price and any other supporting information that is appropriate for release to the public, available to the public when cash settlement is accomplished by the derivatives clearing organization. If the cash settlement price is based on cash prices that are obtained from non-public sources (e.g., cash market surveys conducted by the designated contract market or by third parties on behalf of the designated contract market), a designated contract market should make available to the public as soon as possible after a contract month's expiration the final cash settlement price as well as any other supporting information that is appropriate or feasible to make available to the public.**

Spot FX rates are readily available via a number of sources including websites of Central Banks, EMTA and Bloomberg.

**(4) Contract terms and conditions requirements for futures contracts settled by cash settlement.**

**(i) An acceptable specification of the terms and conditions of a cash-settled commodity contract will also set forth the trading months, last trading day, contract size, minimum price change (tick size) and daily price limits, if any.**

The terms and conditions of the Contract include all applicable information, including that: (a) the cash settlement amount of the contract will be determined on the Fixing Date; (b) payments

will be transferred on the Settlement Date; and (c) the Contract size will be determined by the counterparties.

**(A) Commodity Characteristics: The terms and conditions of a commodity contract should describe the commodity underlying the contract.**

The terms and conditions of the Contract note that the Contract is based on the applicable foreign exchange rates.

**(B) Contract Size and Trading Unit: An acceptable specification of the trading unit would be a contract size that is consistent with customary transactions in the cash market. A designated contract market may opt to set the contract size smaller than that of standard cash market transactions.**

The size of the Contract, which will be determined by the counterparties, is consistent with customary transactions in the market.

**(C) Cash Settlement Procedure: The cash settlement price should be reliable, acceptable, publicly available, and reported in a timely manner as described in paragraphs (c)(3)(iv) and (c)(3)(v) of this appendix C.**

The cash settlement procedure and an explanation of how it is reliable, accepted, publicly available, and reported in a timely manner appears above.

**(D) Pricing Basis and Minimum Price Fluctuation (Minimum Tick): The minimum price increment (tick) should be set a level that is equal to, or less than, the minimum price increment commonly observed in cash market transactions for the underlying commodity. Specifying a futures' minimum tick that is greater than the minimum price increment in the cash market can undermine the risk management utility of the futures contract by preventing hedgers from efficiently establishing and liquidating futures positions that are used to hedge anticipated cash market transactions or cash market positions.**

As agreed between the counterparties, the pricing basis is consistent with customary transactions in the market.

**(E) Maximum Price Fluctuation Limits: Designated contract markets may adopt price limits to: (1) Reduce or constrain price movements in a trading day that may not be reflective of true market conditions but might be caused by traders overreacting to news; (2) Allow additional time for the collection of margins in times of large price movements; and (3) Provide a "cooling-off" period for futures market participants to respond to bona fide changes in market supply and demand fundamentals that would lead to large cash and futures price changes. If price-limit provisions are adopted, the limits should be set at levels that are not overly restrictive in relation to price movements in the cash market for the commodity underlying the futures contract. For broad-based stock index futures contracts, rules should be adopted that coordinate with New York Stock Exchange ("NYSE") declared Circuit Breaker Trading Halts (or other market coordinated Circuit Breaker**

**mechanism) and would recommence trading in the futures contract only after trading in the majority of the stocks underlying the index has recommenced.**

As agreed between the counterparties.

**(F) Last Trading Day: Specification of the last trading day for expiring contracts should be established such that it occurs before publication of the underlying third-party price index or determination of the final settlement price. If the designated contract market chooses to allow trading to occur through the determination of the final settlement price, then the designated contract market should show that futures trading would not distort the final settlement price calculation.**

The last trading day is the Fixing Date, when the difference between the prevailing market exchange rate and the agreed upon exchange rate is calculated.

**(G) Trading Months: Trading months should be established based on the risk management needs of commercial entities as well as the availability of price and other data needed to calculate the cash settlement price in the specified months. Specification of the last trading day should take into consideration whether the volume of transactions underlying the cash settlement price would be unduly limited by occurrence of holidays or traditional holiday periods in the cash market. Moreover, a contract should not be listed past the date for which the designated contract market has access to use a proprietary price index for cash settlement.**

The contract will be entered into on the Trade Date, the settlement price will be determined on the Fixing Date, and the settlement payments will be made on the Settlement Date. As is common with non-deliverable forwards, these dates will be set by the individual counterparties.

