Product Coverage

Interest Rate / IR Notes

(1/11)

Instrument Class & Types	Features	Models	Instrument Properties
IrFloating			
Vanilla Floating -(Rate1*g1)	n/a	Forecast Method Hull-White One Factor(Tree) Hull-White One Factor(MC) Black-Derman-Toy(Tree)	* SPOT/CMS/CMT Rate available * Coupon Payoff: Rate*Gearing+Margin * if Effective Greeks then Calculation by Parameter Rate Types or By Spot Rate available
IrFloaters			
Floaters (1)Floaters: (Rate1*g1) (2)Spread Floaters: (Rate1*g1 - Rate2*g2) (3)Ratio Floaters: (Rate1*g1 / Rate2*g2) (4)Basket Floaters: (Rate1*g1 + Rate2*g2 + ... + Raten*gn) (5)Best Floaters: Max(Rate1*g1,Rate2*g2,...,Raten*gn) (6)Worst Floaters: Min(Rate1*g1,Rate2*g2,...,Raten*gn) *g1,...,gn(>0 or <0)	n/a -------------------------------- Callable -------------------------------- Putable -------------------------------- Trigger Redemption -------------------------------- Target Redemption -------------------------------- Flip Switching(Seller Right) -------------------------------- Flip Switching(Buyer Right) -------------------------------- Trigger Switching -------------------------------- Target Switching -------------------------------- Callable Trigger Redemption -------------------------------- Callable Trigger Switching	Hull-White One Factor(Tree) Hull-White One Factor(MC) Black-Derman-Toy(Tree) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) Black-Derman-Toy(Tree) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) Black-Derman-Toy(Tree) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) -------------------------------- Hull-White One Factor(MC)	* Amortization available * SPOT/CMS/CMT Rate available * Coupon Payoff: Min(Max(Floaters * Gearing + Margin, Floored Rate), Capped Rate) * Gearing (>0 or <0), Margin (>0,=0,<0) * Fixed Coupon Payoff for Starting Coupon Periods available * [Optional] Qaunto avaible * [Optional] Zero Coupon available * if Effective Greeks then Calculation by Parameter Rate Types or By Spot Rate available * if Switching Features "Fixed Coupon or Floating Coupon" after Switching available * if Trigger Features Vanilla or Spread Rate Index Trigger Conditions (Digital / Range Conditions) available * if Target Features Exact Target or Inclusive Target available

Interest Rate / IR Notes (2/11)

Instrument Class & Types	Features	Models	Instrument Properties
IrFloating			
Average Floaters (1)Average Floaters: Average(Rate*g) (2)Spread Average Floaters: Average(Rate1*g1 - Rate2*g2) (3)Average Spread Floaters: Average(Rate1*g1) - Average(Rate2*g2) (4)Ratio Average Floaters: Average(Rate1*g1 / Rate2*g2) (5)Average Ratio Floaters: Average(Rate1*g1) / Average(Rate2*g2) (6)Basket Average Floaters: Average(Rate1*g1 + Rate2*g2 + ... + Raten*gn) (7)Best Average Floaters: Average{Max-(Rate1*g1,Rate2*g2,...,Raten*gn)} (8)Worst Average Floaters: Aver-age{Min(Rate1*g1,Rate2*g2,...,Raten *gn)} *g1,...,gn(>0 or <0	n/a ---------------------------------- Callable ---------------------------------- Putable ---------------------------------- Trigger Redemption ---------------------------------- Target Redemption ---------------------------------- Flip Switching(Seller Right) ---------------------------------- Flip Switching(Buyer Right) ---------------------------------- Trigger Switching ---------------------------------- Target Switching ---------------------------------- Callable Trigger Redemption ---------------------------------- Callable Trigger Switching	Hull-White One Factor(Tree) Hull-White One Factor(MC) ---------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) ---------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) ---------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) ---------------------------------- Hull-White One Factor(MC) ---------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) ---------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) ---------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) ---------------------------------- Hull-White One Factor(MC) ---------------------------------- Hull-White One Factor(Tree) ---------------------------------- Hull-White One Factor(MC)	* Same as Floaters * Coupon Payoff: Min(Max(Average Floaters * Gearing + Margin, Floored Rate), Capped Rate)
Highest Floaters (1)Highest Floaters: Highest(Rate*g) (2)Spread Highest Floaters: Highest(Rate1*g1 - Rate2*g2) (3)Ratio Highest Floaters: Highest(Rate1*g1 / Rate2*g2) (4)Basket Highest Floaters: Highest(Rate1*g1 + Rate2*g2 + ... + Raten*gn) (5)Best Highest Floaters: Highest{Max-(Rate1*g1,Rate2*g2,...,Raten*gn)} (6)Worst Highest Floaters: High-est{Min(Rate1*g1,Rate2*g2,...,Raten* gn)} *g1,...,gn(>0 or <0)	n/a ---------------------------------- Callable ---------------------------------- Putable ---------------------------------- Trigger Redemption ---------------------------------- Target Redemption ---------------------------------- Callable Trigger Redemption	Hull-White One Factor(Tree) Hull-White One Factor(MC) ---------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) ---------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) ---------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) ---------------------------------- Hull-White One Factor(MC) ---------------------------------- Hull-White One Factor(Tree)	* Same as Floaters * Coupon Payoff: Min(Max(Highest Floaters * Gearing + Margin, Floored Rate), Capped Rate)

Interest Rate / IR Notes

(3/11)

Instrument Class & Types	Features	Models	Instrument Properties
IrFloating			
Lowest Floaters (1)Lowest Floaters: Lowest(Rate*g) (2)Spread Lowest Floaters: Lowest(Rate1*g1 - Rate2*g2) (3)Ratio Lowest Floaters: Lowest(Rate1*g1 / Rate2*g2) (4)Basket Lowest Floaters: Lowest(Rate1*g1 + Rate2*g2 + ... + Raten*gn) (5)Best Lowest Floaters: Lowest{-Max-(Rate1*g1,Rate2*g2,...,Raten*gn)} (6)Worst Lowest Floaters: Low-est{Min(Rate1*g1,Rate2*g2,...,Raten*gn)} *g1,...,gn(>0 or <0)	n/a Callable Putable Trigger Redemption Target Redemption Callable Trigger Redemption	Hull-White One Factor(Tree) Hull-White One Factor(MC) Hull-White One Factor(Tree) Hull-White One Factor(MC) Hull-White One Factor(Tree) Hull-White One Factor(MC) Hull-White One Factor(Tree) Hull-White One Factor(MC) Hull-White One Factor(MC) Hull-White One Factor(Tree)	* Same as Floaters * Coupon Payoff: Min(Max(Lowest Floaters * Gearing + Margin, Floored Rate), Capped Rate)
IrConditionalFloaters			

