

JSE Swap Futures Forum
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Objectives for today

JS≡

History

We have learnt from our mistakes...



Yield-X and j-Note attempted to replicate the OTC market

- Traded on yield as a par instrument with the fixed rate resetting on a daily basis
- Proprietary portfolio-based VaR (Calm™)
- These products were never accepted by the market and were de-listed

G20, Basel III and OTC market regulation;

- a) Forced clearing of standardised OTC instruments;
- b) Increased the need for complementary on-exchange instruments

The uncertainty on (a) in SA created growing interest in (b)

- JSE re-engaged with the market
- The initial design options were based on a notional bond and a forward-starting swaps, both traded as futures.

Product Ideas and Key Design Objectives

The j-Note complexity killed it... but simplicity did not meet market demands



Product Design Objectives

- **Simplicity** – complexity reduces size of potential audience
- **Cash Settled** – reduces the linkage between the product and the derivative
- Should it look and feel like **international products**?
- Product fits within **existing risk management processes** at the JSE and Clearing Members
- Fits within **existing post-trade workflows** at JSE, clearing members, members and clients.

Product Ideas and Engagement

- Product developed late 2013
- Based on very high clients' demand.
- Reviewed various international designs
- Market forums held in Johannesburg and Cape Town late February/March 2014
- Excellent attendance
- Sought input for final design

Initial product design and issues

Simplicity has consequences

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Product 1: Future Based on a Semi-Annual Notional Bond

(uses swap rate as an input)

Product 2: Future Based on a Vanilla Forward Starting Swap

Key issues identified in bilateral consultations;

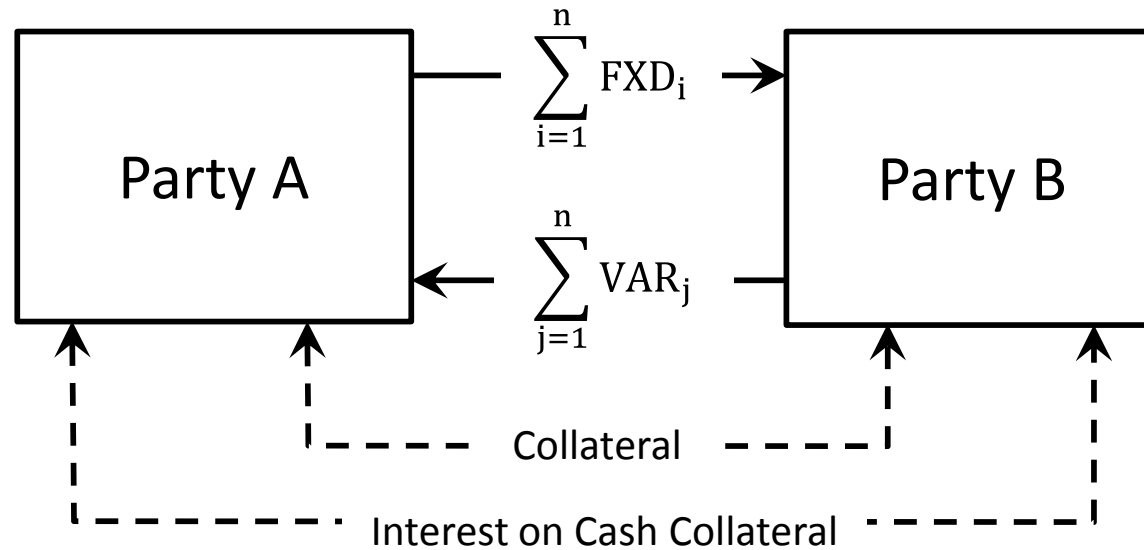
- Rollover risk
- Closeout risk
- Inefficiency of the j-Span IM process
- Imperfect hedge for an OTC swap (i.e. does not replicate an OTC swap)



What our clients want to replicate

Bilateral OTC swap clearing model

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1. Fixed vs Variable payments

2. Subject to bilateral ISDA agreements

- Collateral based on the NPV of the swap (PV of future payments)
- Interest paid on cash collateral

JSE and Eris

And their partners....