**(H) Speculative Limits: Specific rules and policies for speculative position limits are set forth in part 150 and/or part 151, as applicable, of the Commission's regulations.**

None required by Parts 150 or 151.

**(I) Reportable Levels: Refer to § 15.03 of the Commission's regulations.**

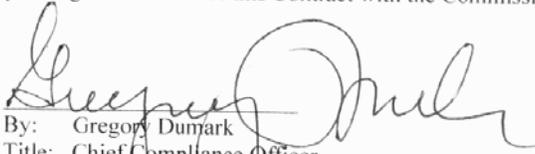
BSEF will adhere to the applicable reporting levels set forth in § 15.03 of the Commission's regulations.

**(J) Trading Hours: Should be set by the designated contract market to delineate each trading day.**

The Contract is traded twenty-four hours a day (00:01 – 24:00) (ET), Sunday to Friday.

CERTIFICATIONS PURSUANT TO SECTION 5c OF THE COMMODITY EXCHANGE  
ACT, 7 U.S.C. §7A-2 AND COMMODITY FUTURES TRADING COMMISSION  
REGULATION 40.2, 17 C.F.R. §40.2

I hereby certify that: 1) the "Foreign Exchange: Non-Deliverable Forward Contract" complies with the Commodity Exchange Act, 7 U.S.C. §1 *et seq.* and regulations thereunder; and 2) concurrent with this submission, Bloomberg SEF LLC posted on its website: (a) a notice of pending certification of this Contract with the Commission; and (b) a copy of this submission.



By: Gregory Dumark  
Title: Chief Compliance Officer  
Date: September 29, 2013

**Attachment A**  
*Terms and Conditions*

[see attached]

# Bloomberg SEF LLC

## Foreign Exchange: Non-Deliverable Forward Contract Specifications

<b>Contract Overview</b>	A <b>non-deliverable forward (NDF)</b> is an outright forward in which counterparties settle the difference between the contracted NDF price or rate and the prevailing spot price or rate on an agreed notional amount.
<b>Reference Currency</b>	<u>Non-deliverable currency</u> <ul style="list-style-type: none"><li>• BRL Brazilian Real</li><li>• ARS Argentine Peso</li><li>• CNY Chinese Renminbi</li><li>• IDR Indonesian Rupiah</li><li>• INR Indian Rupee</li><li>• KRW South Korean Won</li><li>• MYR Malaysian Ringgit</li><li>• PHP Philippine Peso</li><li>• TWD Taiwan Dollar</li><li>• VND Vietnamese đồng</li><li>• EGP Egyptian pound</li><li>• RUB Russian ruble</li><li>• KZT Kazakh tenge</li><li>• CLP Chilean Peso</li><li>• COP Colombian Peso</li><li>• PEN Peruvian nuevo sol</li><li>• UAH Ukrainian hryvnia</li><li>• NGN Nigerian naira</li><li>• GHS Ghanaian cedi</li><li>• PKR Pakistani rupee</li></ul>
<b>Settlement Currency</b>	See currency list below
<b>Quoting Convention and Minimum Increment</b>	Notional amount, as agreed by counterparties
<b>Minimum Size</b>	Notional amount, as agreed by counterparties
<b>Notional Currency</b>	Currency in which contract size is expressed in
<b>Trading Conventions</b>	Buy or Sell which refers to the contract size expressed in notional currency
<b>Forward Rate</b>	Currency Exchange rate expressed as the amount of Reference currency per unit of Settlement currency
<b>Trade Date</b>	The date on which parties enter into the contract
<b>Settlement Date</b>	Specified settlement or payment date
<b>Fixing Date</b>	The date at which the difference between the prevailing market exchange rate and the agreed upon exchange rate is calculated.
<b>Settlement Procedure</b>	Bilateral settlement performed in settlement currency based on the exchange rate published by sources set forth in Attachment B hereto.
<b>Trading Hours</b>	00:01 -24:00 Sunday-Friday Eastern Time
<b>Clearing Venue</b>	Bilateral
<b>Block Size</b>	As set forth in Appendix F to Part 43 of the CFTC Regulations.
<b>Speculative Limits</b>	As set in Part 151 of the CFTC Regulations
<b>Reportable Levels</b>	As set in CFTC Regulation 15.03