Conditional Floaters
(1) Vanilla Conditional Index / Fixed Coupon:
IF Rate1*g1 condition TRUE Fixed Rate FLASE Fixed Rate.
(2) Vanilla Conditional Index / Floating Coupon:
IF Rate1*g1 condition TRUE Rate2*g2 FLASE Fixed Rate or Rate3*g3.
(3) Vanilla Conditional Index / Spread Floating Coupon:
IF Rate1*g1 condition TRUE (Rate2*g2 - Rate3*g3) FALSE Fixed Rate or Rate4*g4 or (Rate4*g4 - Rate5*g5)
(4) Spread Conditional Index / Fixed Coupon:
IF (Rate1*g1 - Rate2*g2) condition TRUE Fixed Rate FALSE Fixed Rate.
(5) Spread Conditional Index / Floating Coupon:
IF (Rate1*g1 - Rate2*g2) condition TRUE Rate3*g3 FLASE Fixed Rate or Rate4*g4.
(6) Spread Conditional Index / Spread Floating Coupon:
IF (Rate1*g1 - Rate2*g2) condition TRUE (Rate3*g3 - Rate4*g4) FALSE Fixed Rate or Rate5*g5 or (Rate5*g5 - Rate6*g6).
*g1,...,gn(>0 or <0)
	n/a
	Callable
	Putable
	Trigger Redemption
	Target Redemption
	Flip Switching(Seller Right)
	Flip Switching(Buyer Right)
	Trigger Switching
	Target Switching
	Callable Trigger Redemption
	Callable Trigger Switching
		Hull-White One Factor(Tree) Hull-White One Factor(MC)
		Hull-White One Factor(Tree) Hull-White One Factor(MC)
		Hull-White One Factor(Tree) Hull-White One Factor(MC)
		Hull-White One Factor(Tree) Hull-White One Factor(MC)
		Hull-White One Factor(MC)
		Hull-White One Factor(Tree) Hull-White One Factor(MC)
		Hull-White One Factor(Tree) Hull-White One Factor(MC)
		Hull-White One Factor(Tree) Hull-White One Factor(MC)
		Hull-White One Factor(MC)
		Hull-White One Factor(Tree)
		Hull-White One Factor(MC
			* Amortization available
			* SPOT/CMS/CMT Rate available
			* Coupon Payoff: Min(Max(Conditional Floaters * Gearing + Margin, Floored Rate), Capped Rate)
			* Gearing(>0 or <0), Margin(>0,=0,<0)
			* Fixed Coupon Payoff for Starting Coupon Periods available
			* [Optional] Qaunto avaible
			* [Optional] Zero Coupon available
			* if Effective Greeks then Calculation by Parameter Rate Types or By Spot Rate available
			* if Switching Features "Fixed Coupon or Floating Coupon" after Switching available
			* if Trigger Features Vanilla or Spread Rate Index Trigger Conditions (Digital / Range Conditions) available
			* if Target Features Exact Target or Inclusive Target available

Interest Rate / IR Notes

(4/11)

Instrument Class & Types	Features	Models	Instrument Properties
IrConditionalFloaters			

Dual Index Conditional Floaters
(1) Vanilla Dual Conditional Index / Fixed Coupon:
IF Rate1*g1 condition AND Rate2*g2 condition TRUE Fixed Rate FLASE Fixed Rate.
(2) Vanilla Dual Conditional Index / Floating Coupon:
IF Rate1*g1 condition AND Rate2*g2 condition TRUE Rate3*g3 FLASE Fixed Rate or Rate4*g4.
(3) Vanilla Dual Conditional Index / Spread Floating Coupon:
IF Rate1*g1 condition AND Rate2*g2 condition TRUE (Rate2*g2 - Rate3*g3) FALSE Fixed Rate or Rate4*g4 or (Rate4*g4 - Rate5*g5)
(4) Vanilla & Spread Conditional Index / Fixed Coupon:
IF Rate1*g1 condition AND (Rate2*g2 - Rate3*g3) condition TRUE Fixed Rate FALSE Fixed Rate.
(5) Vanilla & Spread Conditional Index / Floating Coupon:
IF Rate1*g1 condition AND (Rate2*g2 - Rate3*g3) condition TRUE Rate4*g4 FLASE Fixed Rate or Rate5*g5.
(6) Vanilla & Spread Conditional Index / Spread Floating Coupon:
IF Rate1*g1 condition AND Rate2*g2 condition TRUE (Rate3*g3 - Rate4*g4) FALSE Fixed Rate or Rate5*g5 or (Rate5*g5 - Rate6*g6).
(7) Spread Dual Conditional Index / Fixed Coupon:
IF (Rate1*g1 - Rate2*g2) condition AND (Rate3*g3 - Rate4*g4) condition TRUE Fixed Rate FALSE Fixed Rate.
(8) Vanilla & Spread Dual Conditional Index / Floating Coupon:
IF (Rate1*g1 - Rate2*g2) condition AND (Rate3*g3 - Rate4*g4) condition TRUE Rate5*g5 FALSE Fixed Rate or Rate6*g6
(9) Spread Dual Conditional Index / Spread Floating Coupon:
IF (Rate1*g1 - Rate2*g2) AND (Rate3*g3 - Rate4*g4) condition TRUE (Rate5*g5 - Rate6*g6) FALSE Fixed Rate or Rate7*g7 or (Rate7*g7 - Rate8*g8).
*g1,...,gn(>0 or <0)
	n/a
	-------------------------------- 	
	Callable
	-------------------------------- 	
	Putable
	-------------------------------- 	
	Trigger Redemption
	-------------------------------- 	
	Target Redemption
	-------------------------------- 	
	Callable Trigger Redemption
		Hull-White One Factor(Tree)
		Hull-White One Factor(MC)
		-------------------------------- 	
		Hull-White One Factor(Tree)
		Hull-White One Factor(MC)
		-------------------------------- 	
		Hull-White One Factor(Tree)
		Hull-White One Factor(MC)
		-------------------------------- 	
		Hull-White One Factor(Tree)
		Hull-White One Factor(MC)
		-------------------------------- 	
		Hull-White One Factor(MC)
		-------------------------------- 	
		Hull-White One Factor(Tree)
			* Same as Conditional Floaters
			* Coupon Payoff:
			Min(Max(Dual Index Conditional Floaters * Gearing + Margin, Floored Rate), Capped Rate)

Interest Rate / IR Notes (5/11)

