

Volmaster FX Payoff-Scripting FX Derivatives

Volmaster FX Pricing Tool

- Deployed as SaaS
- No servers, no maintenance
- Pro Edition, installed client
- Eikon Edition, directly inside Refinitiv Eikon
- Includes Refinitiv premium feeds
- Sabr-based smile with tails management
- SLV and SLV+J models
- Events weights
- Fast and accurate 1st gen exotics pricing
- Payoff-scripted 2nd gen exotics pricing
- Traffic/Rfq
- Historical tools
- API



Payoff-Scripting Technology

Advantages

- No external tools required
- Instruments created directly inside Volmaster App
- Debug and Release modes
- Validate and publish directly to all users
- Integrated with SLV model
- Object-oriented
- Based on Microsoft vb.net language
- Clear and natural representation
- Monte-Carlo path payoff
- Special objects (barriers, etc.)
- Natively compiled
- Automatic handling of numeraire
- Parallelization



Quants Environment

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tion Definitions Enumeration	Type	Default Value	Show to User	Allow user to toggle		Settings	Settings	Settings	Settings	Settings
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Pricing Mode	PriceNotation	Delivery			Strike	Expiry	False		False	DETROIT TO DOTA
PayoffCcy	CcyDefinition	Domestic	AsApplicable	True						
MultiplePayoffs	MultiPayoff	False								
Header	india ayon				Ref.StartDate	Ref.EndDate	Ref.Schedule	Path-Dependent	Method	Time Density
OptionStyle	ExerciseStyle	European			The rest of the sec	The The De Dice	The field feedback	(dur bependern	1120100	THIC DEIMER
Cut/Source	FixingCalendar	Inherit CcyPair	True	True						
	1									
Else	Max(0, Expiry.Spot Max(0, Strike - Exp									
payoff.Cash = Else payoff.Cash = End If	Max(0, Expiry.Spot Max(0, Strike - Exp									
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Definition of Dates

(5) Financial instrument de	esign				- 0
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	merators Vector Ha	ndlers Dates Fixing	Schedules Scalars Vectors Single Triggers Doubl	e Triggers Extrema Holder Choices Bid/Ask Spread Extras	Solver
▲ ▼ Date Name	Date Type	Default Tenor	Validation Condition (boolean statement)	Error Message	Remarks to User
EvalDate	Date	TDY			
ForwardStartDate	Date	1M	ForwardStartDate>=EvalDate	Forward Start Date cannot fall before Eval Date	Forward Start Date
Expiry	Date	1Y	Expiry>ForwardStartDate	Expiry must fall after Forward Start Date	Expiry
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9 Else 10 payoff.Cash 11 End If 12	h = (Max(0, Exp h = (Max(0, K1		Max(0, Expiry.Spot - K2)) / S0 Max(0, K2 - Expiry.Spot)) / S0		
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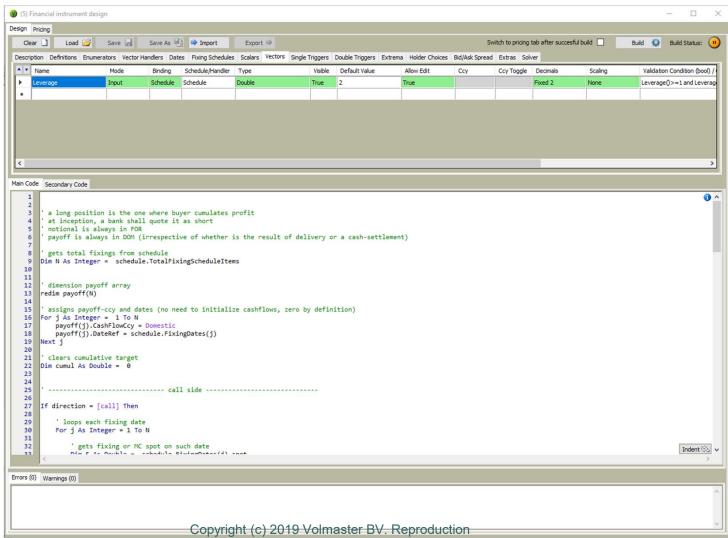