# Bloomberg SEF LLC

## Currency list:

AED UAE Dirham	GMD Gambian Dalasi	NID New Iraqi Dinar
AFN Afghanistan Afghani	GNF Guinea Franc	NIO Nicaragua Cordoba
ALL Albanian Lek	GTQ Guatemala Quetzal	NLG Dutch Guilder
AMD Armenia Dram	GYD Guyana Dollar	NOK Norwegian Krone
ANG Neth. Ant. Guilder	HKD Hong Kong Dollar	NPR Nepalese Rupee
AOA Angolan Kwanza	HNL Honduras Lempira	NZD New Zealand Dollar
ARS Argentine Peso (NDF)	HRK Croatia Kuna	OMR Omani Rial
ARS Argentine Peso	HTG Haiti Gourde	PAB Panamanian Balboa
AUD Australian Dollar	HUF Hungarian Forint	PEN Peruvian New Sol
AWG Aruban Guilder	IDR Indonesian Rupiah (NDF)	PGK Papua N.G. Kina
BAM Bosnia-Herze Convrt Mrka	ILS Israeli Shekel	PHP Philippines Peso (NDF)
BBD Barbados Dollar	INR Indian Rupee (NDF)	PKR Pakistani Rupee
BDT Bangladesh Taka	ISK Iceland Krona	PLN Polish Zloty
BGN Bulgarian Lev	JMD Jamaica Dollar	PTE Portuguese Escudo
BHD Bahraini Dinar	JOD Jordanian Dinar	PYG Paraguay Guarani
BIF Burundi Franc	JPY Japanese Yen	QAR Qatari Riyal
BMD Bermudian Dollar	KES Kenyan Shilling	ROL Romanian Leu
BND Brunei Dollar	KGS Kyrgyzstan Som	RON New Romanian Leu
BOB Bolivian Boliviano	KHR Cambodia Riel	RSD Serbian Dinar
BRL Brazilian Real (NDF)	KMF Comoros Franc	RUB Russian Ruble (NDF)
BSD Bahamas Dollar	KRW South Korean Won (NDF)	RWF Rwanda Franc
BWP Botswana Pula	KWD Kuwaiti Dinar	SAR Saudi Riyal
BYR Belarus Ruble	KYD Cayman Islands Dollar	SBD Solomon Is. Dollar
BZD Belize Dollar	KZT Kazakhstan Tenge	SCR Seychelles Rupee
CAD Canadian Dollar	LAK Laos Kip	SDD Sudanese Dinar
CDF Congolese Franc	LBP Lebanese Pound	SDG New Sudanese Pound
CHF Swiss Franc	LKR Sri Lankan Rupee	SDP Old Sudanese Pound
CLF Chilean UF	LTL Lithuanian Litas	SEK Swedish Krona
CLP Chilean Peso	LVL Latvian Lats	SGD Singapore Dollar
CNY China Renminbi (NDF)	MAD Moroccan Dirham	SIT Slovenia Tolar
COP Colombian Peso	MDL Moldova Leu	SKK Slovakia Koruna
CRC Costa Rican Colon	MGA Malagascy Ariary	SLL Sierra Leone Leone
CVE Cape Verde Escudo	MKD Macedonia Denar	SOS Somali Shilling
CZK Czech Koruna	MMK Myanmar Kyat	SRD Suriname Dollar
DJF Djibouti Franc	MNT Mongolian Togrog	SSP South Sudanese Pound
DKK Danish Krone	MOP Macau Pataca	STD Sao Tome Dobra
DOP Dominican Repb.	MRO Mauritania Ouguiya	SVC El Salvador Colon
DZD Algerian Dinar	MUR Mauritius Rupee	THB Thai Baht
EGP Egyptian Pound (NDF)	MVR Maldives Rufiyaa	THO Thai Baht Onshore
ERN Eritrean Nakfa	MWK Malawi Kwacha	TJS Tajikistan Somoni
EUR Euro	MXN Mexican Peso	TND Tunisian Dinar
FJD Fiji Dollar	MYR Malaysian Ringgit (NDF)	TOP Tonga Pa'Anga
GBP British Pound	MZM Mozambique Metical	TRY Turkish Lira
GEL Georgia Lari	MZN New Mozambique Metical	TTD Trinidad/Tobago Dol
	NGN Nigeria Naira (NDF)	TWD Taiwan Dollar (NDF)