Instrument Class & Types	Features	Models	Instrument Properties
IrRangeAccurals			
Single Range Accruals Fixed Rate * n + Fixed Rate(Others) * (N-n) (1) Vanilla Range Accrual: IF Rate1*g1 condition TRUE n accum. FLASE N-n accum. (2) Spread Range Accrual: IF (Rate1*g1 - Rate2*g2) condition TRUE n accum. FLASE N-n accum. *g1,...,gn(>0 or <0)	n/a	Hull-White One Factor(Tree) Hull-White One Factor(MC) Black-Derman-Toy(Tree)	* Amortization available * SPOT/CMS/CMT Rate available * Coupon Payoff: Min(Max(Single Range Accruals, Floored Rate), Capped Rate) * Gearing (>0 or <0), Margin (>0,=0,<0) * Fixed Coupon Payoff for Starting Coupon Periods available * [Optional] Qaunto avaible * [Optional] Zero Coupon available * if Effective Greeks then Calculation by Parameter Rate Types or By Spot Rate available * if Switching Features "Fixed Coupon or Floating Coupon" after Switching available * if Trigger Features Vanilla or Spread Rate Index Trigger Conditions (Digital / Range Conditions) available * if Target Features &nbpExact Target or Inclusive Target available
	Callable	Hull-White One Factor(Tree) Hull-White One Factor(MC) Black-Derman-Toy(Tree)	
	Putable	Hull-White One Factor(Tree) Hull-White One Factor(MC) Black-Derman-Toy(Tree)	
	Trigger Redemption	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Target Redemption	Hull-White One Factor(MC)	
	Flip Switching(Seller Right)	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Flip Switching(Buyer Right)	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Trigger Switching	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Target Switching	Hull-White One Factor(MC)	
	Callable Trigger Redemption	Hull-White One Factor(Tree)	
	Callable Trigger Switching	Hull-White One Factor(MC)	
Dual Index Range Accruals Fixed Rate * n + Fixed Rate(Others) * (N-n) (1) Vanilla Dual Range Accrual: IF Rate1*g1 condition AND Rate2*g2 condition TRUE n accum. FLASE N-n accum. (2) Vanilla & Spread Range Accrual: IF Rate1*g1 condition AND (Rate2*g2 - Rate3*g3) condition TRUE n accum. FLASE N-n accum. (3) Spread Dual Range Accrual: IF (Rate1*g1 - Rate2*g2) condition AND (Rate3*g3 - Rate4*g4) condition TRUE n accum. FLASE N-n accum. *g1,...,gn(>0 or <0	n/a	Hull-White One Factor(Tree) Hull-White One Factor(MC)	* Same as Single Range Accruals * Coupon Payoff: Min(Max(Dual Index Range Accruals, Floored Rate), Capped Rate)
	Callable	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Putable	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Trigger Redemption	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Target Redemption	Hull-White One Factor(MC)	
	Flip Switching(Seller Right)	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Flip Switching(Buyer Right)	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Trigger Switching	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Target Switching	Hull-White One Factor(MC)	
	Callable Trigger Redemption	Hull-White One Factor(Tree)	
	Callable Trigger Switching	Hull-White One Factor(MC)	

Interest Rate / IR Notes (6/11)

Instrument Class & Types	Features	Models	Instrument Properties
IrRangeAccurals			
Multi Range Accruals Fixed Rate1 * n1 + Fixed Rate2 * n2 + ... + Fixed Raten * nn + Fixed Rate(others) * (N-(n1+n2+...+nn)) (1) Vanilla Multi Range Accrual: IF Lower1 <= Rate1*g1 <= Upper1 TRUE n1 accum ELSEIF Lower2 <= Rate1*g1 <= Upper2 TRUE n2 accum ... ELSE N - (n1+n2+...+nn) accum (2) Spread Multi Range Accrual: IF Lower1 <= (Rate1*g1 - Rate2*g2) <= Upper1 TRUE n1 accum ELSEIF Lower2 <= (Rate1*g1 - Rate2*g2) <= Upper2 TRUE n2 accum ... ELSE N - (n1+n2+...+nn) accum *g1,...,gn(>0 or <0)	n/a	Hull-White One Factor(Tree) Hull-White One Factor(MC)	* Same as Single Range Accruals * Coupon Payoff: Min(Max(Multi Range Accruals, Floored Rate), Capped Rate
	Callable	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Putable	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Trigger Redemption	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Target Redemption	Hull-White One Factor(MC)	
	Callable Trigger Redemption	Hull-White One Factor(Tree)	
IrRangeAccrualFloaters			

Single Range Accrual Floaters
(1)Vanilla Range Accrual Floaters:
Rate1*g1*n + Fixed Rate(Ohters)*(N-n)
IF Rate2*g2 condition TRUE n accum. FASLE N-n accum.
(2)Vanilla Range Accrual Spread Floaters:
(Rate1*g1 - Rate2*g2)*n + Fixed Rate(Ohters)*(N-n)
IF Rate3*g3 condition TRUE n accum. FASLE N-n accum.
(3)Spread Range Accrual Vanilla Floaters:
Rate1*g1*n + Fixed Rate(Ohters) * (N-n)
IF (Rate2*g2 - Rate3*g3) condition TRUE n accum. FASLE N-n accum.
(4)Spread Range Accrual Spread Floaters:
(Rate1*g1 - Rate2*g2)*n + Fixed Rate(Ohters)*(N-n)
IF (Rate3*g3 - Rate4*g4) condition TRUE n accum. FASLE N-n accum.
*g1,...,gn(>0 or <0)
	n/a	Hull-White One Factor(Tree)
		Hull-White One Factor(MC)
			* Amortization available
			* SPOT/CMS/CMT Rate available
			* Coupon Payoff:
			Min(Max(Single Range Accrual Floaters * Gearing + Margin, Floored Rate), Capped Rate)
			* Gearing (>0 or <0), Margin (>0,=0,<0)
			* Fixed Coupon Payoff for Starting Coupon Periods available
			* [Optional] Qaunto avaible
			* [Optional] Zero Coupon available
			* if Effective Greeks then Calculation by Parameter Rate Types or By Spot Rate available
			* if Switching Features
			"Fixed Coupon or Floating Coupon" after Switching available
			* if Trigger Features
			Vanilla or Spread Rate Index Trigger Conditions (Digital / Range Conditions) available
			* if Target Features
			Exact Target or Inclusive Target available

	Callable	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Putable	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Trigger Redemption	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Target Redemption	Hull-White One Factor(MC)	
	Flip Switching(Seller Right)	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Flip Switching(Buyer Right)	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Trigger Switching	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Target Switching	Hull-White One Factor(MC)	
	Callable Trigger Redemption	Hull-White One Factor(Tree)	
	Callable Trigger Switching	Hull-White One Factor(MC)	

Interest Rate / IR Notes

Instrument Class & Types	Features	Models	Instrument Properties
IrRangeAccrualFloaters			