Scalar Variables

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•	Name	Mode	Туре	Visible	Default Value	Allow Edit	Ccy	Ccy Toggle	Decimals	Scaling	Validation Condition (bool) / Co	omputed Value
	Direction	Input	CallPutEnum	True	Call	True						
	Strike	Input	Double	True	Spot*1	True			Inherit CcyPair	None	Strike>0	
	Target	Input	Double	True	10	True			Fixed 2	BigFigure	Target>0	
	PaymentMode	Input	CustomEnum 1	True	[Full_Payment]	True						
111111111111111111111111111111111111111	<pre>' notional is alway ' payoff is always ' gets total fixin Dim N As Integer * ' dimension payoff redim payoff(N) ' assigns payoff-(O For j As Integer * payoff(j).cas)</pre>	ays in FOR in DOM (ags from s schedul f array ccy and da = 1 To N oFlowCcy =	irrespective of whet schedule e.TotalFixingSchedul stes (no need to init	eItems ialize cashf			ttlement)					
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Vector Variables





Pricing

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PayoffType	Delivery/Cash		Delivery				ON	5.47	0.00	-0.81	-1.57	0.21	0.79	2.334	0.00	-0.209
OptionStyle	Exercise Style		European Cut	Source			1W	6.85	0.00	-1.02	-1.96	0.26	0.99	1.241	-2.86	-0.341
Cut/Source	Cut/Fixing Source		NY cut	Agent			2W	7.00	0.00	-1.04	-2.00	0.24	0.94	1.502	-9.22	-0.850
			Date	Tenor			1M	7.37	0.00	-1.10	-2.11	0.20	0.80	1.634	-20.5	-0.638
StartFixingDate	Date		Wed, 04 Dec 19	1M		Initial fixing date	2M	7.61	0.00	-1.20	-2.29	0.21	0.86	1.699	-40.2	-0.495
Expiry	Date		Wed, 04 Nov 20	1Y		Final fixing date	ЗM	7.77	0.00	-1.36	-2.60	0.22	0.96	1.786	-61.9	-0.457
		Mode	Frequency	Fixings			4 M	7.94	0.00	-1.42	-2.70	0.25	1.07	1.834	-83.4	-0.467
Schedule	Fixing Frequency	Simple	Monthly	(12)			6M	8.19	0.00	-1.54	-2.92	0.30	1.29	1.922	-131.8	-0.489
Direction	Call/Put		Call			Call/Put	9M	8.53	0.00	-1.60	-3.03	0.36	1.53	1.944	-209.1	-0.624
Strike	Numeric		108,56			Forward rate	1Y	8.82	0.00	-1.67	-3.13	0.42	1.78	1.849	-268.4	-0.628
Target	Numeric (1BF=1)		10.00	Big Figures		Target profit in big figures	18M	9.03	0.00	-1.70	-3.11	0.47	1.92	1.718	-379.1	-0.634
PaymentMode	TargetRoundingMode		Full Payment	orgingares		Payment Mode	ZY	9.21	0.00	-1.69	-3.07	0.50	2.05	1.734	-521.3	-0.696
Barrier	Numeric		103.13			EKI barrier level	3Y	9.37	0.00	-1.59	-2.78	0.75	2.83	1.853	-823.6	-0.751
Leverage	Numeric		2.00	-		Notional OTM Leverage	4Y 5Y	9.67	0.00	-1.61	-2.72	0.79	3.19	1.918	-1,120.8	-0.782
Notional USD	Amount	USD	24,000,000			Total ITM	7	10.51	0.00	-1.65	-2.54	0.86	3.45	2.029	-2,000.5	-0.855
Notional JPY	Amount	JPY				Total ITM	10Y	11.25	0.00	-1.70	-2.32	0.90	3.86	2.105	-2,739.8	-0.780
		JPT	2,605,440,000 Market Rates	Basis		Total ITM	11.5								1 1	1 1
Rate USD	Rate		1.849	Act/360		(cont 1.863)	10.7			-	1			11 min		<u></u>
Rate JPY	Rate		-0.628	Act/360		(cont -0.641)										
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	e ±0.030					e ±3.5		11	olr	110	-			cal	mas	
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-101.2%		elta		-97.5%	2	e ±845,564 23,388,276 USD Delta										
0.6%			Compute Greeks									<u>er</u>	3F			F
0.070	100,040	-ya (Compute Greeks 	Price Hist	ogram	Vol Distribution						C				



