

Atlantic Swap

Atlantic Swap is characterized by two different driver rates with the same maturity: *USD 3-Months Libor* for *Party A* and *EUR 3-Months Euribor* for *Party B*. *Party A* pays a fixed or floating rate in accordance with the movement of its driver rate (the *American Libor Interbank Offered Rate*).

<i>Atlantic Swap Schedule</i>		
Up-front	—	
Principal (Party A)	1,000,000 <i>bullet</i>	
Principal (Party B)	1,000,000 <i>bullet</i>	
Trade Date	05/07/2001	
Effective Date	09/07/2001	
Termination Date	09/07/2006	
Payment Frequency (Party A)	<i>Quarterly</i>	
Payment Frequency (Party B)	<i>Quarterly</i>	
Exchange	Party A	Party B
First year	4.20%	<i>EUR Euribor 3M</i>
Second year	If <i>USD Libor 3M</i> < 6.0% otherwise	<i>EUR Euribor 3M</i>
From Third to Fifth year	If <i>USD Libor 3M</i> < 7.0% otherwise	<i>EUR Euribor 3M</i>
Convention	Party A	Party B
Reset Dates	<i>Advance, 2 days before</i>	<i>Advance, 2 days before</i>
Day Count Fraction	<i>Act/360 (Adjusted)</i>	<i>Act/360 (Adjusted)</i>

Table 1: Example of Atlantic Swap template.

Atlantic Swap Schedule		on <i>Fairmat</i>	
Up-front			
Principal (Party A)		Na	
Principal (Party B)		Nb	
Trade Date			
Effective Date	Trading date (simulation start date)		
Termination Date	Contract initial date		
Payment Frequency (Party A)	$\text{PdA}[\text{end}] / \text{PdB}[\text{end}]$		
Payment Frequency (Party B)	mat-Year (exchange per year)		
	mat-Year (exchange per year)		
Exchange		Party A	Party B
from 1 to timeFix (mat-Year periods)		Fix	mat-Year Euribor
from (timeFix+1) to TD (mat-Year periods)	If USD mat-Year Libor < threshUSD	Fix	mat-Year Euribor
	otherwise	USD mat-Year Libor	
Convention		Party A	Party B
Reset Dates	Advance, RdayA days before		Advance, RdayB days before
Day Count Fraction	DurA		DurB

Table 2: Example of Atlantic Swap template described through *Fairmat* objects.

Na	Nb	pduA	pduB	Fix	threshUSD
1000000	1000000	09/10/2001	09/10/2001	4.20%	0.00%
1000000	1000000	09/01/2002	09/01/2002	4.20%	0.00%
1000000	1000000	09/04/2002	09/04/2002	4.20%	0.00%
1000000	1000000	09/07/2002	09/07/2002	4.20%	0.00%
1000000	1000000	09/10/2002	09/10/2002	4.90%	6.00%
1000000	1000000	09/01/2003	09/01/2003	4.90%	6.00%
1000000	1000000	09/04/2003	09/04/2003	4.90%	6.00%
1000000	1000000	09/07/2003	09/07/2003	4.90%	6.00%
1000000	1000000	09/10/2003	09/10/2003	5.50%	7.00%
1000000	1000000	09/01/2004	09/01/2004	5.50%	7.00%
1000000	1000000	09/04/2004	09/04/2004	5.50%	7.00%
1000000	1000000	09/07/2004	09/07/2004	5.50%	7.00%
1000000	1000000	09/10/2004	09/10/2004	5.50%	7.00%
1000000	1000000	09/01/2005	09/01/2005	5.50%	7.00%
1000000	1000000	09/04/2005	09/04/2005	5.50%	7.00%
1000000	1000000	09/07/2005	09/07/2005	5.50%	7.00%
1000000	1000000	09/10/2005	09/10/2005	5.50%	7.00%
1000000	1000000	09/01/2006	09/01/2006	5.50%	7.00%
1000000	1000000	09/04/2006	09/04/2006	5.50%	7.00%
1000000	1000000	09/07/2006	09/07/2006	5.50%	7.00%

Table 3: *Input (Vectors) of Atlantic Swap template loaded on “Parameters & Functions” Fairmat environment.*

Other input that user finds into “Parameters & Functions” Fairmat environment are:

- **RdayA**: (Party A) number of days before *Initial (Advance) / Ending (Ar-rears)* period;
- **RdayB**: (Party B) number of days before *Initial (Advance) / Ending (Ar-rears)* period;
- **timeFix**: number of periods before **f1** functions;
- **f1**: analytic function expression of Party A payoff from **timeFix**+1 to **TD**;
- **mat**: time horizon of Euribor - USD Libor rate expressed into year fraction;
- **PdA**: date’s vector transformation from **pduA** vector (see Table 3);
- **PdB**: date’s vector transformation from **pduB** vector (see Table 3);
- **RdA**: date’s vector transformation from **pduA** vector (see Table 3) using **RdayA** constant;
- **RdB**: date’s vector transformation from **pduB** vector (see Table 3) using **RdayB** constant;
- **DurA**: date’s vector difference transformation from **pduA** vector (see Table 3);
- **DurB**: date’s vector difference transformation from **pduB** vector (see Table 3);

- **zrEur**: (Euro) *zero* rate (derived from *spot* rate);
- **zrUSD**: (USD) *zero* rate (derived from *spot* rate);
- **rho**: correlation coefficient between *USA* and *Euro* market;
- **Td**: number of last payment date (e.g. quarterly payment with time horizon 5 year equals to 20 payments, $1/0.25 * 5$).