Single Range Accrual Average Floaters
(1)Vanilla Range Accrual Average Floaters:
Average(Rate1*g1)*n + Fixed Rate(Ohters)*(N-n)
IF Rate2*g2 condition TRUE n accum. FASLE N-n accum.
(2)Vanilla Range Accrual Spread Average Floaters:
Average(Rate1*g1 - Rate2*g2)*n + Fixed Rate(Ohters)*(N-n)
IF Rate3*g3 condition TRUE n accum. FASLE N-n accum.
(3)Vanilla Range Accrual Average Spread Floaters:
{Average(Rate1*g1) - Average(Rate2*g2)}*n + Fixed Rate(Ohters)*(N-n)
IF Rate3*g3 condition TRUE n accum. FASLE N-n accum.
(4)Spread Range Accrual Average Floaters:
Average(Rate1*g1)*n + Fixed Rate(Ohters) * (N-n)
IF (Rate2*g2 - Rate3*g3) condition TRUE n accum. FASLE N-n accum.
(5)Spread Range Accrual Spread Average Floaters:
Average(Rate1*g1 - Rate2*g2)*n + Fixed Rate(Ohters)*(N-n)
IF (Rate3*g3 - Rate4*g4) condition TRUE n accum. FASLE N-n accum.
(6)Spread Range Accrual Average Spread Floaters:
Average(Rate1*g1) - Average(Rate2*g2)*n + Fixed Rate(Ohters)*(N-n)
IF (Rate3*g3 - Rate4*g4) condition TRUE n accum. FASLE N-n accum.
*g1,...,gn(>0 or <0)
	n/a
	-------------------------------- 	
	Callable
	-------------------------------- 	
	Putable
	-------------------------------- 	
	Trigger Redemption
	-------------------------------- 	
	Target Redemption
	-------------------------------- 	
	Callable Trigger Redemption
		Hull-White One Factor(Tree)
		Hull-White One Factor(MC)
		-------------------------------- 	
		Hull-White One Factor(Tree)
		Hull-White One Factor(MC)
		-------------------------------- 	
		Hull-White One Factor(Tree)
		Hull-White One Factor(MC)
		-------------------------------- 	
		Hull-White One Factor(Tree)
		Hull-White One Factor(MC)
		-------------------------------- 	
		Hull-White One Factor(MC)
		-------------------------------- 	
		Hull-White One Factor(Tree)
			* Same as Single Range Accrual Floaters
			* Coupon Payoff:
			Min(Max(Single Range Accrual Average Floaters * Gearing + Margin, Floored Rate), Capped Rate)

Interest Rate / IR Notes

(8/11)

Instrument Class & Types	Features	Models	Instrument Properties
IrRangeAccrualFloaters			

Dual Index Range Accrual Floaters
(1)Dual Range Accrual Floaters:
Rate1*g1*n + Fixed Rate(Ohters)*(N-n)
IF Rate2*g2 condition AND Rate3*g3 condition TRUE n accum. FASLE N-n accum.
(2)Vanilla & Spread Range Accrual Floaters:
Rate1*g1*n + Fixed Rate(Ohters)*(N-n)
IF Rate2*g2 condition AND (Rate3*g3 - Rate4*g4) condition TRUE n accum. FASLE N-n accum.
(3)Dual Spread Range Accrual Floaters:
Rate1*g1*n + Fixed Rate(Ohters)*(N-n)
IF (Rate2*g2 - Rate3*g3) condition AND (Rate4*g4 - Rate5*g5) condition TRUE n accum. FASLE N-n accum.
(4)Dual Range Accrual Spread Floaters:
(Rate1*g1 - Rate2*g2)*n + Fixed Rate(Ohters) * (N-n)
IF Rate3*g3 condition AND Rate4*g4 condition TRUE n accum. FASLE N-n accum.
(5)Vanilla & Spread Range Accrual Spread Floaters:
(Rate1*g1 - Rate2*g2)*n + Fixed Rate(Ohters)*(N-n)
IF Rate3*g3 condition AND (Rate4*g4 - Rate5*g5) condition TRUE n accum. FASLE N-n accum.
(6)Dual Spread Range Accrual Spread Floaters:
(Rate1*g1 - Rate2*g2)*n + Fixed Rate(Ohters)*(N-n)
IF (Rate3*g3 - Rate4*g4) condition AND (Rate4*g4 - Rate5*g5) condition TRUE n accum. FASLE N-n accum.
*g1,...,gn(>0 or <0)
	n/a
	-------------------------------- 	
	Callable
	-------------------------------- 	
	Putable
	-------------------------------- 	
	Trigger Redemption
	-------------------------------- 	
	Target Redemption
	-------------------------------- 	
	Callable Trigger Redemption
		Hull-White One Factor(Tree)
		Hull-White One Factor(MC)
		-------------------------------- 	
		Hull-White One Factor(Tree)
		Hull-White One Factor(MC)
		-------------------------------- 	
		Hull-White One Factor(Tree)
		Hull-White One Factor(MC)
		-------------------------------- 	
		Hull-White One Factor(Tree)
		Hull-White One Factor(MC)
		-------------------------------- 	
		Hull-White One Factor(MC)
		-------------------------------- 	
		Hull-White One Factor(Tree)
			* Same as Single Range Accrual Floaters
			* Coupon Payoff:
			Min(Max(Dual Index Range Accrual Floaters * Gearing + Margin, Floored Rate), Capped Rate)

Interest Rate / IR Notes (9/11)

Instrument Class & Types	Features	Models	Instrument Properties
IrRangeAccrualFloaters			

Dual Index Range Accrual Average Floaters
(1)Dual Range Accrual Average Floaters:
Average(Rate1*g1)*n + Fixed Rate(Ohters)*(N-n)
IF Rate2*g2 condition AND Rate3*g3 condition TRUE n accum. FASLE N-n accum.
(2)Vanilla & Spread Range Accrual Average Floaters:
Average(Rate1*g1)*n + Fixed Rate(Ohters)*(N-n)
IF Rate2*g2 condition AND (Rate3*g3 - Rate4*g4) condition TRUE n accum. FASLE N-n accum.
(3)Dual Spread Range Accrual Average Floaters:
Average(Rate1*g1)*n + Fixed Rate(Ohters)*(N-n)
IF (Rate2*g2 - Rate3*g3) condition AND (Rate4*g4 - Rate5*g5) condition TRUE n accum. FASLE N-n accum.
(4)Dual Range Accrual Spread Average Floaters:
Average(Rate1*g1 - Rate2*g2)*n + Fixed Rate(Ohters) * (N-n)
IF Rate3*g3 condition AND Rate4*g4 condition TRUE n accum. FASLE N-n accum.
(5)Vanilla & Spread Range Accrual Spread Average Floaters:
Average(Rate1*g1 - Rate2*g2)*n + Fixed Rate(Ohters)*(N-n)
IF Rate3*g3 condition AND (Rate4*g4 - Rate5*g5) condition TRUE n accum. FASLE N-n accum.
(6)Dual Spread Range Accrual Spread Average Floaters:
Average(Rate1*g1 - Rate2*g2)*n + Fixed Rate(Ohters)*(N-n)
IF (Rate3*g3 - Rate4*g4) condition AND (Rate4*g4 - Rate5*g5) condition TRUE n accum. FASLE N-n accum.
(7)Dual Range Accrual Average Spread Floaters:
Average(Rate1*g1) - Average(Rate2*g2)*n + Fixed Rate(Ohters)*(N-n)
IF Rate3*g3 condition AND Rate4*g4 condition TRUE n accum. FASLE N-n accum.
(8)Vanilla & Spread Range Accrual Average Spread Floaters:
Average(Rate1*g1) - Average(Rate2*g2)*n + Fixed Rate(Ohters)*(N-n)
IF Rate3*g3 condition AND (Rate4*g4 - Rate5*g5) condition TRUE n accum. FASLE N-n accum.
(9)Dual Spread Range Accrual Average Spread Floaters:
Average(Rate1*g1) - Average(Rate2*g2) *n + Fixed Rate(Ohters)*(N-n)
IF (Rate3*g3 - Rate4*g4) condition AND (Rate5*g5 - Rate6*g6) condition TRUE n accum. FASLE N-n accum.
*g1,...,gn(>0 or <0)
	n/a	Hull-White One Factor(Tree)
		Hull-White One Factor(MC)
			* Same as Single Range Accrual Floaters
			* Coupon Payoff:
			Min(Max(Dual Index Range Accrual Average Floaters * Gearing + Margin, Floored Rate), Capped Rate)