Current product;

- Matches OTC Cleared swap cash flows
- Traded as a future.

International research found Eris Exchange's product;

- Similar to our design
- Eris patents pending

Eris engagement

- They licence the product design/formula
- US visit in December 2014
- Partnership with Eris considered beneficial
- **Montreal Exchange** (Sept 2014) and **ICE** (Dec 2014) have licensed the methodology
- **Societe Generale** have bought a stake in Eris in March 2015

Geographical and Asset Class Expansion Interest Rate Swap Futures

Index	Product Name	Currency	Exchange	CCP
LIBOR	Eris Standards Eris Flexes	USD	Eris Exchange	CME Clearing
Euribor	Eris Standard EUR Interest Rate Future	EUR	ICE	ICE
LIBOR	Eris Standard GBP Interest Rate Future	GBP	ICE	ICE
JIBAR	To Be Announced	ZAR	JSE	JSE Clear
CDOR	To Be Announced	CAD	Montréal Exchange	CDCC

Credit Default Swap Futures

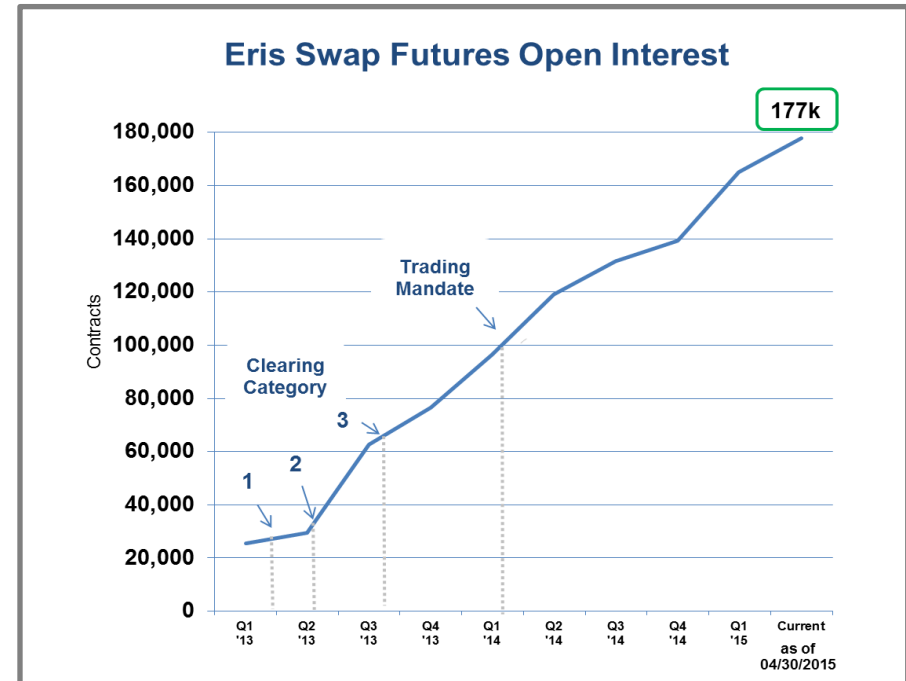
Index	Product Name	Currency	Exchange	CCP
CDX.NA.IG	Eris CDXIG Credit Future (5Y)	USD	ICE Futures US	ICE Clear US
CDX.NA.HY	Eris CDXHY Credit Future (5Y)	USD	ICE Futures US	ICE Clear US
iTraxx Main	Eris iTraxx Main Credit Future (5Y)	EUR	ICE Futures US	ICE Clear US
iTraxx Crossover	Eris iTraxx Crossover Credit Future (5Y)	EUR	ICE Futures US	ICE Clear US

Swap Economics, Futures Benefits

Why this product?