Schedules

First date		Wed, 04 De	ec 19	
Last date		Wed, 04 N	ov 20	
Dates ger		Automa	tic	
Total fixin	-	12		
Notional U	120	24,000,0		
Clear Da	ates 🗋	Baseline Notional 🛛 🏺]	Weighte
Import	Dates 🕱 🜖 🜖	Import Notionals		
	(mou:	se right-dick on the grid to	insert or delete i	tem)
N	Fixing Date	Notional USD	Fixing	Leverage
	1			
1	Wed, 04 Dec 19	2,000,000.00		2.00
2	Fri, 27 Dec 19	2,000,000.00		2.00
3	Tue, 04 Feb 20	2,000,000.00		2.00
4	Wed, 04 Mar 20	2,000,000.00		2.00
5	Thu, 02 Apr 20	2,000,000.00		2.00
6	Thu, 30 Apr 20	2,000,000.00		2.00
7	Thu, 04 Jun 20	2,000,000.00		2.00
8	Thu, 02 Jul 20	2,000,000.00		2.00
9	Tue, 04 Aug 20	2,000,000.00		2.00
10	Fri, 04 Sep 20	2,000,000.00		2.00
11	Fri, 02 Oct 20	2,000,000.00		2.00
12	Wed, 04 Nov 20	2,000,000.00		2.00



Distribution of outcomes

Settings		-			Stats Min: -1,433,478	
Displa	y Premium	Histogra	am Bins 40	-	Distribution of PV O Unadjusted Position sign: Short Avg: 0	
Co	Cy USD	Cutoff P	Prob % 0.5	•	Distribution of NPV (ind. premium) O Numeraire-Adjusted Max: 10,951,999	
Г	USD	amount	-		Distribution of probability of discounted outcomes	
Bin	From	То	Probability			
1	-635,825	-501,247	46.96%			
2	-501,247	-366,669	11.08%		45.00% +	
3	-366,669	-232,091	5.70%			
4	-232,091	-97,512	4.08%		40.00% +	
5	-97,512	37,066	3.40%	1		
6	37,066	171,644	3.04%		35.00% +	
7	171,644	306,222	2.72%			
8	306,222	440,801	2.32%		30.00%	
9	440,801	575,379	2.04%			
10	575,379	709,957	1.89%			
11	709,957	844,535	1.62%		25.00% +	
12	844,535	979,114	1.57%			
13	979,114	1,113,692	1.38%	_	20.00% +	
14	1,113,692	1,248,270	1.33%			
15	1,248,270	1,382,848	1.14%		15.00% +	
16	1,382,848	1,517,427	1.05%			
17	1,517,427	1,652,005	0.96%		10.00% +	
18	1,652,005	1,786,583	0.90%			
19	1,786,583	1,921,161	0.78%		5.00% + .	
20	1,921,161	2,055,740	0.63%			
21	2,055,740	2,190,318	0.60%			L
22	2,190,318	2,324,896	0.53%		0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 4	0
	2,324,896	2,459,474	0.40%	~		
23	at the second second	ability:	99.00%	1		
23 To	tal allocated prob	domey.				



Backward-Induction, Multinomial Lattice

Backward Induction Settings Multinomial Lattice		_
Lattice spot process density:	51 🚖 (nodes)	
Use adaptive density:	2.25 🜲 (power)	
Spot process coverage:	3.25 🜲 (sigmas)	
Correct lattice bias:		_
Lattice numerical precision:	O Single	



Model-dependent forward smile dynamics

	Horizon		Mode	el: Stochast	icLocalVol		Stoch /	Local: 50	/ 50			v fwd smiles O Both Start 🕨 Frames speed 📼 🗣
() 1m vol in 1m) 3m vol in 3m) 6m vol in 6m) 1y vol in 1y t	time time	R	v fwd smile dy educe monte) Convention) Model parai	carlo noise: nal inputs sm			Run Dynamie	cs 孝			
	NY cut - equiva	lent		Conver	ntional		Simplit	fied with sign	nas: 1			
it >	Spot -> Fwd 105.4111 106.2476 107.0908 107.9406 108.7972 109.6605 110.5307	Change % -2.34% -1.57% -0.79% Fwd 0.79% 1.59% 2.40%	Atm 9.53 8.90 8.31 7.78 7.37 7.11 7.08	25 RR -1.45 -1.35 -1.08 -0.71 -0.32 0.00 0.19	25 BF 0.19 0.20 0.22 0.21 0.20 0.21 0.20 0.19	25 SF 0.24 0.23 0.23 0.23 0.22 0.20 0.19	Atm Fwd 9.51 8.88 8.29 7.77 7.36 7.11 7.08	Sigma RR -1.91 -1.76 -1.40 -0.91 -0.41 -0.01 0.25	Sigma BF 0.88 0.86 0.89 0.90 0.87 0.80 0.74	Implied vol [%]	13.96 13.19 12.41 11.64 10.86 10.08	19 41 64 86
										Impli	9.31 8.53 7.76 6.98	

