Volmaster FX
Payoff-Scripting FX Derivatives

Volmaster FX Pricing Tool

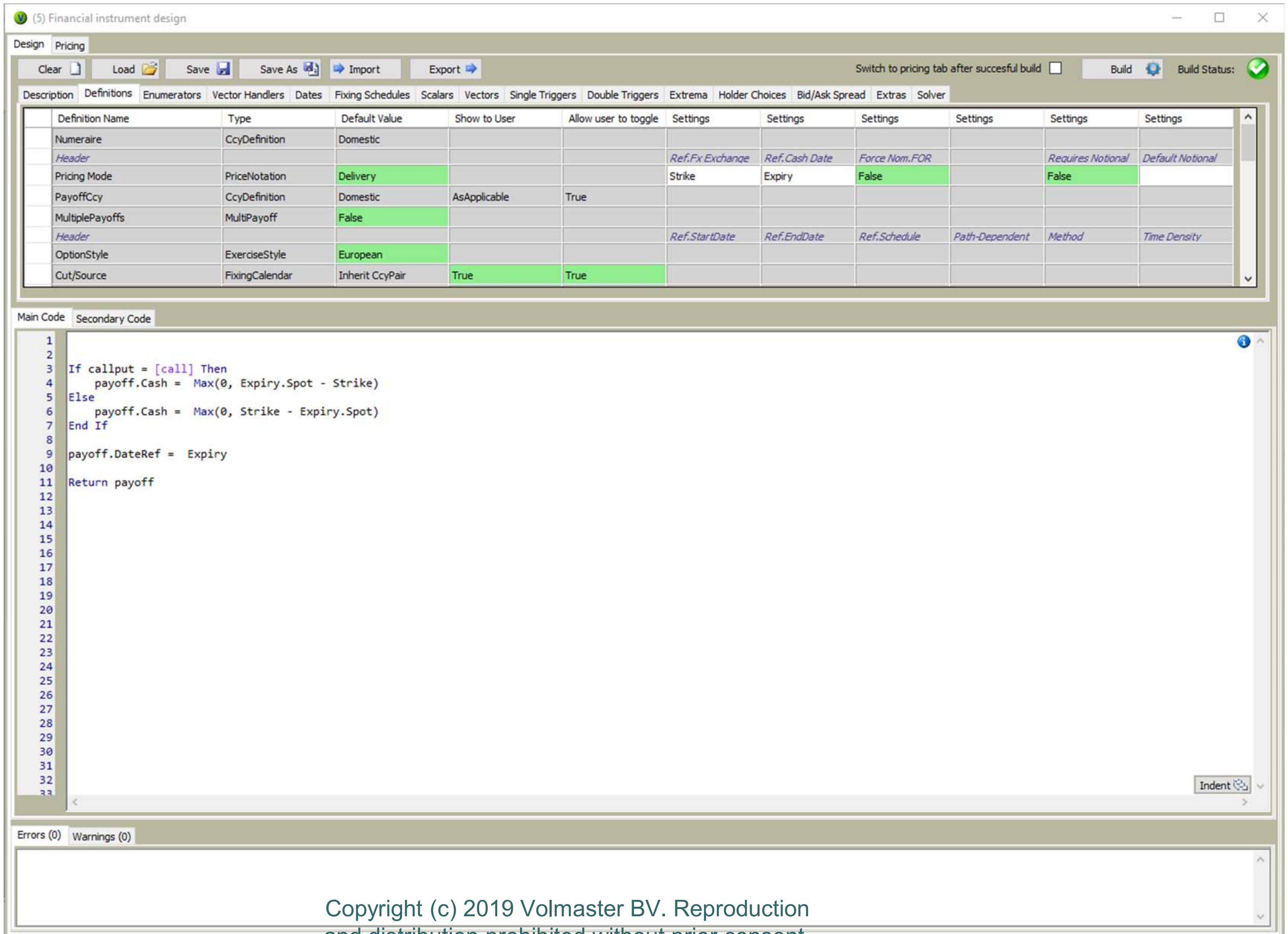
- Deployed as SaaS
- No servers, no maintenance
- Pro Edition, installed client
- Eikon Edition, directly inside Refinitiv Eikon
- Includes Refinitiv premium feeds
- Sabr-based smile with tails management
- SLV and SLV+J models
- Events weights
- Fast and accurate 1st gen exotics pricing
- Payoff-scripted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