- JSE Ltd
- IRC Market
- ZAR Jibar Interest Rate Swap Futures
- Cleared through JSE Clear
- No ISDA documentation or Gold Standard CSA's to be signed by clients or members
- Standardized contracts, IMM Dated
- Futures through to maturity date
- Methodology replicates:
 - CF's of OTC Cleared Swap. First one worldwide
 - Swap economics by combining component CF's into single futures price
- Product follows RSA standard swap conventions
- Anonymous central limit order book
- Off-Screen trade reporting available
- No minimum block size rule
- Market participants operate within familiar ecosystem and infrastructure



	Standards
Ability to Hold as Futures Through Maturity Date (No Physical Delivery or Early Expiry)	✓
Replicates OTC Swap Economics using the Eris Methodology™	✓
Settles to JSE Zero Swap Curve	✓
Portfolio Margin Offset for Swap Futures	✓
Includes Price Alignment Interest From Inception Through Maturity	✓
Standard Futures Documentation (no ISDAs or Gold Standard CSA's)	✓
Standard Swap Conventions: <ul style="list-style-type: none"> • Fixed Leg: Qtrly, Actual/365, Mod Following, Adjusted, RSA • Floating Leg: Qtrly, Actual/365, 3M LIBOR, Mod Following, Adjusted, RSA 	✓
Reduced Margin for Life of Trade	✓

Products to be launched

Phased Approach



Phase 1: Standard Interest Rate Swap Contracts

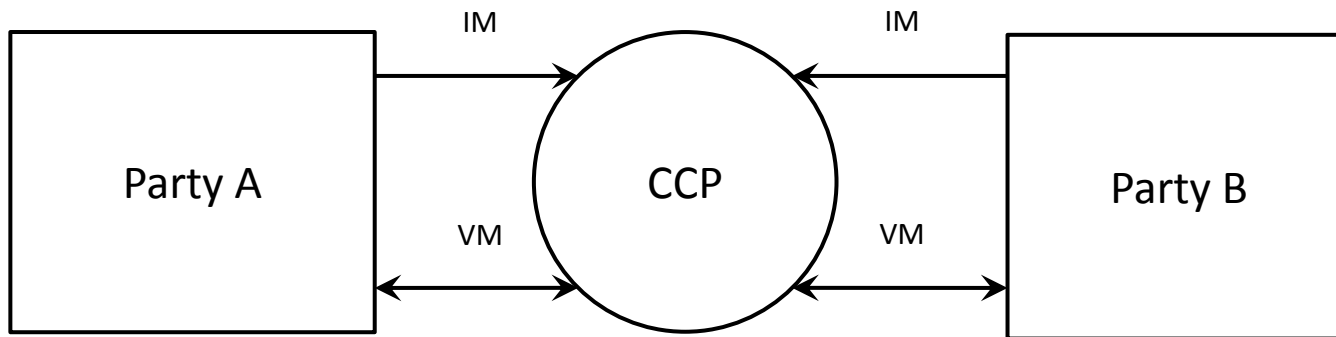
- These contracts follow standard derivative listing principles
- IMM reset dates proposed (TBD)
- Fixed rate set by exchange on day of listing
- Fixed tenors
- Matches OTC Cleared swap cash flows
- Follow standard swap conventions
- Traded as a future

Later: Products licensed under Eris Agreement

- Flexes
- Cross-Currency Swaps (USD/ZAR)
- Credit Default Swaps on South African Single Entities and Baskets