# Bloomberg SEF LLC

TZS Tanzanian Shilling

UAH Ukraine Hryvnia (NDF)

UDI Mexican UDI

UGX Ugandan Shilling

USD US Dollar

USDCLF CHILEAN UNIDAD SP  
x10000

UYU Uruguay Peso

UZS Uzbekistan Sum

VEE Venezuela Essential Rate

VEF Venezuelan Bolivar

VND Vietnamese Dong (NDF)

VUV Vanuatu Vatu

WST Samoa (West) Tala

XAF CFA Franc Beac

XCD East Caribbean Dollar

XDR Special Drawing Rights

XOF CFA Franc Bceao

XPF Pacific Island Franc

XSU Sucre

YER Yemeni Rial

ZAR S. African Rand

ZMK Zambian Kwacha

ZMW Zambian Kwacha (NDF)

ZWR Zimbabwe Dollar

**Attachment B**  
*Exchange Rate Sources*

<b>Currency</b>	<b>Primary Fixing Source</b>	<b>Description</b>	<b>Secondary Fixing Source</b>	<b>Description</b>
Brazilian Real (BRL)	BRL PTAX	The BRL PTAX Rate is published at approximately 6:00 PM São Paulo time on the Valuation Date. The BZFXPTAX Index refers to the average rate displayed by Brazil's Central Bank under the transaction PTAX800, in the SISBACEN (Central Bank System), regarding the notation 220-USD (moeda 220 - Dolar dos Estados Unidos).	EMTA BRL Industry Survey Rate (BRL 12)	The EMTA BRL Industry Survey Rate is determined pursuant to the EMTA BRL Industry Survey Rate Methodology dated March 1, 2004.
Argentine Peso (ARS)	EMTA ARS Industry Survey Rate	The EMTA ARS Industry Survey Rate resulting from the EMTA ARS Industry Survey Rate Methodology dated as of January 2, 2003, is available <u>only</u> on a Business Day in both Buenos Aires and New York City. This rate quotation appears on EMTA's website, <a href="http://www.emta.org">http://www.emta.org</a> .	EMTA ARS Indicative Survey Rate	The EMTA ARS Industry Survey Rate resulting from the EMTA ARS Industry Survey Rate Methodology dated as of January 2, 2003, is available <u>only</u> on a Business Day in both Buenos Aires and New York City.
Chinese Renminbi (CNY)	CNY SAEC	The CNY SAEC (CNY01) Rate is published at approximately 9:15 a.m., Beijing time on	SFEMC CNY Indicative Survey Rate	The SFEMC CNY Indicative Survey Rate is determined

		<p>the Valuation Date. This is the daily CNY fixing price released by China Foreign Exchange Trading System. In the interbank market, the fluctuation should not exceed +/-1% of the average price. The price of this index starts from Jan 4,2006, when China introduced OTC trading system in interbank currency market. For more historical prices, please refer to HP of CYCFUSDP Index.</p>		<p>pursuant to the SFEMC CNY Indicative Survey Rate Methodology dated December 1, 2004.</p>
<p>Indonesian Rupiah (IDR)</p>	<p>IDR VWAP</p>	<p>The IDR VWAP (IDR03) Rate is published at approximately 11:30 a.m., Singapore time, on the Valuation Date. As of 6th Aug 2013, the Association of Banks Singapore's (ABS) IDR Spot FX benchmark transitions from a surveyed benchmark to a traded benchmark. It will be changed from a trimmed arithmetic mean of submissions contributed by a panel of banks (Contributor Banks) to a rate based on the Volume Weighted Average Price</p>	<p>SFEMC IDR Indicative Survey Rate</p>	<p>The SFEMC IDR Indicative Survey Rate is determined pursuant to the SFEMC IDR Indicative Survey Rate Methodology dated December 1, 2004.</p>