Payoff-Scripting Technology

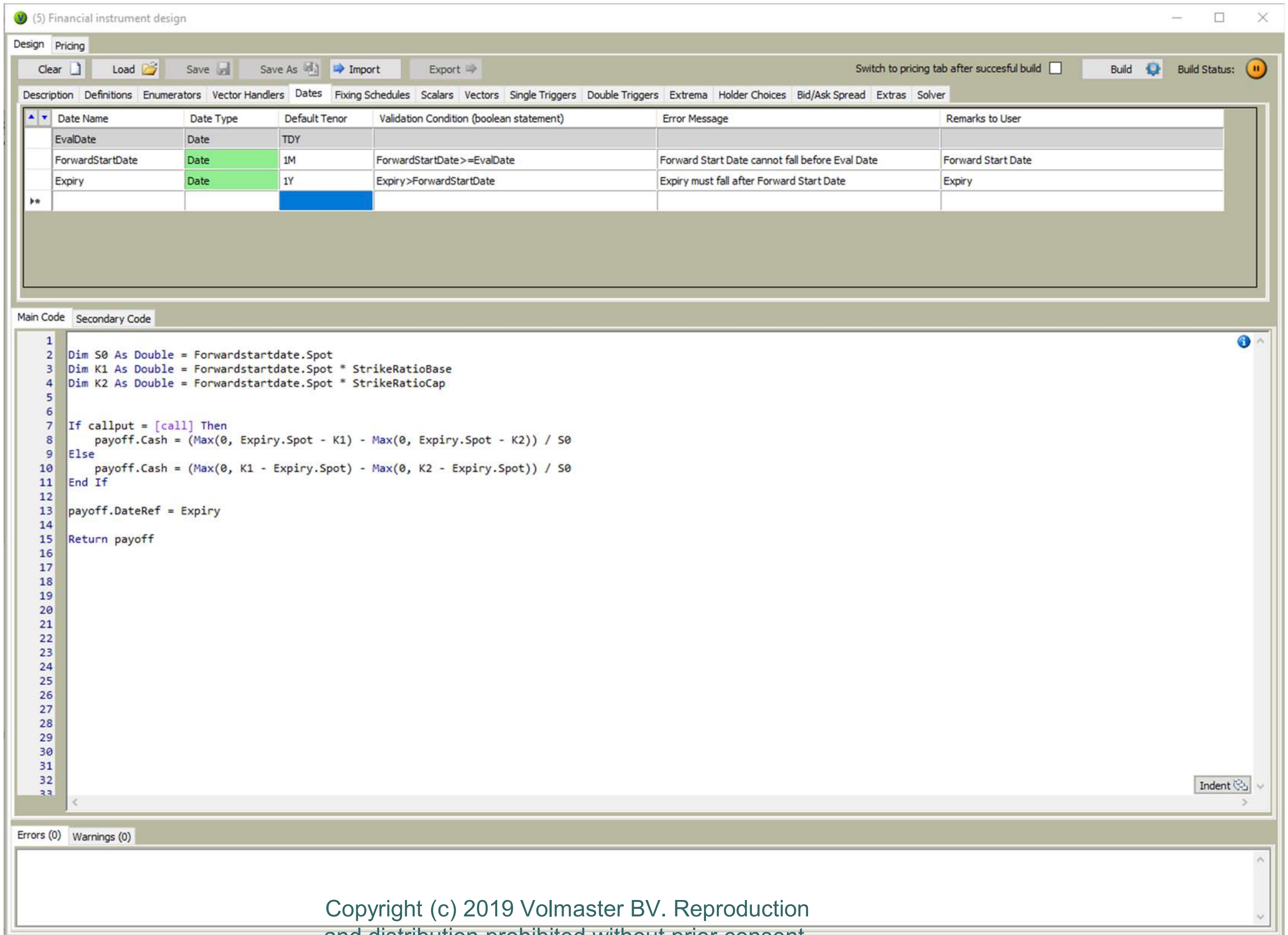
Advantages

- 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

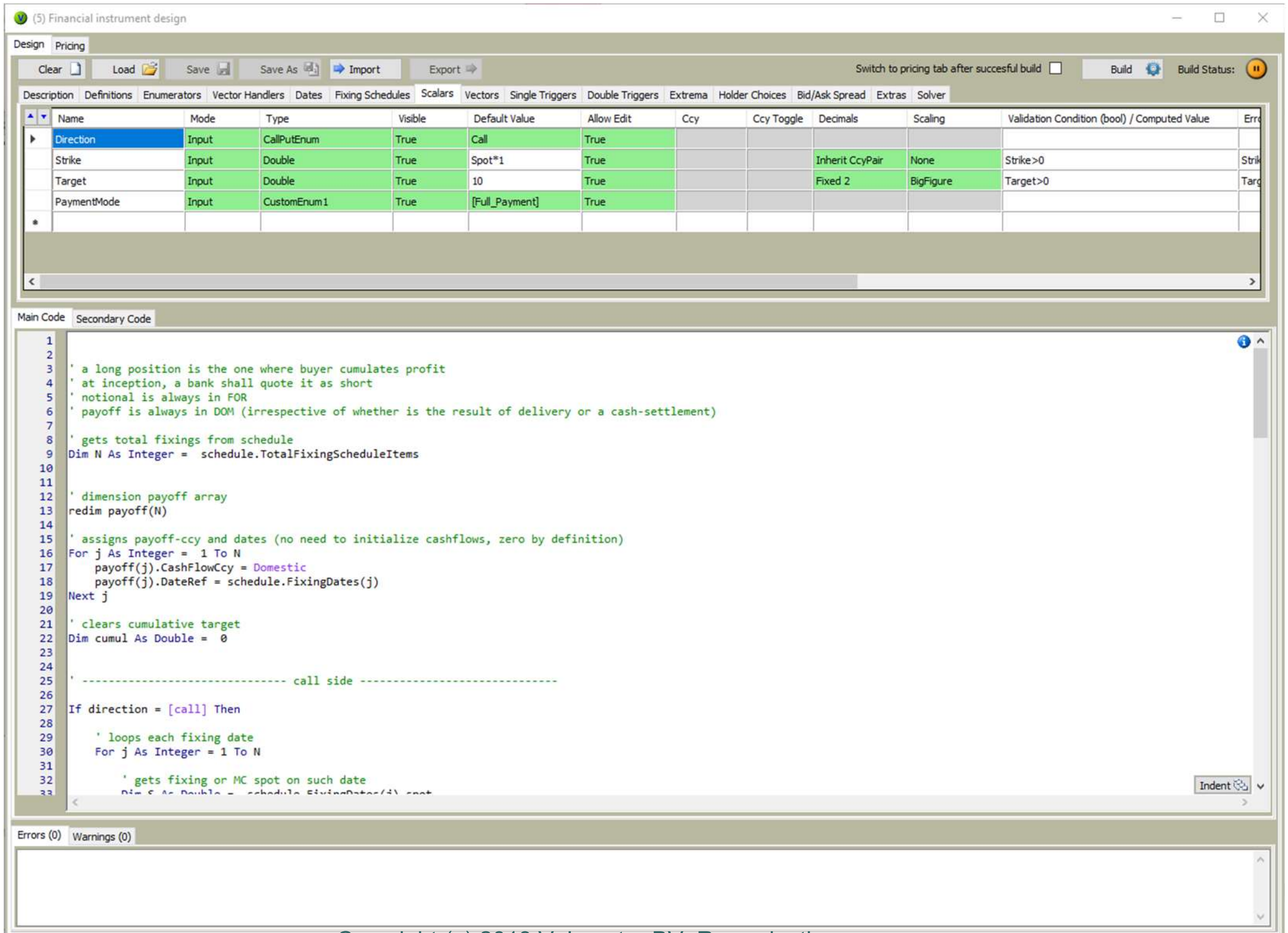
Quants Environment



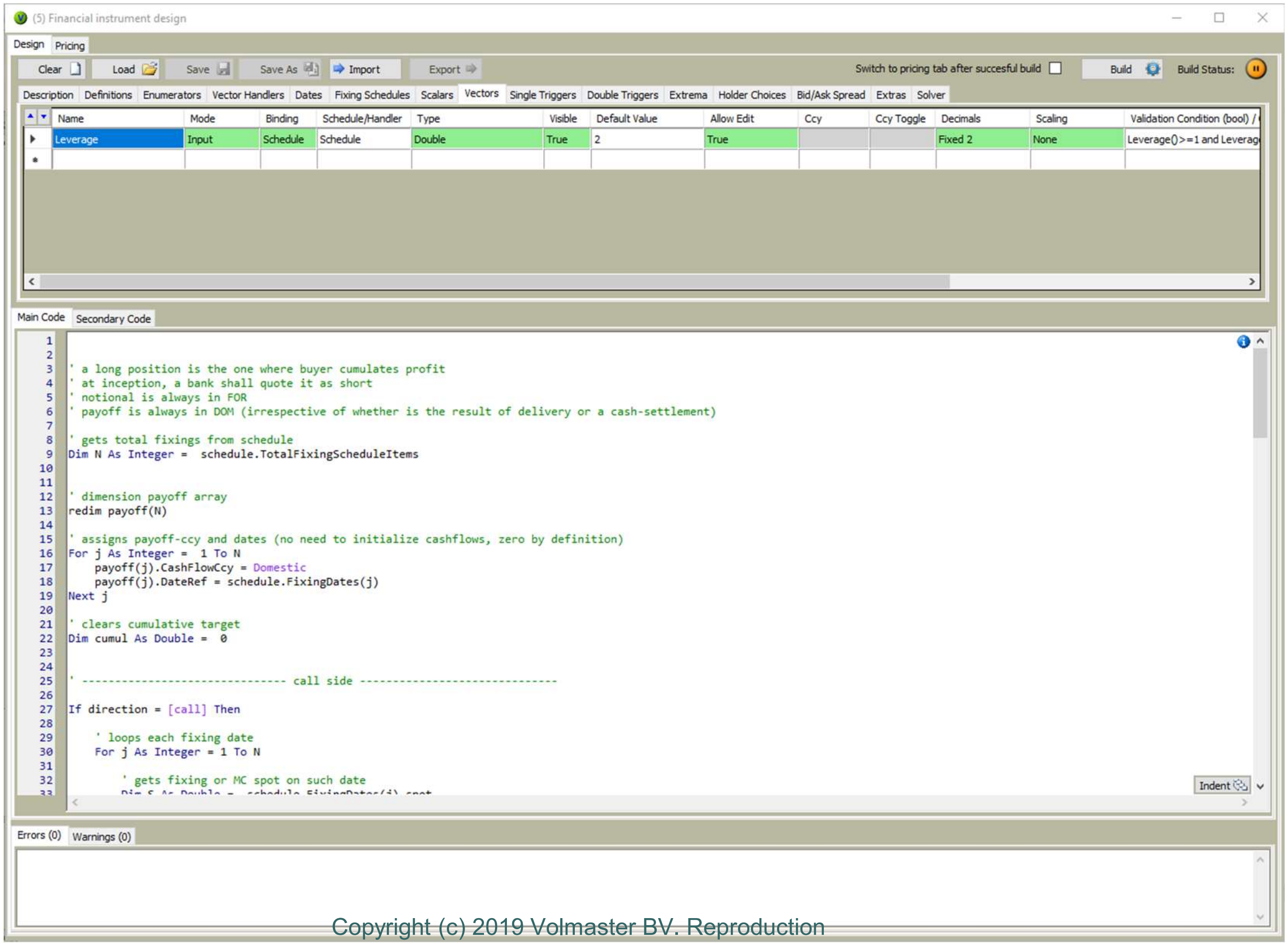
Definition of Dates



Scalar Variables

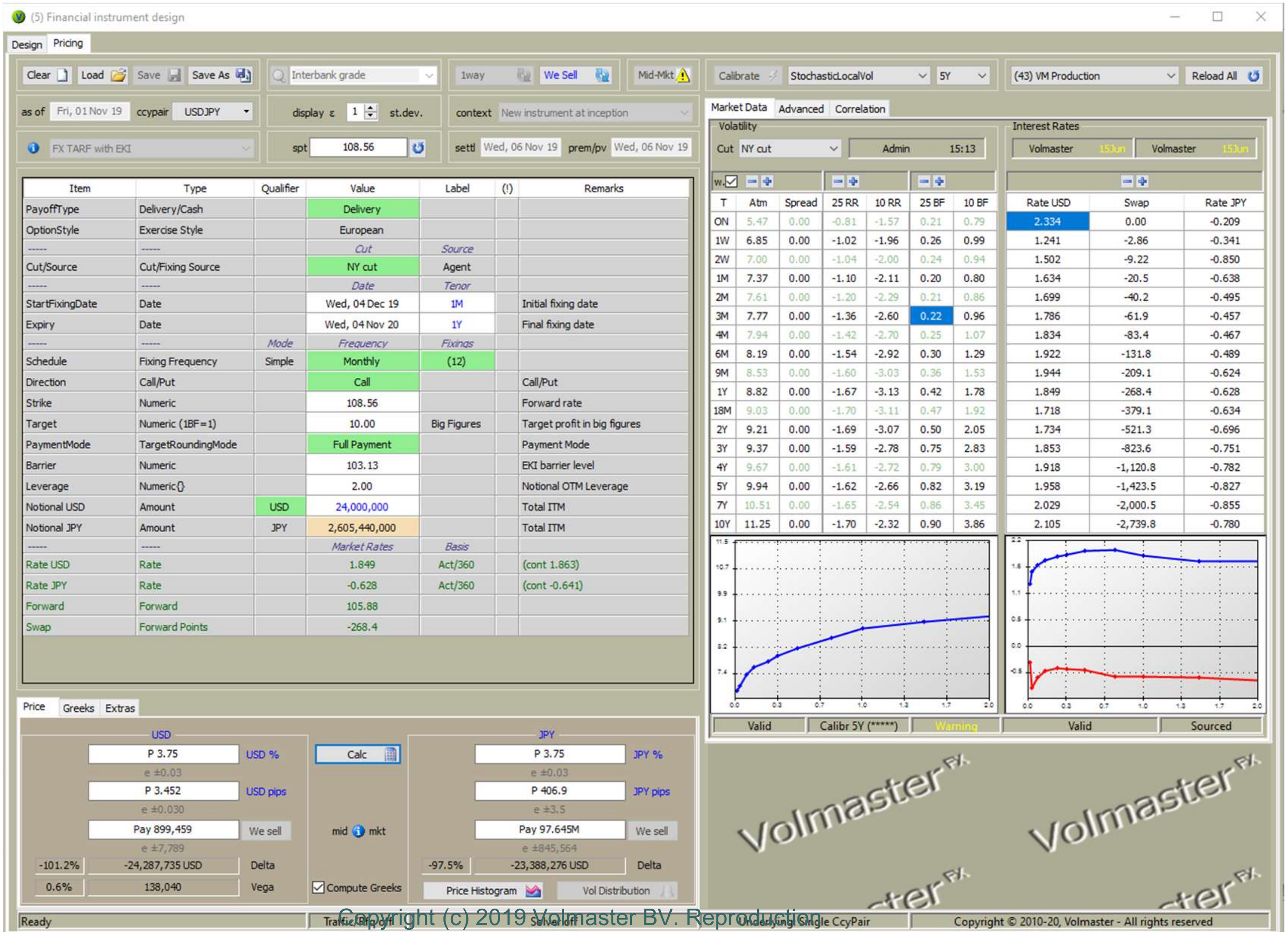


Vector Variables

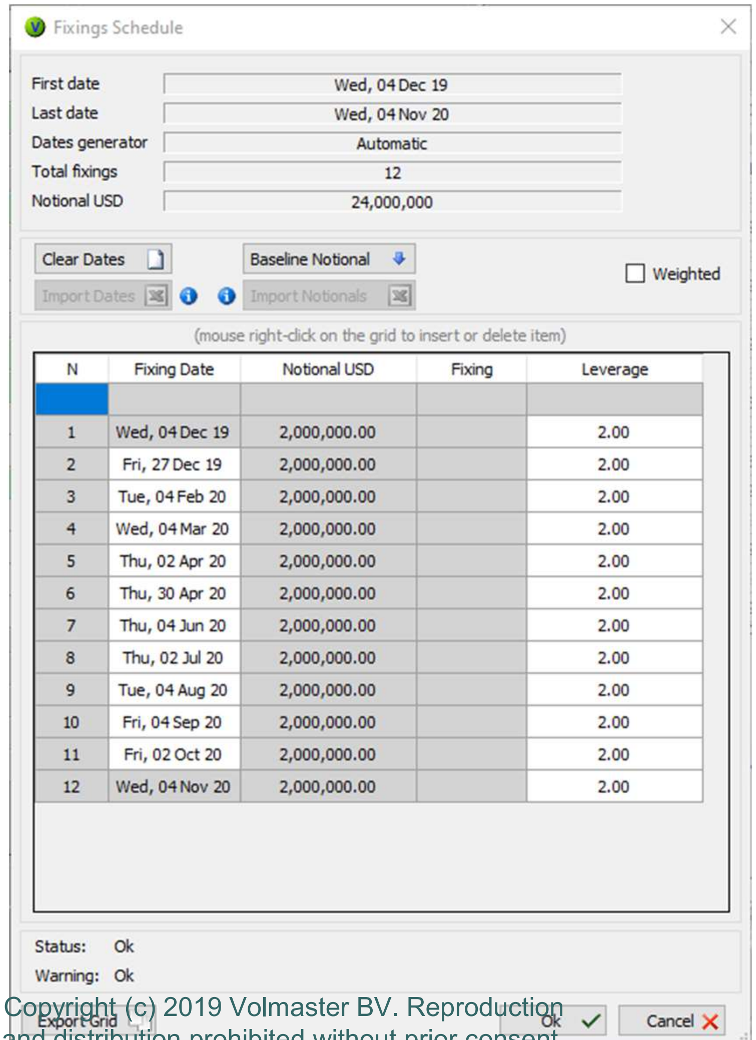


Volmaster FX

Pricing



Schedules


Fixings Schedule
First date
Wed, 04 Dec 19
Last date
Wed, 04 Nov 20
Dates generator
Automatic
Total fixings
12
Notional USD
24,000,000
Clear Dates
Baseline Notional
Weighted
Import Dates