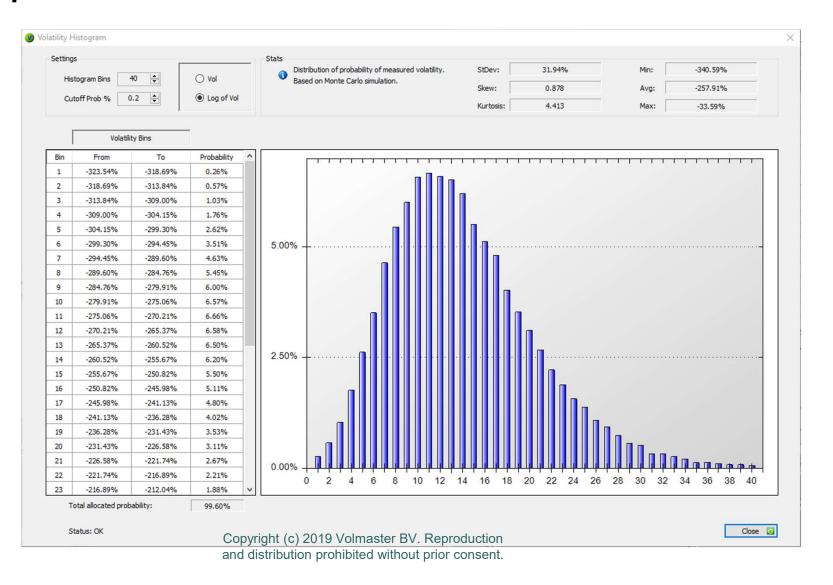


Derivatives on realized volatility

esign Pricing																		
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as of Fri, 01 Nov 19	ccypair USDJPY -	disp	olay ε 1 🗘 st.de	v.	context	New	instrument at inception		Marke	et Data	Advanced	l Correla	ation					
									Vola	tility						Interest Rates		
Option on Reali	zed Vol 🗸 🗸	spt	108.56	3	setti W	ed, 06	Nov 19 prem/pv Wed	l, 06 Nov 19	Cut	NY cut		~	Admir	n 1	15:13	Volmaster	(150un) Volma	aster (500)
Item		0	Value		bel	(1)	Remarks		w.~			- 4		- 4			- 4	
	Type	Qualifier		La	ibel	(!)	Remarks		т	Atm	Spread	25 RR	10 RR	25 BF	10 BF	Rate USD	Swap	Rate JPY
PayoffType	Delivery/Cash		CashSettled						ON	5.47	0.00	-0.81	-1.57	0.21	0.79	2.334	0.00	-0.209
PayoffCcy	Payoff Ccy		USD						1W	6.85	0.00	-1.02	-1.96	0.26	0.99	1.241	-2.86	-0.341
OptionStyle	Exercise Style		European						2W	7.00	0.00	-1.04	-2.00	0.24	0.94	1.502	-9.22	-0.850
CublCauses	Cut Englas Causes		Cut		urce				1M	7.37	0.00	-1.10	-2.11	0.20	0.80	1.634	-20.5	-0.638
Cut/Source	Cut/Fixing Source		NY cut		ent				2M	7.61	0.00	-1.20	-2.29	0.21	0.86	1.699	-40.2	-0.495
StartDate	Date		Date Fri, 01 Nov 19	1	nar DY				ЗM	7.77	0.00	-1.36	-2.60	0.22	0.96	1.786	-61.9	-0.457
									4M	7.94	0.00	-1.42	-2.70	0.25	1.07	1.834	-83.4	-0.467
Expiry	Date		Tue, 04 Feb 20		м				6M	8.19	0.00	-1.54	-2.92	0.30	1.29	1.922	-131.8	-0.489
		Mode	Frequency		ings				9M	8.53	0.00	-1.60	-3.03	0.36	1.53	1.944	-209.1	-0.624
Sched	Fixing Frequency	Simple	Daily	(6	i8)				1Y	8.82	0.00	-1.67	-3.13	0.42	1.78	1.849	-268.4	-0.628
CallPut	Call/Put		Call						18M	9.03	0.00	-1.70	-3.11	0,47	1.92	1.718	-379.1	-0.634
VolStrike	Numeric %		8.000		%				2Y	9.21	0.00	-1.69	-3.07	0.50	2.05	1.734	-521.3	-0.696
AnnualizationFactor	Numeric (Integer)		262						3Y	9.37	0.00	-1.59	-2.78	0.75	2.83	1.853	-823.6	-0.751
PricingMethod	VolMethod		Discrete Sampling						4Y	9.67	0.00	-1.61	-2.72	0.79	3.00	1.918	-1,120.8	-0.782
Notional USD	Amount	USD	1,000,000			1	Per 1% Vol		5Y	9.94	0.00	-1.62	-2.66	0.82	3.19	1.958	-1,423.5	-0.827
			Market Rates	Ba	ISÍS				7Y	10.51	0.00	-1.65	-2.54	0.86	3.45	2.029	-2,000.5	-0.855
Rate USD	Rate		1.786	Act	/360		(cont 1.826)		10Y	11.25	0.00	-1.70	-2.32	0.90	3.86	2.105	-2,739.8	-0.780
Rate JPY	Rate		-0.457	Act	/360		(cont -0.469)		11.5 -			••••••	·····	******		2.2		1 1
Forward	Forward		107.94						10.7							1.5		
Swap	Forward Points		-61.9															
			Market Smile	0	Tut				33.							1.1		
Atm Vol	Atm		7.77	NY	cut				9.5 -							0.5		•••••••••••••••••••••••••••••••••••••••
Butterfly	25d Fly		0.23	NY	cut				82 -							0.0		
Risk Reversal	25d Rev		-1.36	NY	cut					1		:	:	÷				÷ ÷
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56.3%	563,497	Vega	Compute Greeks		rice Histo								-8-1	er				rer
eady			Convrigh	+(c)	20	10	Valmaster	DV/D	nore	duc	tion						aster - All rights r	