	Callable	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Putable	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Trigger Redemption	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Target Redemption	Hull-White One Factor(MC)	
	Callable Trigger Redemption	Hull-White One Factor(Tree)	

Interest Rate / IR Notes (10/11)

Instrument Class & Types	Features	Models	Instrument Properties
IrVolatilityFloaters			
Volatility Floaters (1)Current/Previous Change Floaters: Rate1*g1(Curr.) - Rate1*g1(Prev.) (2)Current/Previous Absolute Change Floaters: Absolute{(Rate1*g1(Curr.) - Rate1*g1(Prev.)} (3)Min/Max Change Floaters: Rate1*g1(Highest) - Rate1*g1(Lowest) (4)Current/Previous Spread Change Floaters: (Rate1*g1 - Rate2*g2)(Curr.) - (Rate1*g1 - Rate2*g2)(Prev.) (5)Current/Previous Absolute Spread Change Floaters: Absolute{(Rate1*g1 - Rate2*g2)(Curr.) - (Rate1*g1 - Rate2*g2)(Prev.)} (6)Min/Max Spread Change Floaters: (Rate1*g1 - Rate2*g2)(Highest) - (Rate1*g1 - Rate2*g2)(Lowest) *g1,...,gn(>0 or <0)	n/a	Hull-White One Factor(Tree) Hull-White One Factor(MC) Black-Derman-Toy(Tree)	* Amortization available * SPOT/CMS/CMT Rate available * Coupon Payoff: Min(Max(Volatility Floaters * gearing + Margin, Floored Rate), Capped Rate) * Gearing (>0 or <0), Margin (>0,=0,<0) * Fixed Coupon Payoff for Starting Coupon Periods available * [Optional] Qaunto avaible * [Optional] Zero Coupon available * if Effective Greeks then Calculation by Parameter Rate Types or By Spot Rate available * if Switching Features "Fixed Coupon or Floating Coupon" after Switching available * if Trigger Features Vanilla or Spread Rate Index Trigger Conditions (Digital / Range Conditions) available * if Target Features Exact Target or Inclusive Target available
	Callable	Hull-White One Factor(Tree) Hull-White One Factor(MC) Black-Derman-Toy(Tree)	
	Putable	Hull-White One Factor(Tree) Hull-White One Factor(MC) Black-Derman-Toy(Tree)	
	Trigger Redemption	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Target Redemption	Hull-White One Factor(MC)	
	Flip Switching(Seller Right)	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Flip Switching(Buyer Right)	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Trigger Switching	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Target Switching	Hull-White One Factor(MC)	
	Callable Trigger Redemption	Hull-White One Factor(Tree)	
	Callable Trigger Switching	Hull-White One Factor(MC)	
Average Volatility Floaters (1)Current/Previous Change Average Floaters: Average{Rate1*g1(Curr.) - Rate1*g1(Prev.)} (2)Current/Previous Absolute Change Average Floaters: Absolute{Average[(Rate1*g1(Curr.) - Rate1*g1(Prev.)]} (3)Current/Previous Spread Change Average Floaters: Average{(Rate1*g1 - Rate2*g2)(Curr.) - (Rate1*g1 - Rate2*g2)(Prev.)} (4)Current/Previous Absolute Spread Change Average Floaters: Absolute{Average[(Rate1*g1 - Rate2*g2)(Curr.) - (Rate1*g1 - Rate2*g2)(Prev.)]} *g1,...,gn(>0 or <0)	n/a	Hull-White One Factor(MC)	* Same as Volatility Floaters * Coupon Payoff: Min(Max(Average Volatility Floaters * gearing + Margin, Floored Rate), Capped Rate) * Average Frequency available
	Callable	Hull-White One Factor(MC)	
	Putable	Hull-White One Factor(MC)	
	Trigger Redemption	Hull-White One Factor(MC)	
	Target Redemption	Hull-White One Factor(MC)	
	Flip Switching(Seller Right)	Hull-White One Factor(MC)	
	Flip Switching(Buyer Right)	Hull-White One Factor(MC)	
	Trigger Switching	Hull-White One Factor(MC)	
	Target Switching	Hull-White One Factor(MC)	
	Callable Trigger Switching	Hull-White One Factor(MC)	

Interest Rate / IR Notes (11/11)

Instrument Class & Types	Features	Models	Instrument Properties
IrFloatersCombination			
Floaters Combination Fixed Rate, Floaters, Average Floaters, Highest Floaters, Lowest Floaters, Conditional Floaters, Dual Index Conditional Floaters, Single Range Accruals, Dual Index Range Accruals, Multi Range Accruals, Single Range Accrual Floaters, Single Range Accrual Average Floaters, Dual Index Range Accrual Floaters, Dual Index Range Accrual Average Floaters, Volatility Floaters, Volatility Average Floaters available	n/a -------------------------------- Callable -------------------------------- Putable -------------------------------- Trigger Redemption -------------------------------- Target Redemption -------------------------------- Flip Switching(Seller Right) -------------------------------- Flip Switching(Buyer Right) -------------------------------- Trigger Switching -------------------------------- Target Switching -------------------------------- Callable Trigger Redemption -------------------------------- Callable Trigger Switching	Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) -------------------------------- Hull-White One Factor(MC)	* Amortization available * SPOT/CMS/CMT Rate available * Coupon Payoff: (sample) Period1 : Fixed Rate pPeriod2 : Single Range Accruals Period3 : Single Range Accruals + Averag Floaters Period4 : Floaters * Fixed Coupon Payoff for Starting Coupon Periods available * [Optional] Qaunto avaible * [Optional] Zero Coupon available * if Effective Greeks Calculation by Parameter Rate Types or By Spot Rate available * if Switching Features "Fixed Coupon or Floating Coupon" after Switching available * if Trigger Features Vanilla or Spread Rate Index Trigger Conditions (Digital / Range Conditions) available * if Target Features Exact Target or Inclusive Target available
Floaters Ratchet Combination Fixed Rate, Previous Coupon, Floaters, Average Floaters, Highest Floaters, Lowest Floaters, Conditional Floaters, Dual Index Conditional Floaters, Single Range Accruals, Dual Index Range Accruals, Multi Range Accruals, Single Range Accrual Floaters, Single Range Accrual Average Floaters, Dual Index Range Accrual Floaters, Dual Index Range Accrual Average Floaters, Volatility Floaters, Volatility Average Floaters available	n/a -------------------------------- Callable -------------------------------- Putable -------------------------------- Trigger Redemption -------------------------------- Target Redemption -------------------------------- Flip Switching(Seller Right) -------------------------------- Flip Switching(Buyer Right) -------------------------------- Trigger Switching -------------------------------- Target Switching -------------------------------- Callable Trigger Switching	Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC)	* Same as Floaters Combination