Swap Future across JSE Clear

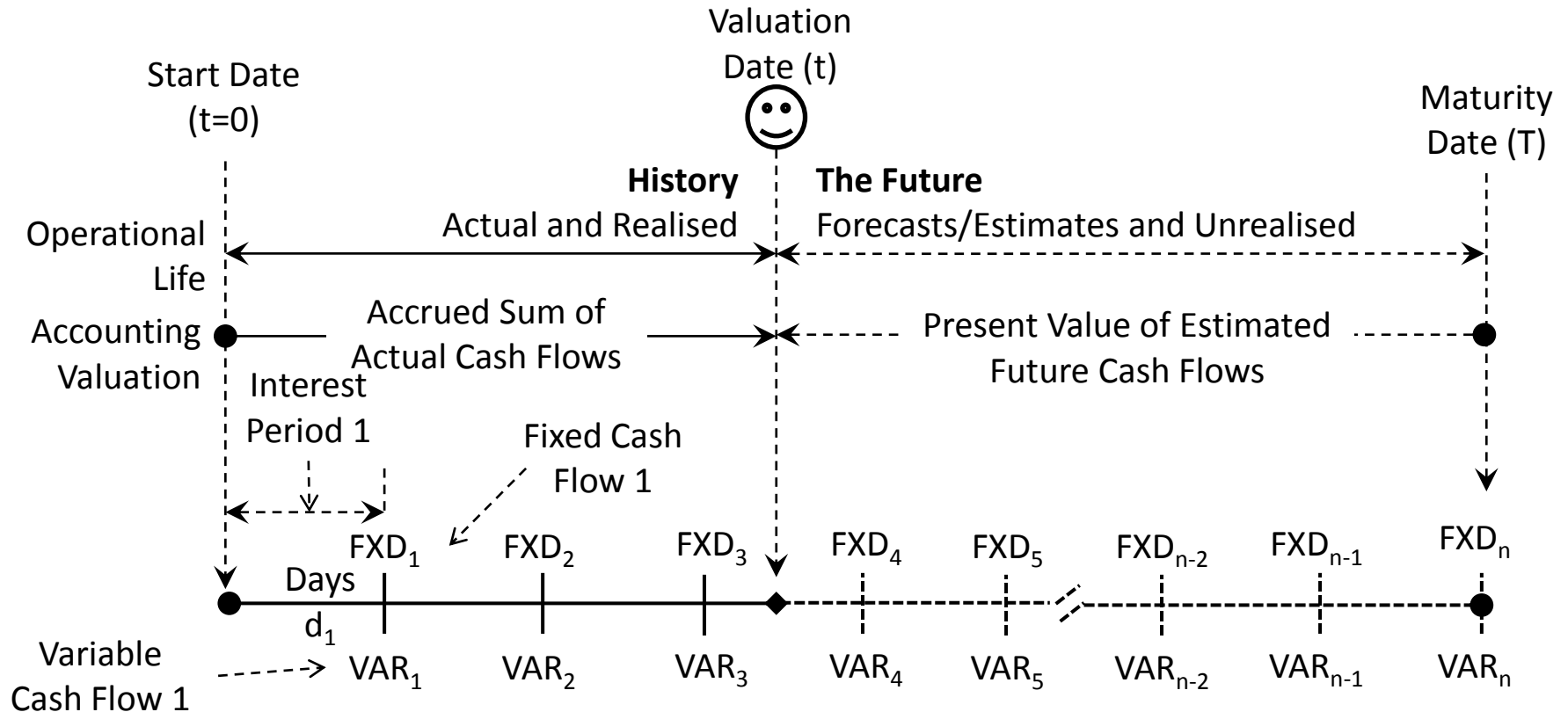
How the product behaves over time...



- IM is based on the risk of the portfolio (Hist VaR)
- VM is based on the Price and encapsulates the three key variables;
 - A. Cumulative net history of Fixed vs Variable cash flows
 - B. PV of the future
 - C. Cumulative net Interest on the implicit collateral (the PV of the future)
- At the expiry of the future $B = 0$ and it is all history...

What the IR Standard Swap Product replicates

The economic life of a swap...