Import Notionals
(mouse right-click on the grid to insert or delete item)

N	Fixing Date	Notional USD	Fixing	Leverage
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

Status: Ok
Warning: Ok
Export Grid
Ok
Cancel

Distribution of outcomes

Histogram

Settings

Display: Premium | Histogram Bins: 40

Ccy: USD | Cutoff Prob %: 0.5

- Distribution of PV
- Distribution of NPV (incl. premium) (selected)

- Unadjusted (selected)
- Numeraire-Adjusted

Stats

Position sign: Short

Min: -1,433,478

Avg: 0

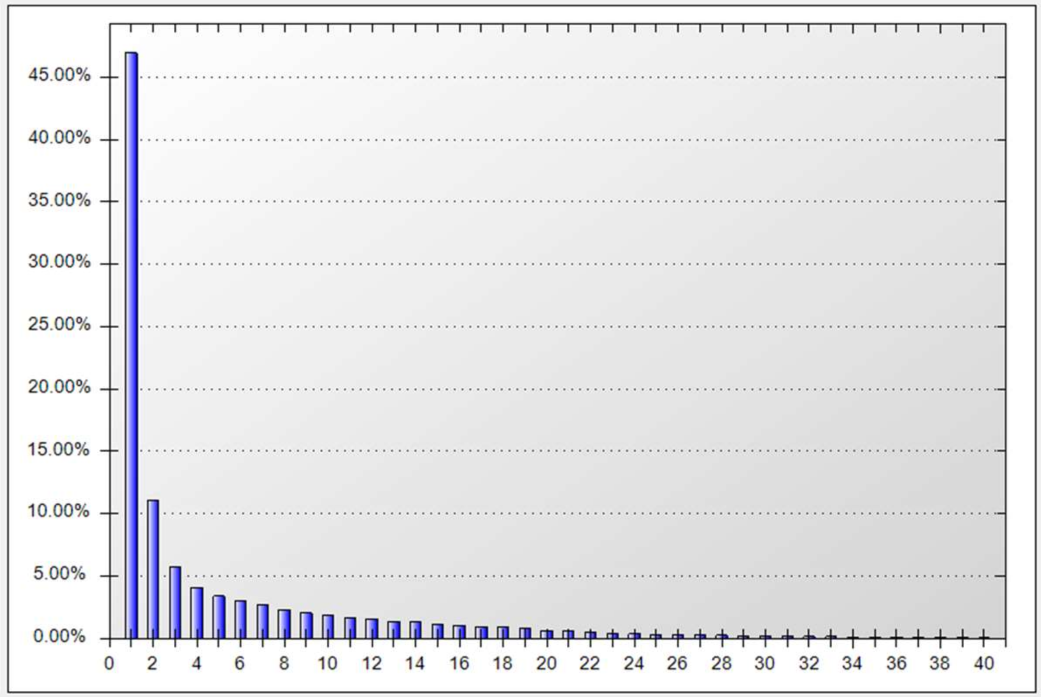
Max: 10,951,999

USD amount

Bin	From	To	Probability
1	-635,825	-501,247	46.96%
2	-501,247	-366,669	11.08%
3	-366,669	-232,091	5.70%
4	-232,091	-97,512	4.08%
5	-97,512	37,066	3.40%
6	37,066	171,644	3.04%
7	171,644	306,222	2.72%
8	306,222	440,801	2.32%
9	440,801	575,379	2.04%
10	575,379	709,957	1.89%
11	709,957	844,535	1.62%
12	844,535	979,114	1.57%
13	979,114	1,113,692	1.38%
14	1,113,692	1,248,270	1.33%
15	1,248,270	1,382,848	1.14%
16	1,382,848	1,517,427	1.05%
17	1,517,427	1,652,005	0.96%
18	1,652,005	1,786,583	0.90%
19	1,786,583	1,921,161	0.78%
20	1,921,161	2,055,740	0.63%
21	2,055,740	2,190,318	0.60%
22	2,190,318	2,324,896	0.53%
23	2,324,896	2,459,474	0.40%