Interest Rate / IR Swaps

(1/7)

Instrument Class & Types	Features	Models	Instrument Properties
IrVanilla Swap			
Vanilla Swap * Fixed & Floating Swap	n/a	Forecast Method Hull-White One Factor(Tree) Hull-White One Factor(MC) Black-Derman-Toy(Tree)	* Amortization available * SPOT/CMS/CMT Rate available * if Effective Greeks, Calculation by Parameter Rate Types or By Spot Rate available
Basis Swap * Floating & Floating Swap	n/a	Forecast Method Hull-White One Factor(Tree) Hull-White One Factor(MC) Black-Derman-Toy(Tree)	* Same as Vanilla Swap
IrFloaters Swaps			
Floaters Swap * Same as IRNotes Floaters * Floaters & Floating Swap or Floaters & Fixed Swap	n/a	Hull-White One Factor(Tree) Hull-White One Factor(MC) Black-Derman-Toy(Tree)	* Same as IRNotes Floaters
	Callable	Hull-White One Factor(Tree) Hull-White One Factor(MC) Black-Derman-Toy(Tree)	
	Trigger Redemption	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Target Redemption	Hull-White One Factor(MC)	
	Filp Switching	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Trigger Switching	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Target Switching	Hull-White One Factor(MC)	
	Callable Trigger Redemption	Hull-White One Factor(Tree)	
	Callable Trigger Switching	Hull-White One Factor(MC)	
Average Floaters Swap * Same as IRNotes Average Floaters * Average Floaters & Floating Swap or Average Floaters & Fixed Swap	n/a	Hull-White One Factor(Tree) Hull-White One Factor(MC)	* Same as IRNotes Average Floaters
	Callable	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Trigger Redemption	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Target Redemption	Hull-White One Factor(MC)	
	Filp Switching	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Trigger Switching	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Target Switching	Hull-White One Factor(MC)	
	Callable Trigger Redemption	Hull-White One Factor(Tree)	
	Callable Trigger Switching	Hull-White One Factor(MC)	

Interest Rate / IR Swaps

(2/7)

Instrument Class & Types	Features	Models	Instrument Properties
IrFloaters Swaps			
Highest Floaters Swap * Same as IRNotes Highest Floaters * Highest Floaters & Floating Swap or Highest Floaters & Fixed Swap	n/a	Hull-White One Factor(Tree) Hull-White One Factor(MC)	* Same as IRNotes Highest Floaters
	Callable	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Trigger Redemption	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Target Redemption	Hull-White One Factor(MC)	
	Callable Trigger Redemption	Hull-White One Factor(Tree)	
Lowest Floaters Swap * Same as IRNotes Lowest Floaters * Lowest Floaters & Floating Swap or Lowest Floaters & Fixed Swap	n/a	Hull-White One Factor(Tree) Hull-White One Factor(MC)	* Same as IRNotes Lowest Floaters
	Callable	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Trigger Redemption	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Target Redemption	Hull-White One Factor(MC)	
	Callable Trigger Redemption	Hull-White One Factor(Tree)	
IrConditionalFloaters Swaps			
Conditional Floaters Swap * Same as IRNotes Conditional Floaters * Conditional Floaters & Floating Swap or Conditional Floaters & Fixed Swap	n/a	Hull-White One Factor(Tree) Hull-White One Factor(MC)	* Same as IRNotes Conditional Floaters
	Callable	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Trigger Redemption	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Target Redemption	Hull-White One Factor(MC)	
	Filp Switching	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Trigger Switching	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Target Switching	Hull-White One Factor(MC)	
	Callable Trigger Redemption	Hull-White One Factor(Tree)	
	Callable Trigger Switching	Hull-White One Factor(MC)	

Interest Rate / IR Swaps

(3/7)

Instrument Class & Types	Features	Models	Instrument Properties
IrConditionalFloaters Swaps			
Dual Index Conditional Floaters Swap * Same as IRNotes Dual Index Conditional Floaters * Dual Index Conditional Floaters & Floating Swap or Dual Index Conditional Floaters & Fixed Swap	n/a -------------------------------- Callable -------------------------------- Trigger Redemption -------------------------------- Target Redemption -------------------------------- Callable Trigger Redemption	Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree)	* Same as IRNotes Dual Index Conditional Floaters
IrRangeAccurals Swaps			
Single Range Accruals Swap * Same as IRNotes Single Range Accruals * Single Range Accruals & Floating Swap or Single Range Accruals & Fixed Swap	n/a -------------------------------- Callable -------------------------------- Trigger Redemption -------------------------------- Target Redemption -------------------------------- Filp Switching -------------------------------- Trigger Switching -------------------------------- Target Switching -------------------------------- Callable Trigger Redemption -------------------------------- Callable Trigger Switching	Hull-White One Factor(Tree) Hull-White One Factor(MC) Black-Derman-Toy(Tree) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) Black-Derman-Toy(Tree) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) -------------------------------- Hull-White One Factor(MC)	* Same as IRNotes Single Range Accruals

