

Despite Growing Uncertainty Over the Looming Brexit Deadline, Sterling Implied Volatility Suggests Attractive Hedging Opportunities

By Kristian Siggard-Jensen and Antero Atilla

September 25th 2019, 08.45



As the October 31st Brexit deadline is inching ever closer, the uncertainty factor continues to cast dark shadows over Sterling. While this uncertainty makes any near-term forecasting rather challenging, option markets' volatility readings are implying there to be still ample opportunities for the corporate hedgers to still act prior to this key event risk.

While the implied volatilities in Sterling-crosses have been creeping higher from the Summer lows - hitting 2018-highs in early-September- the current levels are still far cry away from the post 2016 referendum highs, implying the potential worst-case outcomes for Sterling not having been priced in.

The relative moderation seen in the implied volatilities in the past few weeks pave the way open to corporate hedgers with near-future currency exposure to employ options structures as alternative hedging solutions to forward outright.

Some the historical extreme moves in Sterling- such as the 16% drop in GBP/USD in September 1992 or the parabolic move in EURGBP towards the parity in December of 2008- are comparable to or even surpass the currency reactions seen in the immediate aftermath of 2016 June Brexit referendum results.

While we are not suggesting that these extreme moves would be re-experienced in the run-up or after the October 31st deadline, prudent corporate treasury management would still call for seeking appropriate protection from potential adverse currency movements. Below, we look at 3 example cases, whereby OptionX, a cutting-edge treasury tool, can be used in finding the most optimum hedging structures.

Scenario 1: USA (US dollar)-based corporate hedger, having to seek protection in covering Sterling-expenses on a 3-month time horizon:

The hedger initiates the analysis by inputting GBPUSD as the Asset, 3 months as the Expiry period, Payables as the Risk type and GBP 1 million as the Notional amount. With the 3-month trading ranges in GBP/USD averaging around 6.5% in the past year, the hedger chooses to input 3% as the Maximum unfavorable currency move that he/she is willing to bear and 2% as the Maximum cost of structure he/she is ready to pay for.

Running the OptionX tool with the above risk parameters yields the following options structures:

Asset		Strategies				Options Board			Best Payoff			
GBPUSD		Strategy	Call/Put	Class	Strike	Barrier	Price/pips	Notional	Downside	Upside	Payoff	Protection Rate
Expiry		Vanilla hedge		vanilla			1.21%/150	1,000,000	-52,320	Zero bound	143,400	1.2807
3 months 24/12/19		leg1	long call	vanilla	1.2807		1.21%/150					
Risk type		Risk reversal		vanilla			0.06%/7	1,000,000	-25,611	24,125	24,125	1.2683
Payables		leg1	long call	vanilla	1.2683		1.56%/194					
Notional		leg2	short put	vanilla	1.2185		1.50%/187					
1000000 GBP		Zero cost risk rev		vanilla			0.06%/7	1,000,000	-25,611	24,125	24,125	1.2683
Max unfavourable move		leg1	long call	vanilla	1.2683		1.56%/194					
3% 1.2807		leg2	short put	vanilla	1.2185		1.50%/187					
Max cost of structure		Forward extra		exotic			0.00%/0	1,000,000	-24,868	24,868	24,868	1.2683
2%		leg1	long call	vanilla	1.2683		1.56%/194					
FX Forecast (Optional)		leg2	short put	exotic	1.2683	1.1495	1.56%/194					
1.10		Straddle*		no available option structures within the chosen risk parameters								
Calculate		Strangle*		no available option structures within the chosen risk parameters								
Total Cost		Bull call spread*		no available option structures within the chosen risk parameters								
5%												
Price date												
25/09/19 12:08:31												
Spot		Forward										
1.2434 1.2478												

Copyright © Capitaland April 2019. All Rights Reserved

Looking through the various alternatives, the hedger chooses to drill deeper into the Risk Reversal structure, which would allow him/her to gain a protection from unfavorable currency moves beyond 2%, whilst still retaining a potential upside of a 2% favorable currency move at a near zero premium cost.