- The economics of a swap is the sum of;
 - Past cash flows
 - PV of future estimated cashflows

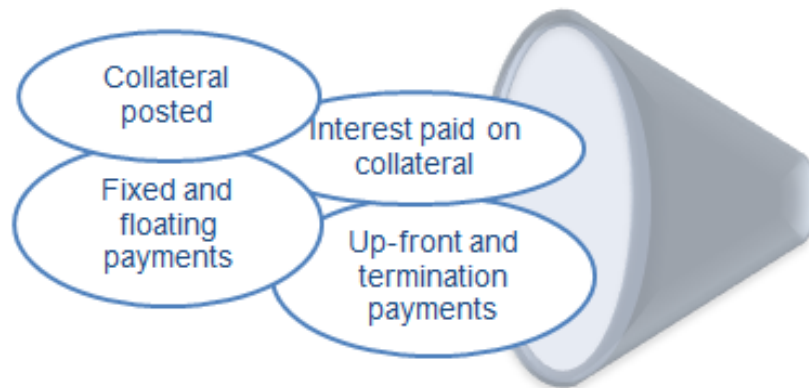
The Product: JSE Swap Futures

What does it do?

JSE

Eris Methodology™: Proprietary design replicates OTC Swap economics

Collateralized IRS OTC Cash Flows



JSE

Variation
Margin

- Contracts can be held until final Maturity as futures contracts (no physical delivery or mandatory early termination)
- JSE Swap curves and models can be used to value JSE Swap Futures

Economics of JSE Swap Futures



$$A + B - C + 100 = \text{JSE Futures Price}$$

A

Swap NPV

B

Historical Fixed and Floating Amounts

C

JSE Eris PAITM

100

Index Price

JSE
Futures Price

Settlement
Value

ABC's

Let's make sense of it all

JSE

A = Swap NPV

- Equivalent to NPV of analogous OTC Swap
- Can be referred to as the Clean Price
- **ONLY** element that changes continuously throughout the trading day
- JSE Standards will trade in terms of A.
- Daily settlement of A is based on the JSE Zero Swap Curve

B = Historical Fixed and Floating Amounts

- Past fixed and floating amounts since inception
- Changes every 3 months, beginning 3 months after the Effective Date
- May be positive or negative
- Calculated and published prior to the market open



ABC's (cont)

Making more sense....



C = JSE Eris PAI

- Synthetic interest on variation margin
- Accrues at SAFEX Overnight Rate
- Analogous to interest on collateral on ZAR 0 threshold CSA (Gold Standard CSA)

100 = Index Price

- Index Price of ZAR 100
- Drastically reduces the likelihood of a negative JSE Futures Price

JSE Futures Price = Settlement Price

- JSE Futures Price represents the All-In Settlement Price
- Often referred to as the Dirty Price
- Participants can book using A (NPV) or JSE Futures Price



Product Specifics

Now we are talking.....



1. **Contract Structure**
2. **Underlying Tenors**
3. **Fixed Rate**
4. **Trading Conventions**
5. **Swap Leg Conventions**

	Fixed Leg	Floating Leg
Reset Frequency	Quarterly	Quarterly
Day Count Convention	Act/365	Actual/365
Currency	ZAR	ZAR
Holiday Calendar	South Africa	South Africa
Business Day Convention	Modified Following with adjustment to period end dates	Modified Following with adjustment to period end dates

Product Specifics (cont)



6. Effective Dates
7. Maturity Date
8. Remaining Tenor
9. Reset Dates
10. First JIBAR Fixing Date
11. Other JIBAR Fixing Date
12. Floating Rate Index
13. Daily Settlement Price
14. Quoting Convention

Trader Execution Reference Information



Key Points to Remember

- Contract Size = ZAR 100,000 notional
- “BUY” = Pay Fixed, “SELL” = Receive Fixed for Standard (NPV) quoted contracts
- Goal: Buy Low (pay a low NPV) and Sell High (receive a high NPV)
- All NPV quoted instruments are from the Buyer’s perspective:
 - Positive NPV: Par Rate > Fixed Rate
 - Negative NPV: Par Rate < Fixed Rate
- Direction of “Premium” in OTC Equivalent Terms:
 - Positive NPV: Buyer/Fixed rate payer Pays premium and Seller/Fixed rate receiver Receives premium
 - Negative NPV: Buyer/Fixed rate payer Receives premium and Seller/Fixed rate receiver Pays premium