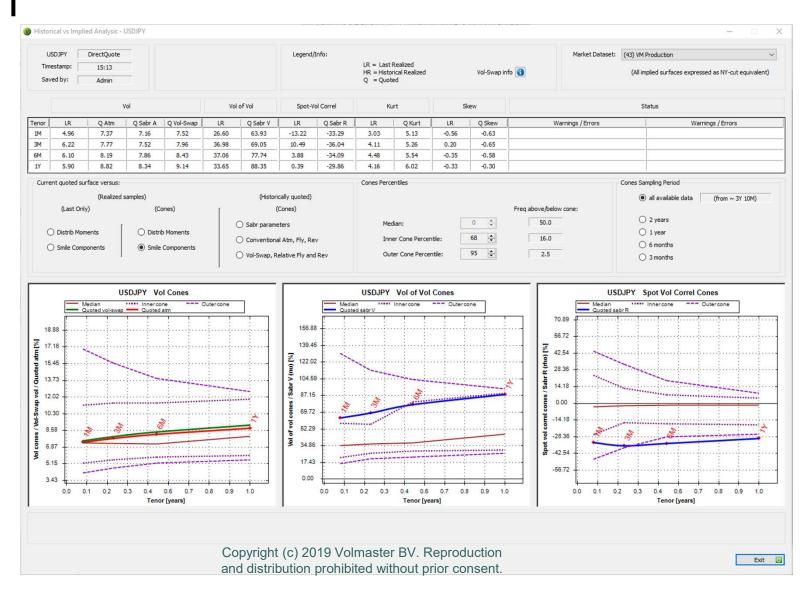


Model-dependent distribution of future volatility





Historically realized vol-of-vol





Solver in action

sign Pricing																
Clear] Load (🎽 Save 🚽 Save As 🛃	Q Inte	erbank grade	~ 1way	62	We Buy 🙀 Mid-M	vikt 🔥 🛛 Ca	librate 🖇	Stocha	sticLocalV	ol	~ 5Y	~	(43) VM Productio	on ~	Reload All
as of Fri, 01 Nov :	19 ccypair USDJPY -	disp	olay ε 1 🔹 st.dev.	contex	t New in	strument at inception		ket Data	Advanced	d Correla	ation					
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Item	Type	Qualifier	Value	Label	(!)	Remarks	T	Atm	Spread	25 RR	10 RR	25 BF	10 BF	Rate USD	Swap	Rate JPY
PayoffType	Delivery/Cash		Delivery				ON		0.00	-0.81	-1.57	0.21	0.79	2.334	0.00	-0.209
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Cut/Source	Cut/Fixing Source		Cut NY cut	Source			2W	7.00	0.00	-1.04	-2.00	0.24	0.94	1.502	-9.22	-0.850
curyburce	Cut/Hxing Source		Date	Agent Tenor			1M	7.37	0.00	-1.10	-2.11	0.20	0.80	1.634	-20.5	-0.638
BarrierStartDate	Date		Tue, 04 Feb 20	3M	St	art Barrier Observation Date	2M	7.61	0.00	-1.20	-2.29	0.21	0.86	1.699	-40.2	-0.495
BarrierEndDate	Date		Thu, 30 Apr 20	6M	-	nd Barrier Observation Date	3М	7.77	0.00	-1.36	-2.60	0.22	0.96	1.786	-61.9	-0.457
Expiry	Date		Wed, 04 Nov 20	14		nal Expiry	4M	7.94	0.00	-1.42	-2.70	0.25	1.07	1.834	-83.4	-0.467
CallPut	Call/Put			11	1000	all/Put	6M	8.19	0.00	-1.54	-2.92	0.30	1.29	1.922	-131.8	-0.489
			Call				9M	8.53	0.00	-1.60	-3.03	0,36	1.53	1.944	-209.1	-0.624
Strike	Numeric		95.94			rike	1Y	8.82	0.00	-1.67	-3.13	0.42	1.78	1.849	-268.4	-0.628