Asset	Strategies		Options Board		Best Payoff				
GBPUSD	Risk reversal				DISTANCE	CLOSING ABOVE STRIKE	TRADING ABOVE STRIKE	IMPLIED PROBABILITY	OPTION PRICE (%)
Expiry	LEG 1:	LEG 2:	SUM:		10 %	3.23 %	7.53 %	5.32 %	0.16
3 months 24/12/19	long call	short put			9 %	6.45 %	10.75 %	7.21 %	0.22
Risk type	Price/Pips	Price/Pips	Price/Pips		8 %	12.90 %	20.43 %	9.61 %	0.30
Payables	1.56%/194	1.50%/187	0.06%/7		7 %	19.35 %	32.26 %	12.58 %	0.40
Notional	Upside	Downside	Protection Rate		6 %	25.81 %	44.09 %	16.18 %	0.53
1000000 GBP	24,125	-25,611	1.2683		5 %	31.18 %	50.54 %	20.42 %	0.70
Max unfavourable move					4 %	41.94 %	64.52 %	25.32 %	0.93
3% 1.2807					3 %	54.84 %	79.57 %	30.83 %	1.21
Max cost of structure					2 %	75.27 %	91.40 %	36.86 %	1.56
2%					1 %	93.55 %	98.92 %	43.31 %	1.99
FX Forecast (Optional)					DISTANCE	CLOSING BELOW STRIKE	TRADING BELOW STRIKE	IMPLIED PROBABILITY	OPTION PRICE (%)
1.10					-1 %	88.12 %	98.02 %	43.24 %	1.83
Calculate					-2 %	71.29 %	96.04 %	36.61 %	1.50
Total Cost					-3 %	53.47 %	87.13 %	30.29 %	1.23
5%					-4 %	40.59 %	69.31 %	24.46 %	1.01
Price date					-5 %	36.63 %	50.50 %	19.24 %	0.82
25/09/19 12:08:31					-6 %	26.73 %	42.57 %	14.73 %	0.67
Spot					-7 %	21.78 %	32.67 %	10.94 %	0.53
1.2434					-8 %	11.88 %	25.74 %	7.89 %	0.42
Forward					-9 %	8.91 %	16.83 %	5.50 %	0.33
1.2478					-10 %	4.95 %	11.88 %	3.71 %	0.25

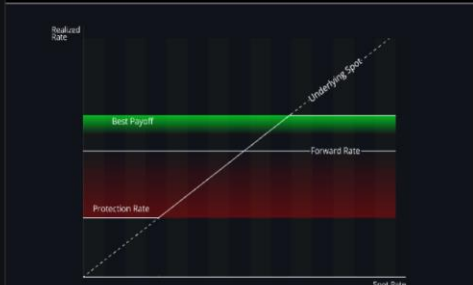
Risk Reversal - Payables

Scenario 2: USA (USD)-based corporate hedger, having to protect Sterling-income on a 3-month time horizon.

The hedger inputs GBPUSD as the Asset, 3 months as Expiry period, Receivables as Risk type, GBP 1 million as the Notional amount. The hedger inputs 5% as the Maximum unfavorable currency move he is willing to suffer and with a strict hedging cost policy, the hedger chooses 0-1% as the Maximum cost of structure. With a relatively positive Sterling outlook, the hedger also inputs the optional FX Forecast as 1.27 for GBP/USD. Running the OptionX application results in the following alternative options strategies:

Asset		Strategies			Options Board			Best Payoff				
GBPUSD		Strategy	Call/Put	Class	Strike	Barrier	Price/pips	Notional	Downside	Upside	Payoff	Protection Rate
Expiry		Vanilla hedge										
3 months		no available option structures within the chosen risk parameters										
24/12/19												
Risk type		Risk reversal										
Receivables		vanilla										
		0.55%/69										
		1,000,000										
		-42,864										
		31,740										
		26,600										
		1.1937										
</												

Examining the various alternative structures OptionX displays, the hedger chooses to drill deeper into the Zero cost risk reversal strategy, which offers not only a protection from greater than 2% adverse market moves, but also caps the potential upside 2% from the current spot, at a level closely coinciding with the hedger's own forecast.