		(VWAP) of actual interbank transactions.		
Indian Rupee (INR)	INR RBIB	The INR RBIB (INR01) Rate is published at approximately 12:30 p.m. Mumbai time on the Valuation Date. The Rupee Reference Rate is the rate based on 12.00 noon dollar-rupee rates offered by various banks in Mumbai.	SFEMC INR Indicative Survey Rate	The SFEMC INR Indicative Survey Rate is determined pursuant to the SFEMC INR Indicative Survey Rate Methodology dated December 1, 2004.
South Korean Won (KRW)	KRW KFTC18	The KRW KFTC18 (KRW02) Rate is published at approximately 3:30 p.m. Seoul time on the Valuation Date. The basic exchange rate of the Korean won against the US dollar is determined as the transaction volume-weighted average of the rates applied in daily transactions between foreign exchange banks brokered through Seoul Money Brokerage Services, Ltd.(SMBS) and another brokerage house, and is announced at 3:00 pm every business day.	SFEMC KRW Indicative Survey Rate	The SFEMC KRW Indicative Survey Rate is determined pursuant to the SFEMC KRW Indicative Survey Rate Methodology dated December 1, 2004.
Malaysian	MYR ABS	The MYR ABS	SFEMC MYR	The SFEMC

Ringgit (MYR)		(MYR01) Rate is published at approximately 11:30 a.m. Singapore time on the Valuation Date. Published by the Central Bank of Malaysia (Bank Negara)	Indicative Survey Rate	MYR Indicative Survey Rate is determined pursuant to the SFEMC MYR Indicative Survey Rate Methodology dated July 15, 2005.
Philippine Peso (PHP)	PHP PDSPESO	The PHP PDSPESO (PHP06) Rate is published at approximately 11:30 a.m., Manila time, on the Valuation Date. Produced by the Bankers Association of Philippines.	The SFEMC PHP Indicative Survey Rate is determined pursuant to the SFEMC PHP Indicative Survey Rate Methodology dated December 1, 2004.	SFEMC PHP Indicative Survey Rate
Taiwan Dollar (TWD)	TWD TAIFX1	The TWD TAIFX1 Rate is published at approximately 11:00 a.m. Taipei time on the Valuation Date by Taipei Forex Inc.	SFEMC TWD Indicative Survey Rate	The SFEMC TWD Indicative Survey Rate is determined pursuant to the SFEMC TWD Indicative Survey Rate Methodology dated December 1, 2004.
Vietnamese đồng (VND)	VND	The Association of Banks Singapore's (ABS)		
Egyptian pound (EGP)	EGP FEMF	Published by Central Bank of Egypt Treasury. Rates are updated only when there are FX Spot transactions among the 39	EMTA EGP Indicative Survey Rate	The EMTA EGP Indicative Survey Rate is determined pursuant to the EMTA EGP Indicative

		participating banks.		Survey Rate Methodology dated as of May 24, 2010.
Russian ruble (RUB)	RUB CME-EMTA	The RUB CME-EMTA Ruble Rate is determined pursuant to the Chicago Mercantile Exchange / EMTA, Inc. Daily Russian Ruble Per U.S. Dollar Reference Rate Methodology Effective June 16, 2005.	EMTA RUB Indicative Survey Rate	The EMTA RUB Indicative Survey Rate is determined pursuant to the EMTA RUB Indicative Survey Methodology effective June 16, 2005.
Kazakh tenge (KZT)	KZT KASE	The KZT KASE Rate is published by the Kazakhstan Stock Exchange Inc. at approximately 11:00 am, Almaty, time.	EMTA KZT Indicative Survey Rate	The EMTA KZT Indicative Survey Rate is determined pursuant to the EMTA KZT Indicative Survey Methodology effective March 16, 2009.
Chilean Peso (CLP)	CLP DÓLAR OBS	Chilean Observed Dollar Exchange Rate (Dolar Observado) - Chilean Central Bank Rates are published daily for operations settled in the prior business day.	EMTA CLP Indicative Survey Rate	The EMTA CLP Indicative Survey Rate is determined pursuant to the EMTA CLP Indicative Survey Rate Methodology dated as of August 1, 2006.
Colombian Peso (COP)	COP TRM	The Market Representative Exchange Rate (Tasa Representativa del Mercado) states the daily exchange rate		