BarrierLevel	Numeric		115.00			arrier level	181		0.00	-1,70	-3.11	0.47	1.92	1.718	-379.1	-0.634
Direction	Up/Down		Up			Down Barrier Direction	2Y	9.21	0.00	-1.69	-3.07	0.50	2.05	1.734	-521.3	-0.696
BarrType	KnockIn/KnockOut		KnockIn		In	/Out Barrier Type	3Y	9.37	0.00	-1.59	-2.78	0.75	2.83	1.853	-823.6	-0.751
Notional USD	Amount	USD	25,000,000				4Y	9.67	0.00	-1.61	-2.72	0.79	3.00	1.918	-1,120.8	-0.782
Notional JPY	Amount	JPY	2,398,500,000				5Y	9.94	0.00	-1.62	-2.66	0.82	3.19	1.958	-1,423.5	-0.827
			Market Rates	Basis			7Y 101	10.51 11.25	0.00	-1.65	-2.54 -2.32	0.86	3.45 3.86	2.029	-2,000.5	-0.855
Rate USD	Rate		1.849	Act/360	1	ont 1.863)	101	11.25	0.00	-1.70	*2.32	0.90	3.00	2.105	-2,739.0	-0.780
Rate JPY	Rate		-0.628	Act/360	(0	ont -0.641)								-		
Forward	Forward		105.88				10.7	+			••••••	•••••		1.8		1
Swap	Forward Points		-268.4				9.9	+						3.1		
			Market Smile	Cut								1		0.5		
Atm Vol	Atm		8.82	NY cut												
Butterfly	25d Fly		0.44	NY cut			12				••••••	•••••		0.0		1
Risk Reversal	25d Rev		-1.70	NY cut			7.4	r						0.5		
-	-							1							-i - i	
Price Greeks Es	ktras							<u> </u>	3 0	<u> </u>	<u> </u>		20	00 03	100 000	13 17 2
	USD					JPY		Valid		Calibr 5Y		, Wa	ming	Valid		Sourced
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	1.10	SD pips	Round solution			P 325.7 JPY pip	ps	1		0	GU	er.			Imas	ter
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We buy	Pay 749,983		mid 🕣 mkt	We buy		y 81.418M		10	OIII					NO	11	
	e ±6,943	-				±753,748		V						0.00		
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Solver to compute fair price