Total allocated probability: 99.00%

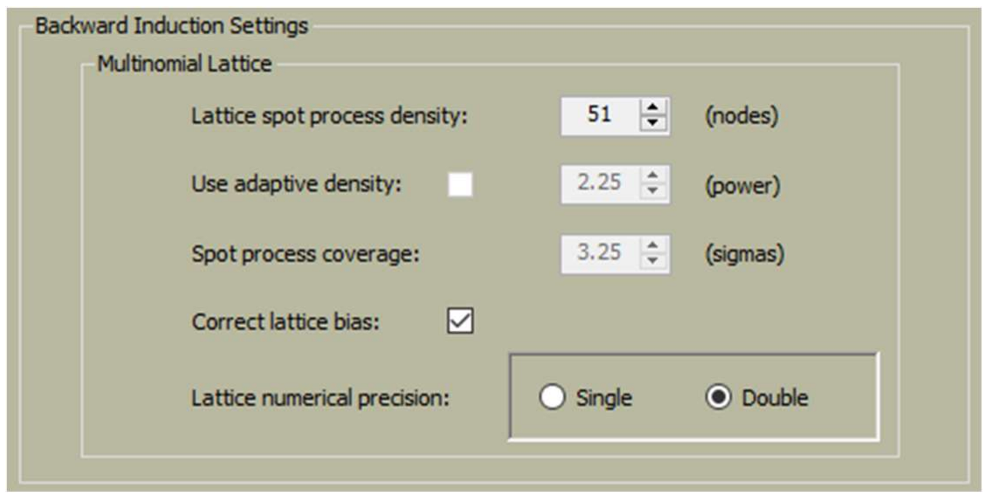
Distribution of probability of discounted outcomes