		in the Colombian market, settled in the previous business day. It corresponds to the arithmetic average of the average weighed bid and offer rates of interbank and transfer operations, completed by authorized market intermediaries. The Superintendencia Financiera of Colombia is obligated by law (Article 80 of the Exchange Regulation - Board of Directors of the Central Bank) to calculate and publish the TRM.		
Peruvian Nuevo sol (PEN)	PEN INTERBANK AVE	The data required to calculate this rate are derived from the interbank market transacted over ICAP Datatec and published by Superintendencia de Banca Peru.	EMTA PEN Indicative Survey Rate	The EMTA PEN Indicative Survey Rate is determined pursuant to the EMTA PEN Indicative Survey Rate Methodology dated as of August 1, 2006
Ukrainian Hryvnia (UAH)	EMTA UAH Industry Survey Rate	The EMTA UAH Industry Survey Rate is posted on Thomson Reuters Screen EMTAUAHFIX Page at approximately 11:30 am, Kiev Time.	EMTA UAH Indicative Survey Rate	The EMTA UAH Indicative Survey Rate is determined pursuant to the EMTA UAH Indicative Survey Methodology effective March 16,

				2009.
Nigerian Naira (NGN)	NGN FMDA	FMDA - Financial Mkt	EMTA NGN Indicative Survey Rate	The EMTA NGN Indicative Survey Rate is determined pursuant to the NGN Indicative Survey Rate Methodology dated as of December 27, 2010.
Ghanaian Cedi (GHS)	GHS ICAP	The GHS ICAP rate (GHS01) is determined by ICAP Broking Services South Africa (Pty) Ltd. not later than 1:00 p.m., Accra time, based on a poll of onshore FX dealers.	EMTA GHS Indicative Survey Rate	The EMTA GHS Indicative Survey Rate is determined pursuant to the GHS Indicative Survey Rate Methodology dated as of May 9, 2012.
Pakistani Rupee (PKR)	PKR SBPK	The PKR SBPK Rate is published at approximately 2:30 pm, Karachi time, on the Valuation Date by State Bank of Pakistan	SFEMC PKR Indicative Survey Rate	The SFEMC PKR Indicative Survey Rate is determined pursuant to the SFEMC PKR Indicative Survey Rate Methodology dated as of July 14, 2008.

**Bloomberg Fixing Source BFIX:**

The Bloomberg FX Fixing rates (“BFIX”) are fixed and published every 30 minutes on the hour and half-hour (liquidity permitting). The BFIX prices are created by taking a short-term Time-Weighted Average Price (TWAP) of the geometric mid-rates of Bloomberg Generic (BGN) prices leading up to and following the fixing time.

By using a short-term TWAP to create the fixing, it ensures that BFIX rates are unsusceptible to spikes and manipulations in the market at fixing time. The length of time used in the TWAP varies from currency to currency, and may in fact vary over time, based on the average tick

arrival frequency of the specific currency pair. By using the geometric average to calculate mid-rates, it ensures that BFIX prices are perfectly invertible (e.g., the USDEUR fix is exactly 1 / EURUSD fix). BFIX prices are published on the BLOOMBERG PROFESSIONAL(R) service within 15 seconds of the fixing time.

A linear time-weighted average of quotes is used leading up to the fixing time and for a short time after the fix. For major currencies, this linear TWAP starts eleven seconds before the fix and then decays for six seconds after the fix. For less liquid currencies, the approaching side of the TWAP envelope might be longer than eleven seconds, depending on the quoting frequency of the specific currency pair. The decay after the fix time is always six seconds.

BFIX rates are available on BFIX <GO> and throughout the Bloomberg terminal and API.

### Bloomberg **BGN** Reference Price

BGN is a sophisticated pricing algorithm that produces highly accurate bid and ask quotes that are derived from hundreds of quality sources, including indicative and executable price quotes from money-center and regional banks, broker-dealers, inter-dealer brokers, and trading platforms.

The Bloomberg Generic represents Bloomberg's highest-quality FX and Precious Metals rate source and is designed to match market-consensus executable bid/ask rates and to be resistant to manipulation by market participants.

For each currency pair the BGN values are based on FX and Precious Metals rates from a select subset of Bloomberg's more than 1000 price contributors. The specific members of the subset are chosen by an automated data quality and consistency scoring algorithm and reviewed periodically. No contributor knows whether or not their prices are included in any BGN set of input prices. These input prices are run through Bloomberg's proprietary blending algorithm which automatically mitigates the effect of outlier quotes and creates a market consensus bid-ask pair of prices for each currency pair.