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s of Fri, 01 Nov 19	ccypair USDJPY •	dis	play ε 1 🔹 st.dev.	contex	t New	instrument at inception			Advanced	d Correl	ation					
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Volatility Swap		spt	108.56	sett \	Ned, 06	5 Nov 19 prem/pv Wed, 06 Nov 1	Cut	NY cut		~	Admir	n :	15:13	Volmaster	1510n Volma	ster 150un
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Item	Туре	Qualifier	Value	Label	(!)	Remarks	T	Atm	Spread	25 RR	10 RR	25 BF	10 BF	Rate USD	Swap	Rate JPY
PayoffType	Delivery/Cash		CashSettled				ON	5,47	0.00	-0.81	-1.57	0.21	0.79	2.334	0.00	-0.209
PayoffCcy	Payoff Ccy		USD				1W	6.85	0.00	-1.02	-1.96	0.21	0.99	1.241	-2.86	-0.341
OptionStyle	Exercise Style		European				2W	7.00	0.00	-1.04	-2.00	0.24	0.94	1.502	-9.22	-0.850
			Cut	Source			1M	7.37	0.00	-1.10	-2.11	0.20	0.80	1.634	-20.5	-0.638
Cut/Source	Cut/Fixing Source		NY cut	Agent			2M	7.61	0.00	-1.20	-2.29	0.20	0.86	1.699	-40.2	-0.495
			Date	Tenor			3M	7.77	0.00	-1.36	-2.60	0.21	0.96	1.786	-61.9	-0.457
StartDate	Date		Fri, 01 Nov 19	TDY			4M	7.94	0.00	-1.42	-2.70	0.25	1.07	1.834	-83.4	-0.467
Expiry	Date		Tue, 04 Feb 20	ЗM			6M	8.19	0.00	-1.54	-2.92	0.30	1.29	1.922	-131.8	-0,489
		Mode	Frequency	Fixings			9M	8.53	0.00	-1.60	-3.03	0.36	1.53	1.944	-209.1	-0.624
Sched	Fixing Frequency	Simple	Daily	(68)			17	8.82	0.00	-1.67	-3.13	0,42	1.78	1.849	-268.4	-0.628
QuotedVol	Numeric %		7.978	%			18M	9.03	0.00	-1.70	-3.11	0.47	1.92	1.718	-379.1	-0.634
AnnualizationFactor	Numeric (Integer)		262				2Y	9.21	0.00	-1.69	-3.07	0.50	2.05	1.734	-521.3	-0.696
PricingMethod	VolMethod		Discrete Sampling				3Y	9.37	0.00	-1.59	-2.78	0.75	2.83	1.853	-823.6	-0.751
Notional USD	Amount	USD	1,000,000			Vega 1%	4Y	9.67	0.00	-1.61	-2.72	0.79	3.00	1.918	-1,120.8	-0.782
			Market Rates	Basis			5Y	9.94	0.00	-1.62	-2.66	0.82	3.19	1.958	-1,423.5	-0.827
Rate USD	Rate		1.786	Act/360		(cont 1.826)	71	10.51	0.00	-1.65	-2.54	0.86	3.45	2.029	-2,000.5	-0.855
Rate JPY	Rate		-0.457	Act/360		(cont -0.469)	10Y	11.25	0.00	-1.70	-2.32	0.90	3.86	2.105	-2,739.8	-0.780
Forward	Forward		107.94				11.5	F						22 1 1	1 1	
Swap	Forward Points		-61.9				10.7			-	-	1		11 miles		: . :
			Market Smile	Cut			10.7									
Atm Vol	Atm		7.77	NY cut			9.9	•••••		••••••		·····÷		1.1	· • · · · · • • • · · · · •	·····
Butterfly	25d Fly		0.23	NY cut			9.1							0.5		i
Risk Reversal	25d Rev		-1.36	NY cut								1				
KISK REVEISA	200 KeV		-1.30	INT CUL			8.2			•••••				0.0	1	: :
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	and the second s	5D %	Solve			- JPY %							di -		mas	~1
	e ±1.20											- 5	de-			- FRA
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We buy	Pay 370		mid 🕣 mkt	We buy		Pay 40,162		\$ 10	011	1122				×101	111.	
	e ±12,042				16	e ±1,307,255		V						10.		
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