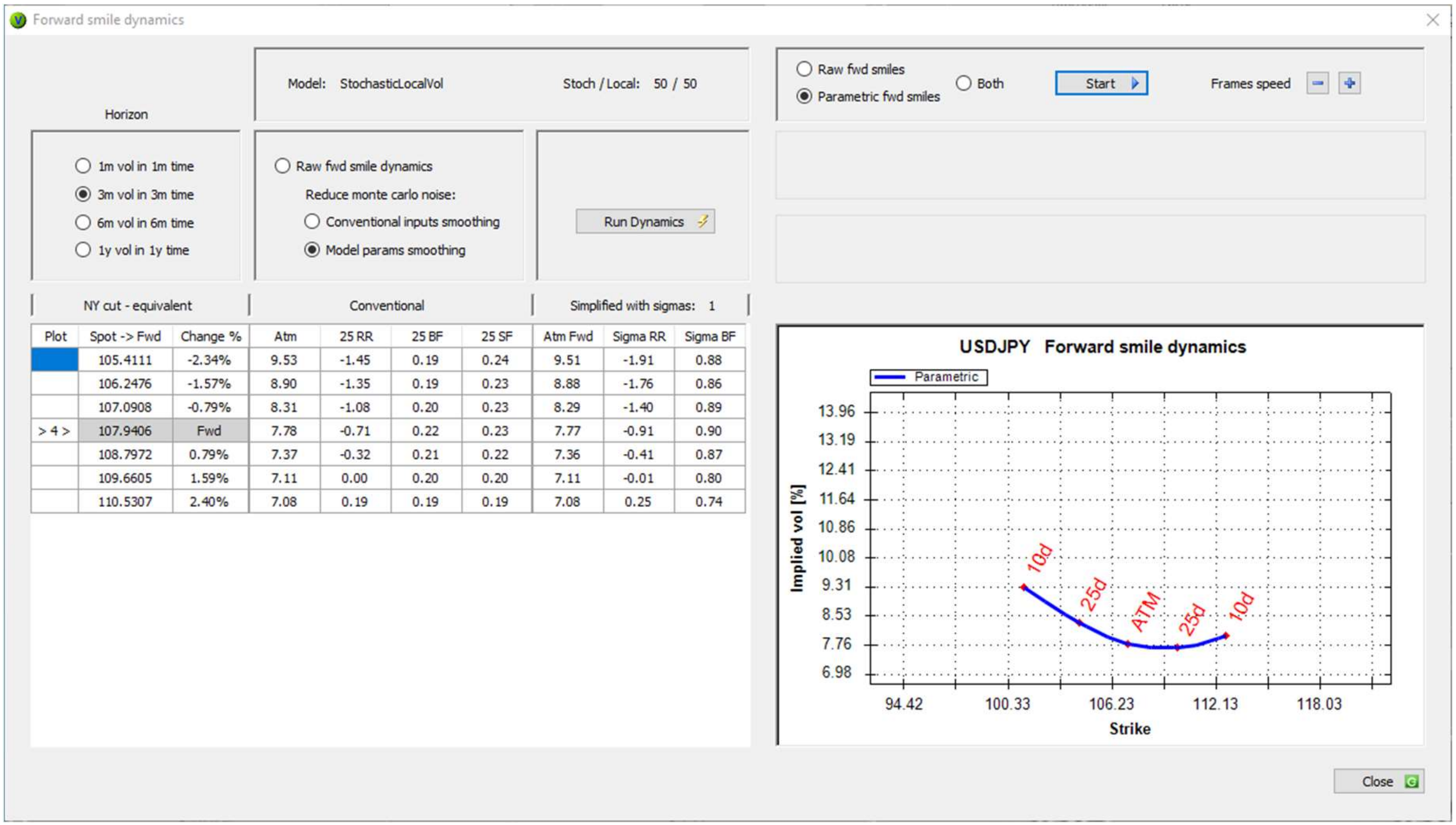
Status: OK

Close

Backward-Induction, Multinomial Lattice

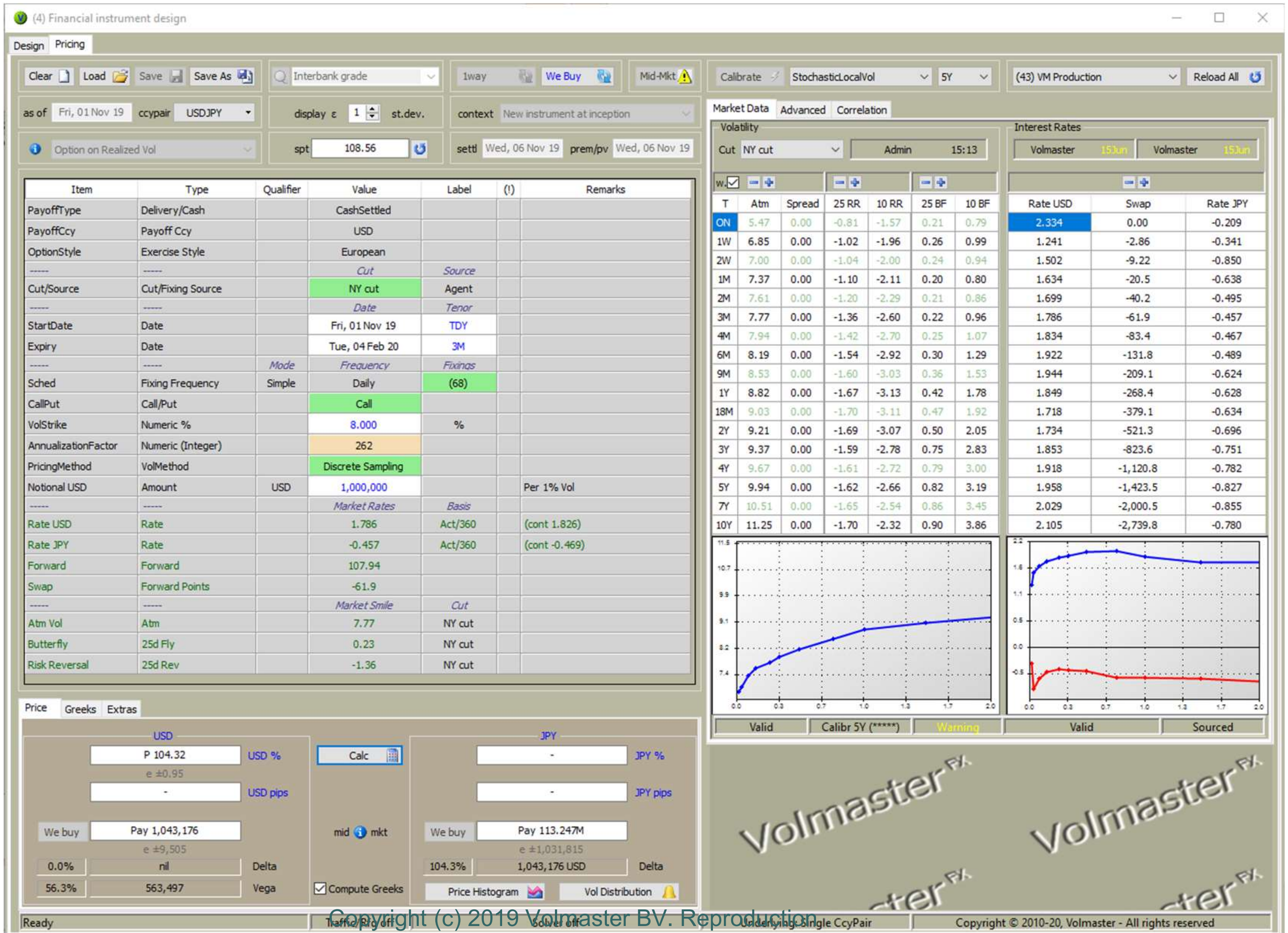


Model-dependent forward smile dynamics



Plot	Spot -> Fwd	Change %	Atm	25 RR	25 BF	25 SF	Atm Fwd	Sigma RR	Sigma BF
	105.4111	-2.34%	9.53	-1.45	0.19	0.24	9.51	-1.91	0.88
	106.2476	-1.57%	8.90	-1.35	0.19	0.23	8.88	-1.76	0.86
	107.0908	-0.79%	8.31	-1.08	0.20	0.23	8.29	-1.40	0.89
> 4 >	107.9406	Fwd	7.78	-0.71	0.22	0.23	7.77	-0.91	0.90
	108.7972	0.79%	7.37	-0.32	0.21	0.22	7.36	-0.41	0.87
	109.6605	1.59%	7.11	0.00	0.20	0.20	7.11	-0.01	0.80
	110.5307	2.40%	7.08	0.19	0.19	0.19	7.08	0.25	0.74

Derivatives on realized volatility



Model-dependent distribution of future volatility

Volmaster FX

Volatility Histogram

Settings

Histogram Bins 40

Cutoff Prob % 0.2

Vol

Log of Vol

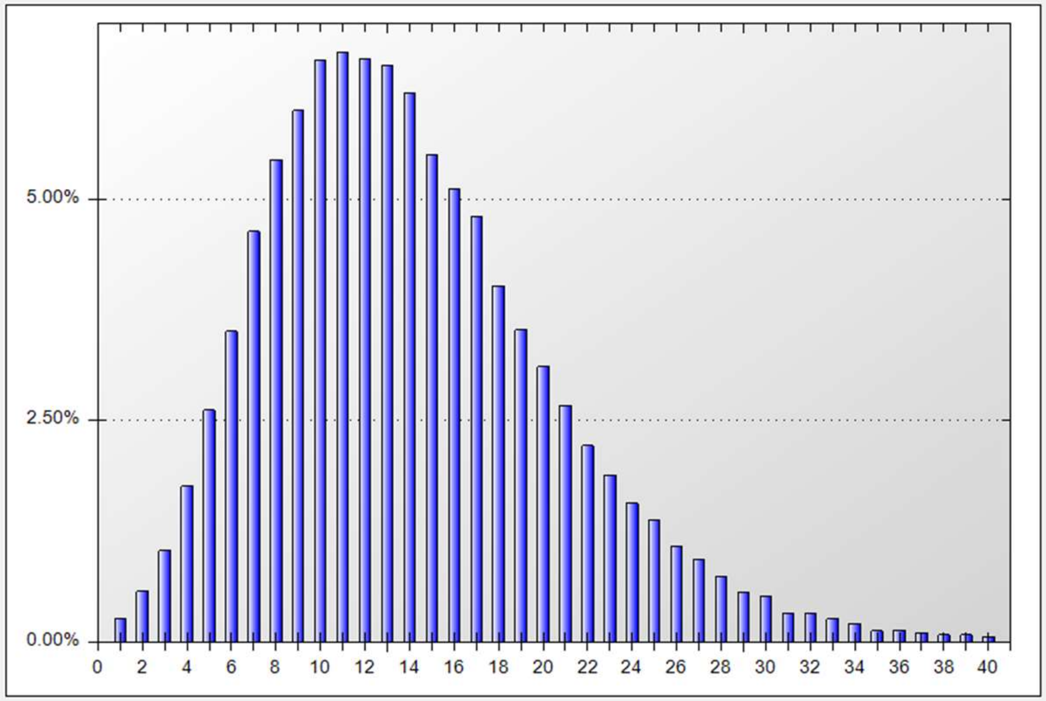
Stats

Distribution of probability of measured volatility. Based on Monte Carlo simulation.

StDev:	31.94%	Min:	-340.59%
Skew:	0.878	Avg:	-257.91%
Kurtosis:	4.413	Max:	-33.59%

Volatility Bins

Bin	From	To	Probability
1	-323.54%	-318.69%	0.26%
2	-318.69%	-313.84%	0.57%
3	-313.84%	-309.00%	1.03%
4	-309.00%	-304.15%	1.76%
5	-304.15%	-299.30%	2.62%
6	-299.30%	-294.45%	3.51%
7	-294.45%	-289.60%	4.63%
8	-289.60%	-284.76%	5.45%
9	-284.76%	-279.91%	6.00%
10	-279.91%	-275.06%	6.57%
11	-275.06%	-270.21%	6.66%
12	-270.21%	-265.37%	6.58%
13	-265.37%	-260.52%	6.50%
14	-260.52%	-255.67%	6.20%
15	-255.67%	-250.82%	5.50%
16	-250.82%	-245.98%	5.11%
17	-245.98%	-241.13%	4.80%
18	-241.13%	-236.28%	4.02%
19	-236.28%	-231.43%	3.53%
20	-231.43%	-226.58%	3.11%
21	-226.58%	-221.74%	2.67%
22	-221.74%	-216.89%	2.21%
23	-216.89%	-212.04%	1.88%