Interest Rate / IR Swaps

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Instrument Class & Types	Features	Models	Instrument Properties
IrRangeAccurals Swaps			
Dual Index Range Accruals Swap * Same as IRNotes Dual Index Range Accruals * Dual Index Range Accruals & Floating Swap or Dual Index Range Accruals & Fixed Swap	n/a Callable Trigger Redemption Target Redemption Filp Switching Trigger Switching Target Switching Callable Trigger Redemption Callable Trigger Switching	Hull-White One Factor(Tree) Hull-White One Factor(MC) Hull-White One Factor(Tree) Hull-White One Factor(MC) Hull-White One Factor(Tree) Hull-White One Factor(MC) Hull-White One Factor(MC) Hull-White One Factor(Tree) Hull-White One Factor(MC) Hull-White One Factor(Tree) Hull-White One Factor(MC) Hull-White One Factor(MC) Hull-White One Factor(Tree) Hull-White One Factor(MC)	* Same as IRNotes Dual Index Range Accruals
Multi Range Accruals Swap * Same as IRNotes Multi Range Accruals * Multi Range Accruals & Floating Swap or Multi Range Accruals & Fixed Swap	n/a Callable Trigger Redemption Target Redemption Callable Trigger Redemption	Hull-White One Factor(Tree) Hull-White One Factor(MC) Hull-White One Factor(Tree) Hull-White One Factor(MC) Hull-White One Factor(Tree) Hull-White One Factor(MC) Hull-White One Factor(MC) Hull-White One Factor(Tree)	* Same as IRNotes Multi Range Accruals
IrRangeAccrualFloaters Swaps			
Single Range Accrual Floaters Swap * Same as IRNotes Single Range Accrual Floaters * Single Range Accrual Floaters & Floating Swap or Single Range Accrual Floaters & Fixed Swap	n/a Callable Trigger Redemption Target Redemption Filp Switching Trigger Switching Target Switching Callable Trigger Redemption Callable Trigger Switching	Hull-White One Factor(Tree) Hull-White One Factor(MC) Hull-White One Factor(Tree) Hull-White One Factor(MC) Hull-White One Factor(Tree) Hull-White One Factor(MC) Hull-White One Factor(MC) Hull-White One Factor(Tree) Hull-White One Factor(MC) Hull-White One Factor(Tree) Hull-White One Factor(MC) Hull-White One Factor(MC) Hull-White One Factor(Tree) Hull-White One Factor(MC)	* Same as IRNotes Single Range Accrual Floaters

Interest Rate / IR Swaps

(5/7)

Instrument Class & Types	Features	Models	Instrument Properties
IrRangeAccurals Swaps			
Single Range Accrual Average Floaters Swap * Same as IRNotes Single Range Accrual Average Floaters * Single Range Accrual Average Floaters & Floating Swap or Single Range Accrual Average Floaters & Fixed Swap	n/a -------------------------------- Callable -------------------------------- Trigger Redemption -------------------------------- Target Redemption -------------------------------- Callable Trigger Redemption	Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree)	* Same as IRNotes Single Range Accrual Average Floaters
Dual Index Range Accrual Floaters Swap * Same as IRNotes Dual Index Range Accrual Floaters * Dual Index Range Accrual Floaters & Floating Swap or Dual Index Range Accrual Floaters & Fixed Swap	n/a -------------------------------- Callable -------------------------------- Trigger Redemption -------------------------------- Target Redemption -------------------------------- Callable Trigger Redemption	Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree)	* Same as IRNotes Dual Index Range Accrual Floaters
Dual Index Range Accrual Average Floaters Swap * Same as IRNotes Dual Index Range Accrual Average Floaters * Dual Index Range Accrual Average Floaters & Floating Swap or Dual Index Range Accrual Average Floaters & Fixed Swap	n/a -------------------------------- Callable -------------------------------- Trigger Redemption -------------------------------- Target Redemption -------------------------------- Callable Trigger Redemption	Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(Tree)	* Same as IRNotes Dual Index Range Accrual Average Floaters

Interest Rate / IR Swaps (6/7)

Instrument Class & Types	Features	Models	Instrument Properties
IrVolatilityFloaters Swaps			
Volatility Floaters Swap * Same as IRNotes Volatility Floaters * Volatility Floaters & Floating Swap or Volatility Floaters & Fixed Swap	n/a	Hull-White One Factor(Tree) Hull-White One Factor(MC) Black-Derman-Toy(Tree)	* Same as IRNotes Volatility Floaters
	Callable	Hull-White One Factor(Tree) Hull-White One Factor(MC) Black-Derman-Toy(Tree)	
	Trigger Redemption	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Target Redemption	Hull-White One Factor(MC)	
	Filp Switching	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Trigger Switching	Hull-White One Factor(Tree) Hull-White One Factor(MC)	
	Target Switching	Hull-White One Factor(MC)	
	Callable Trigger Redemption	Hull-White One Factor(Tree)	
	Callable Trigger Switching	Hull-White One Factor(MC)	
Average Volatility Floaters Swap * Same as IRNotes Volatility Average Floaters * Volatility Average Floaters & Floating Swap or Volatility Average Floaters & Fixed Swap	n/a	Hull-White One Factor(MC)	* Same as IRNotes Average Volatility Floaters
	Callable	Hull-White One Factor(MC)	
	Trigger Redemption	Hull-White One Factor(MC)	
	Target Redemption	Hull-White One Factor(MC)	
	Filp Switching	Hull-White One Factor(MC)	
	Trigger Switching	Hull-White One Factor(MC)	
	Target Switching	Hull-White One Factor(MC)	
	Callable Trigger Redemption	Hull-White One Factor(MC)	
	Callable Trigger Switching	Hull-White One Factor(MC)	

Interest Rate / IR Swaps (7/7)

Instrument Class & Types	Features	Models	Instrument Properties
IrFloatersCombination Swaps			
Floaters Combinatoin Swap * Same as IRNotes Floaters Combination * Floaters Combination & Floating Swap or Floaters Combination & Fixed Swap	n/a --- Callable --- Trigger Redemption --- Target Redemption --- Filp Switching --- Trigger Switching --- Target Switching --- Callable Trigger Redemption --- Callable Trigger Switching	Hull-White One Factor(Tree) Hull-White One Factor(MC) --- Hull-White One Factor(Tree) Hull-White One Factor(MC) --- Hull-White One Factor(Tree) Hull-White One Factor(MC) --- Hull-White One Factor(MC) --- Hull-White One Factor(Tree) Hull-White One Factor(MC) --- Hull-White One Factor(Tree) Hull-White One Factor(MC) --- Hull-White One Factor(MC) --- Hull-White One Factor(Tree) --- Hull-White One Factor(MC)	* Same as IRNotes Floaters Combination
Floaters Ratchet Combinatoin Swap * Same as IRNotes Floaters Ratchet Combination * Floaters Ratchet Combination & Floating Swap or Floaters Ratchet Combination & Fixed Swap	n/a --- Callable --- Trigger Redemption --- Target Redemption --- Filp Switching --- Trigger Switching --- Target Switching --- Callable Trigger Switching	Hull-White One Factor(MC) --- Hull-White One Factor(MC) --- Hull-White One Factor(MC) --- Hull-White One Factor(MC) --- Hull-White One Factor(MC) --- Hull-White One Factor(MC) --- Hull-White One Factor(MC) --- Hull-White One Factor(MC)	* Same as IRNotes Floaters Ratchet Combination
Currency Swap			
Currency Fixed Swap * Fixed & Other Currency Fixed Swap	n/a	Forecast Method Hull-White One Factor(Tree) Hull-White One Factor(MC) Black-Derman-Toy(Tree)	* Amortization available * Notional Exchange(Initial/Final/Both) available * SPOT/CMS/CMT Rate available * if Effective Greeks, Calculation by Parameter Rate Types or By Spot Rate available
Currency Swap * Fixed & Other Currency Floating Swap	n/a	Forecast Method Hull-White One Factor(Tree) Hull-White One Factor(MC) Black-Derman-Toy(Tree)	* Same as Currency Fixed Swap
Currency Basis Swap * Floating & Other Currency Floating Swap	n/a	Forecast Method Hull-White One Factor(Tree) Hull-White One Factor(MC) Black-Derman-Toy(Tree)	* Same as Currency Fixed Swap