BID SIDE:

NPV where

Market Maker Pays Fixed
and End User Receives Fixed

ASK SIDE:

NPV/Rate where

Market Maker Receives Fixed
and End User Pays Fixed

Fees

Trading, Rolling and Maintenance Fees



- **3 Fee types**
 1. Trading Fee = R2 per contract
 2. Rolling Fee = R2 per contract (quarterly)
 3. Maintenance Fee = R2 per contract (quarterly)
- Participants charged 1 & 2 or charged 1 & 3
- **Trading Fee** = Contract Initiation Fee
- **Rolling Fee** = Equivalent to unwinding and replacing with the “active” contract but without having to pay the bid/offer spread quarterly. Simulating a CMS position.
- **Maintenance Fee** = Open Interest Fee. Holding contract till maturity

JSE Maintenance Fees: JSE Standards

Making sense of it....



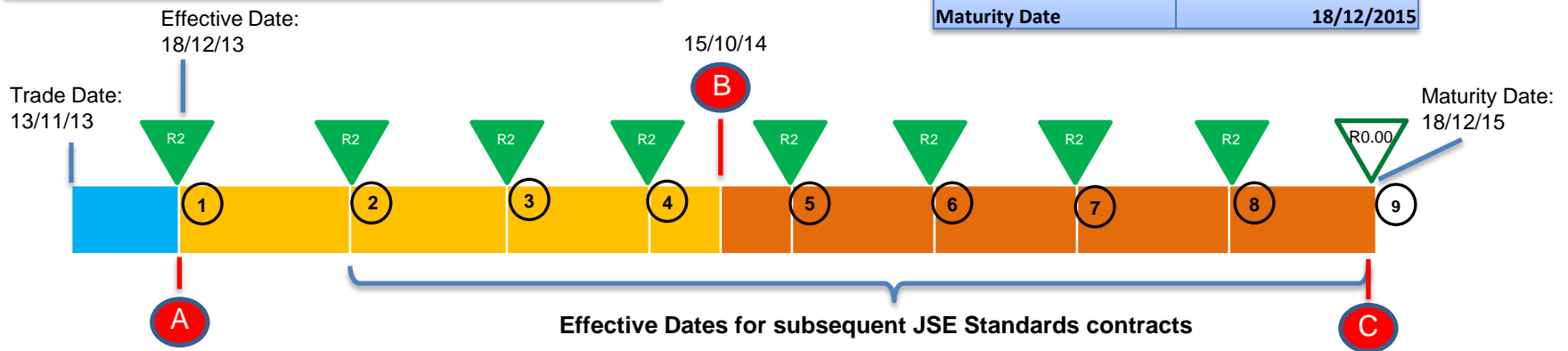
- Maintenance Fees are assessed quarterly for JSE Standards contracts that are held past the Effective Date of each instrument.
- Maintenance Fees are NOT applicable to positions that are closed out or rolled prior to the contract's Effective Date.

Example: Trade Date: 13 Nov, 2013

Buy to Open 100 2Y Dec 2013 JSE Std

Contract Specifications

Trade Date	13/11/2013
Effective Date	18/12/2013
Maturity Date	18/12/2015



Scenario 1:
Sell to Close position on 18/12/13

Total Maintenance Fee = R0

No Maintenance Fee charge for positions closed out, or rolled, on or prior to the Effective Date

Scenario 2:
Sell to Close position on 15/10/14

Total Maintenance Fee = R800

Maintenance Fee assessed on COB of Effective Dates for points 1-4 ($R2 * 4 * 100$ contracts)

Scenario 3:
Hold position until Maturity

Total Maintenance Fee = R1600

Maintenance Fee assessed on COB of Effective Dates for points 1-8 ($R2 * 8 * 100$ contracts)
* No delivery fee at maturity

Timelines

The burning question....

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Finally....

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