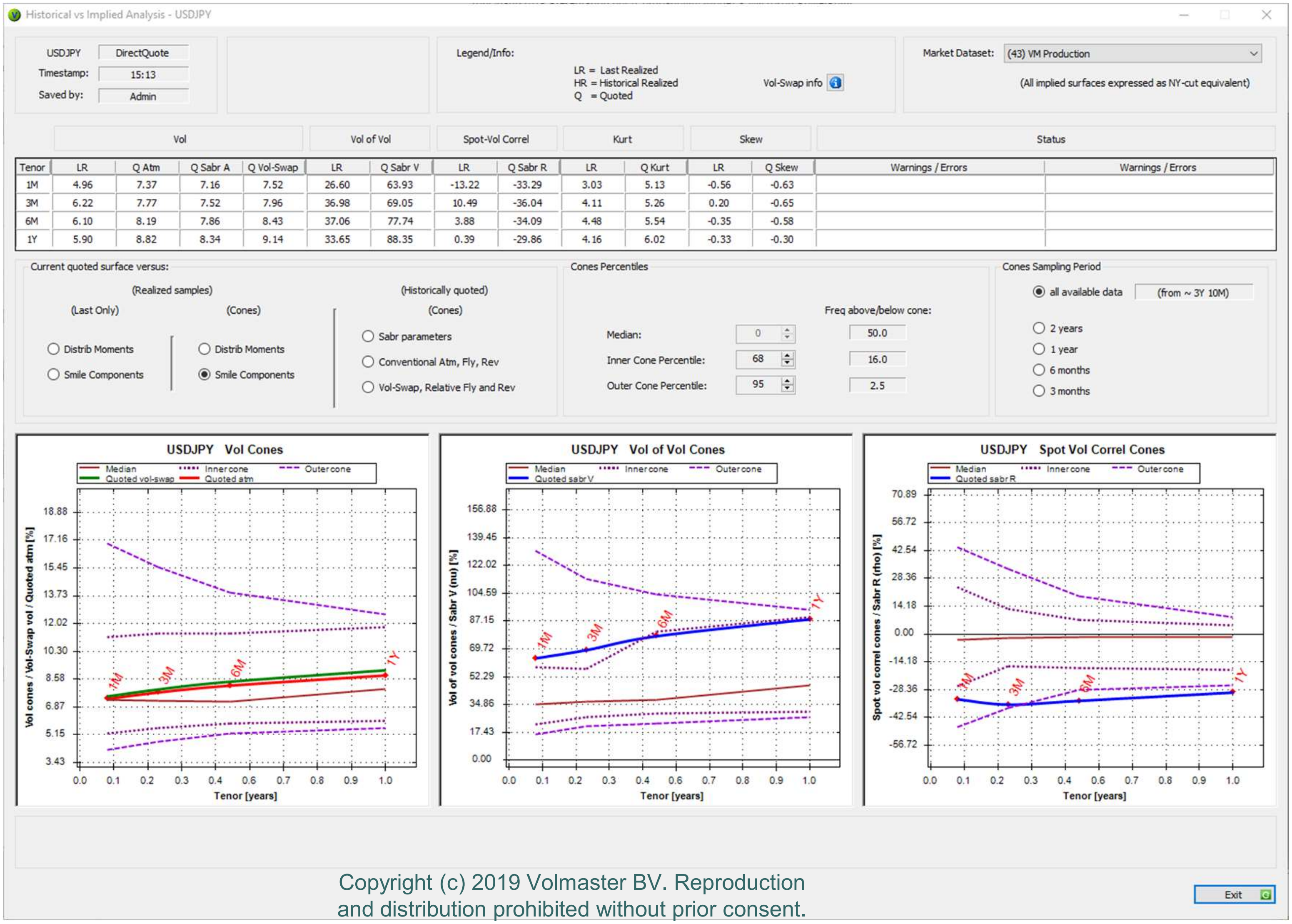


Total allocated probability: 99.60%

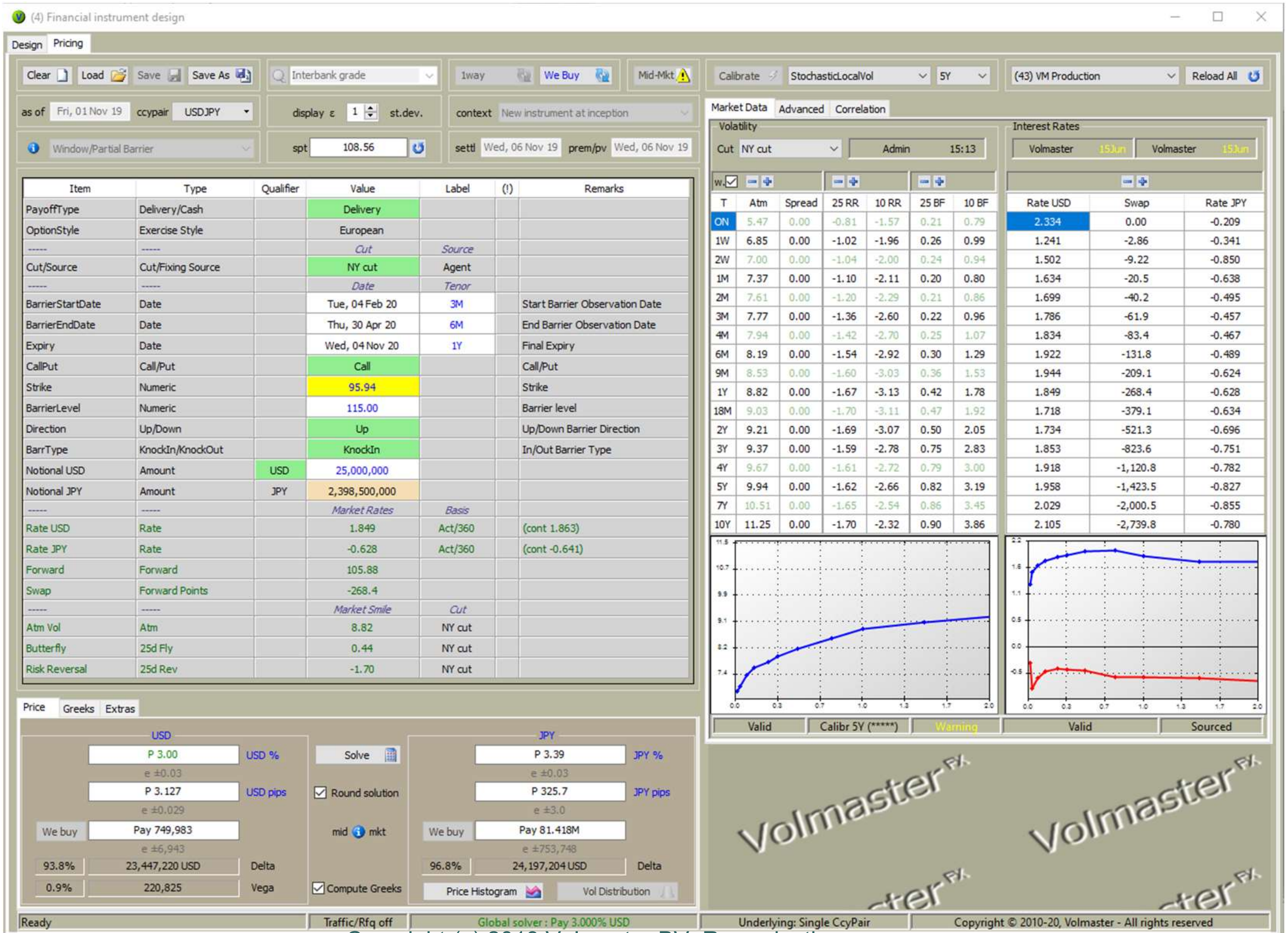
Status: OK

Close

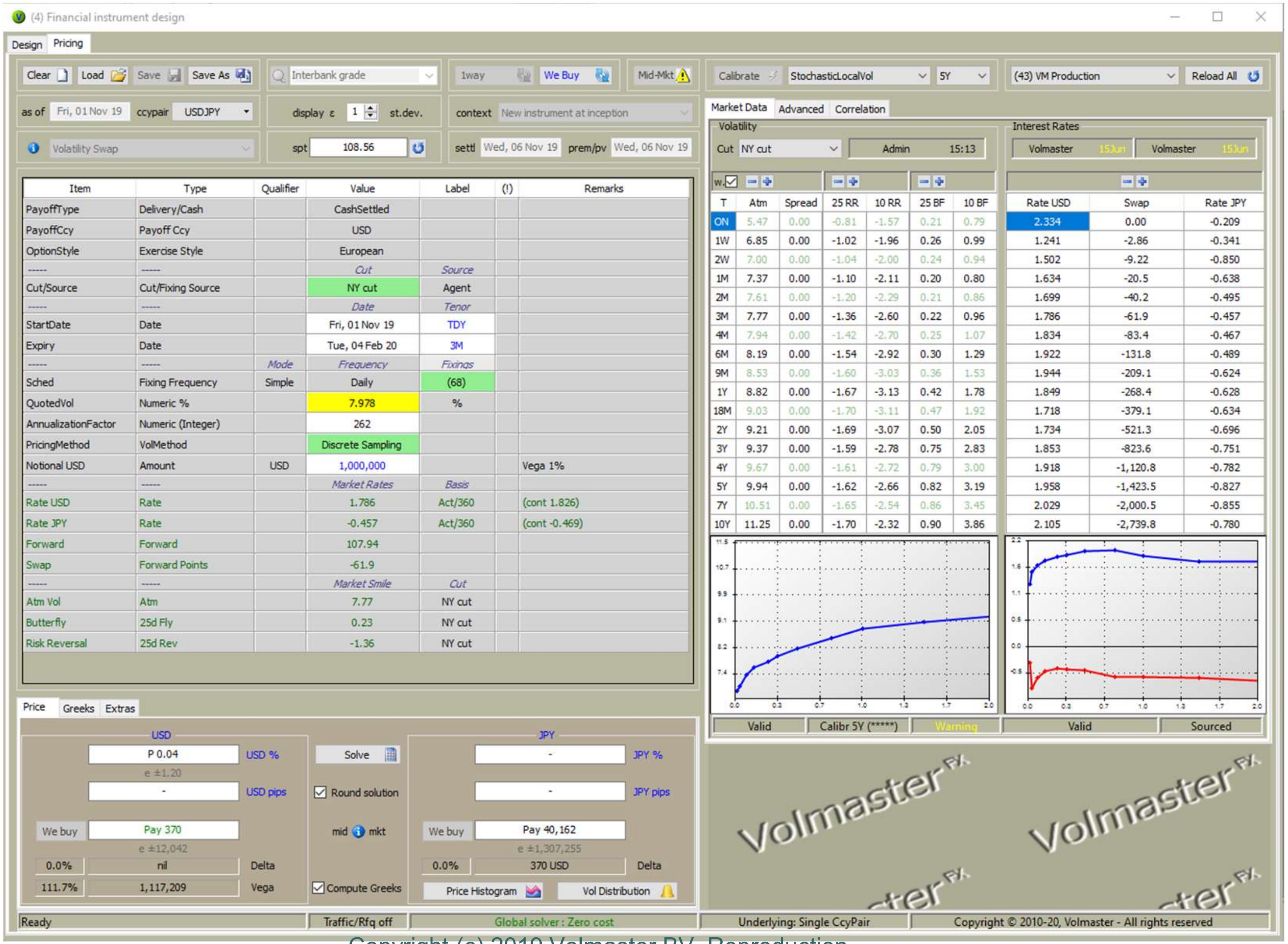
Historically realized vol-of-vol



Solver in action



Solver to compute fair price



T	Atm	Spread	25 RR	10 RR	25 BF	10 BF	Rate USD	Swap	Rate JPY
ON	5.47	0.00	-0.81	-1.57	0.21	0.79	2.334	0.00	-0.209
1W	6.85	0.00	-1.02	-1.96	0.26	0.99	1.241	-2.86	-0.341
2W	7.00	0.00	-1.04	-2.00	0.24	0.94	1.502	-9.22	-0.850
1M	7.37	0.00	-1.10	-2.11	0.20	0.80	1.634	-20.5	-0.638
2M	7.61	0.00	-1.20	-2.29	0.21	0.86	1.699	-40.2	-0.495
3M	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
6M	8.19	0.00	-1.54	-2.92	0.30	1.29	1.922	-131.8	-0.489
9M	8.53	0.00	-1.60	-3.03	0.36	1.53	1.944	-209.1	-0.624
1Y	8.82	0.00	-1.67	-3.13	0.42	1.78	1.849	-268.4	-0.628
18M	9.03	0.00	-1.70	-3.11	0.47	1.92	1.718	-379.1	-0.634
2Y	9.21	0.00	-1.69	-3.07	0.50	2.05	1.734	-521.3	-0.696
3Y	9.37	0.00	-1.59	-2.78	0.75	2.83	1.853	-823.6	-0.751
4Y	9.67	0.00	-1.61	-2.72	0.79	3.00	1.918	-1,120.8	-0.782
5Y	9.94	0.00	-1.62	-2.66	0.82	3.19	1.958	-1,423.5	-0.827
7Y	10.51	0.00	-1.65	-2.54	0.86	3.45	2.029	-2,000.5	-0.855
10Y	11.25	0.00	-1.70	-2.32	0.90	3.86	2.105	-2,739.8	-0.780