Asset		Strategies		Options Board		Best Payoff	
GBPUSD		Zero cost risk rev					
Expiry 3 months 24/12/19		LEG 1: long put	LEG 2: short call	SUM:			
Risk type Receivables		Price/Pips 1.50%/187	Price/Pips 1.56%/194	Price/Pips 0.06%/7			
Notional 1000000 GBP		Upside 25,611	Downside -24,125	Protection Rate 1.2185			
Max unfavourable move 5% 1.1812		Zero cost risk reversal - Receivable					
Max cost of structure 0-1%							
FX Forecast (Optional) 1.27							
Calculate							
Total Cost 6%							
Price date 25/09/19 10:45:16							
Spot 1.2434	Forward 1.2478						
		DISTANCE	CLOSING ABOVE STRIKE	TRADING ABOVE STRIKE	IMPLIED PROBABILITY	OPTION PRICE (%)	
		10 %	3.23 %	7.53 %	5.32 %	0.16	
		9 %	6.45 %	10.75 %	7.21 %	0.22	
		8 %	12.90 %	20.43 %	9.61 %	0.30	
		7 %	19.35 %	32.26 %	12.58 %	0.40	
		6 %	25.81 %	44.09 %	16.18 %	0.53	
		5 %	31.18 %	50.54 %	20.42 %	0.70	
		4 %	41.94 %	64.52 %	25.32 %	0.93	
		3 %	54.84 %	79.57 %	30.83 %	1.21	
		2 %	75.27 %	91.40 %	36.86 %	1.56	
		1 %	93.55 %	98.92 %	43.31 %	1.99	
		DISTANCE	CLOSING BELOW STRIKE	TRADING BELOW STRIKE	IMPLIED PROBABILITY	OPTION PRICE (%)	
		-1 %	88.12 %	98.02 %	43.24 %	1.83	
		-2 %	71.29 %	96.04 %	36.61 %	1.50	
		-3 %	53.47 %	87.13 %	30.29 %	1.23	
		-4 %	40.59 %	69.31 %	24.46 %	1.01	
		-5 %	36.63 %	50.50 %	19.24 %	0.82	
		-6 %	26.73 %	42.57 %	14.73 %	0.67	
		-7 %	21.78 %	32.67 %	10.94 %	0.53	
		-8 %	11.88 %	25.74 %	7.89 %	0.42	
		-9 %	8.91 %	16.83 %	5.50 %	0.33	
		-10 %	4.95 %	11.88 %	3.71 %	0.25	

Scenario 3: UK (GBP)-based corporate hedger, facing future EUR-income on a 3-month time horizon.

The hedger inputs EURGBP as the Asset, 3 months as the Expiry period, Receivables as the Risk type and EUR 1 million as the Notional amount. With the 3-month average trading range in EURGBP in the past year around 5.5%, the hedger inputs 3% as the Maximum unfavorable currency move and wanting to see a greater range of alternative option structures, enters 3% as the Maximum cost of structure. Additionally, with a bullish view on EUR, the hedger enters an optional forecast of 0.98 for EURGBP. Having input the above parameters, OptionX yields the following alternative structures:

Asset	Strategies				Options Board			Best Payoff		
EURGBP	Strategy	Call/Put	Class	Strike	Barrier	Price/pips	Notional	Downside	Upside	Payoff
Expiry 3 months 24/12/19	Vanilla hedge					1.13%/100	1,000,000	-27,690	Unlimited	95,250
Risk type Receivables	leg1	long put	vanilla	0.8671		1.13%/100				0.8671
Notional 1000000 EUR	Risk reversal					0.38%/34	1,000,000	-14,318	21,072	21,072
Max unfavourable move 3% 0.8582	leg1	long put	vanilla	0.8671		1.13%/100				
Max cost of structure 3%	leg2	short call	vanilla	0.9024		1.51%/134				
FX Forecast (Optional) 0.98	Zero cost risk rev					0.00%/0	1,000,000	-8,856	17,686	17,686
Calculate	leg1	long put	vanilla	0.8759		1.51%/134				
Total Cost 6%	leg2	short call	vanilla	0.9024		1.51%/134				
Price date 25/09/19 11:00:06	Forward extra					0.00%/0	1,000,000	-17,695	17,695	17,695
Spot 0.8848	leg1	long put	vanilla	0.8671		1.13%/100				
Forward 0.8876	leg2	short call	exotic	0.8671	0.9667	1.13%/100				
	Straddle* no available option structures within the chosen risk parameters									
	Strangle*					2.36%/209	1,000,000	-38,561	Unlimited	95,250
	leg1	long put	vanilla	0.8671		1.13%/100				
	leg2	long call	vanilla	0.9113		1.23%/109				
	Bear put spread*					0.30%/27	1,000,000	Zero bound	Unlimited	95,250
	leg1	long put	vanilla	0.8671		1.13%/100				
	leg2	short put	vanilla	0.8582		0.83%/73				

Examining the various alternatives, the hedger chooses to analyze closer the Plain Vanilla hedging structure, as this one provides a protection from greater than 2% adverse currency moves at around 1% premium cost, whilst leaving the hedger open to enjoy from potentially unlimited upside gains.

Asset	Strategies			Options Board		Best Payoff				
EURGBP	Vanilla hedge					DISTANCE	CLOSING ABOVE STRIKE	TRADING ABOVE STRIKE	IMPLIED PROBABILITY	OPTION PRICE (%)
Expiry 3 months 24/12/19	LEG 1:	LEG 2:	SUM:			10 %	6.59 %	10.99 %	3.89 %	0.28
Risk type Receivables	long put					9 %	8.79 %	12.09 %	5.54 %	0.35
Notional 1000000 EUR	Price/Pips 1.13%/100	Price/Pips	Price/Pips 1.13%/100			8 %	9.89 %	16.48 %	7.72 %	0.44
Max unfavourable move 3% 0.8582	Upside Unlimited	Downside -27,690	Protection Rate 0.8671			7 %	12.09 %	21.98 %	10.53 %	0.54
Max cost of structure 3%	Vanilla hedge - Receivable (unrestricted upside)					6 %	21.98 %	34.07 %	14.05 %	0.67
FX Forecast (Optional) 0.98						5 %	26.37 %	43.96 %	18.33 %	0.82
Calculate						4 %	37.36 %	57.14 %	23.40 %	1.00
Total Cost 6%						3 %	51.65 %	75.82 %	29.22 %	1.23
Price date 25/09/19 11:00:06						2 %	59.34 %	89.01 %	35.70 %	1.51
Spot 0.8848						1 %	84.62 %	100.00 %	42.70 %	1.86
Forward 0.8876										
						DISTANCE	CLOSING BELOW STRIKE	TRADING BELOW STRIKE	IMPLIED PROBABILITY	OPTION PRICE (%)
						-1 %	91.95 %	100.00 %	42.62 %	1.51
						-2 %	68.97 %	93.10 %	35.43 %	1.13
						-3 %	50.57 %	81.61 %	28.65 %	0.83
						-4 %	29.89 %	62.07 %	22.50 %	0.60
						-5 %	19.54 %	32.18 %	17.13 %	0.43
						-6 %	10.34 %	17.24 %	12.62 %	0.30
						-7 %	6.90 %	12.64 %	8.97 %	0.20
						-8 %	5.75 %	10.34 %	6.15 %	0.13
						-9 %	1.15 %	8.05 %	4.05 %	0.08
						-10 %	n/a	3.45 %	2.56 %	0.05

Drilling even deeper into the payoff table readings, the hedger locates payoff reading for the chosen option strategy and compares this to payoff readings of alternative strike distances.