Interest Rate / IR Caps Floors (1/2)

Instrument Class & Types	Features	Models	Instrument Properties
Standard Caps/Floors			
Stanrdard Caps/Floors	Auto Exercise -------------------------------- Flexible Exercise -------------------------------- Chooser Exercise	Black Forecast Method Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC)	* SPOT/CMS/CMT Rate available * Quanto available, Cliquet Strike available * Trade Date/Exercise Date/Each Expiry Date payment available * if Effective Greeks, Calculation by Parameter Rate Types or By Spot Rate available
Asian Caps/Floors			
Arithmetic Average Caps/Floors	Auto Exercise -------------------------------- Flexible Exercise -------------------------------- Chooser Exercise	Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC)	* Same as Standard Caps/Floors except Cliquet Strike
Partial Arithmetic Average Caps/Floors	Auto Exercise -------------------------------- Flexible Exercise -------------------------------- Chooser Exercise	Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC)	* Same as Standard Caps/Floors except Cliquet Strike
Barrier Caps/Floors			
Konck-In Caps/Floors	Auto Exercise -------------------------------- Flexible Exercise -------------------------------- Chooser Exercise	Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC)	* Same as Standard Caps/Floors
Konck-Out Caps/Floors	Auto Exercise -------------------------------- Flexible Exercise -------------------------------- Chooser Exercise	Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC)	* Same as Standard Caps/Floors
Digital Caps/Floors			
Digital Caps/Floors	Auto Exercise -------------------------------- Flexible Exercise -------------------------------- Chooser Exercise	Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC)	* Same as Standard Caps/Floors
Range Caps/Floors	Auto Exercise -------------------------------- Flexible Exercise -------------------------------- Chooser Exercise	Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC)	* Same as Standard Caps/Floors except Cliquet Strike

Interest Rate / IR Caps Floors

(2/2)

Instrument Class & Types	Features	Models	Instrument Properties
Standard Strategy Caps/Floors			
Collars	Auto Exercise -------------------------------- Flexible Exercise -------------------------------- Chooser Exercise	Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC)	* Same as Standard Caps/Floors except Cliquet Strike
Strangles	Auto Exercise -------------------------------- Flexible Exercise -------------------------------- Chooser Exercise	Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC)	* Same as Standard Caps/Floors except Cliquet Strike
Straddles	Auto Exercise -------------------------------- Flexible Exercise -------------------------------- Chooser Exercise	Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC)	* Same as Standard Caps/Floors except Cliquet Strike
Risk Reversal	Auto Exercise -------------------------------- Flexible Exercise -------------------------------- Chooser Exercise	Hull-White One Factor(Tree) Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC) -------------------------------- Hull-White One Factor(MC)	* Same as Standard Caps/Floors except Cliquet Strike

Interest Rate / IR Swaptions

Instrument Class & Types	Features	Models	Instrument Properties
Vanilla Swaptions			
Vanilla Swaptions		Black Hull-White One Factor(MC)	
Strategy Swaptions			
Straddle Swaption		Black Hull-White One Factor(MC)	
Strangle Swaption		Black Hull-White One Factor(MC)	

Interest Rate / IR FRA

Instrument Class & Types	Features	Models	Instrument Properties
Vanilla FRA			
Vanilla FRA		Forecast Method	

Interest Rate / FI Notes

(1/2)

Instrument Class & Types	Features	Models	Instrument Properties
Fixed Coupon			
Zero Coupon (1)Discount Coupon (2)Simple Coupon (3)Compounding Coupon (4)Simple & Compounding Coupon (5)Compounding & Simple Coupon	n/a	Discount Method Forecast Method Hull-White One Factor(Tree) Black-Derman-Toy(Tree)	* Presales, Postsales available
	Callable	Hull-White One Factor(Tree) Black-Derman-Toy(Tree)	
	Putable	Hull-White One Factor(Tree) Black-Derman-Toy(Tree)	
	Callable & Putable	Hull-White One Factor(Tree) Black-Derman-Toy(Tree)	
Zero Coupon(CD/CP) (1)CD (2)CP	n/a	Discount Method Forecast Method	
Fixed Coupon -Periodic Coupon	n/a	Discount Method Forecast Method Hull-White One Factor(Tree) Black-Derman-Toy(Tree)	* Preslaes, Postsale available * Amortization available
	Callable	Hull-White One Factor(Tree) Black-Derman-Toy(Tree)	
	Putable	Hull-White One Factor(Tree) Black-Derman-Toy(Tree)	
	Callable & Putable	Hull-White One Factor(Tree) Black-Derman-Toy(Tree)	
Fixed Coupon with Grace Coupon (1)Periodic Coupon with Simple Grace Coupon (2)Periodic Coupon with Compound-ing Grace Coupon	n/a	Discount Method Forecast Method Hull-White One Factor(Tree) Black-Derman-Toy(Tree)	* Preslaes, Postsale available * Amortization available
	Callable	Hull-White One Factor(Tree) Black-Derman-Toy(Tree)	
	Putable	Hull-White One Factor(Tree) Black-Derman-Toy(Tree)	
	Callable & Putable	Hull-White One Factor(Tree) Black-Derman-Toy(Tree)	
Fixed Coupon with Stock Options			
Zero Coupon with Convert-ible Option (1)Simple Coupon (2)Compounding Coupon	n/a	Black(Tree)	* Presales, Postsale available
	Callable	Black(Tree)	
	Putable	Black(Tree)	
	Callable & Putable	Black(Tree)	

Interest Rate / FI Notes

(2/2)

Instrument Class & Types	Features	Models	Instrument Properties
Fixed Coupon with Stock Options			
Fixed Coupon with Convertible Option - Periodic Coupon	n/a Callable Putable Callable & Putable	Black(Tree) Black(Tree) Black(Tree) Black(Tree)	* Presales, Postsale available
Zero Coupon with Exchangeable Option (1)Simple Coupon (2)Compounding Coupon	n/a Callable Putable Callable & Putable	Black(Tree) Black(Tree) Black(Tree) Black(Tree)	* Presales, Postsale available
Fixed Coupon with Exchangeable Option -Periodic Coupon	n/a Callable Putable Callable & Putable	Black(Tree) Black(Tree) Black(Tree) Black(Tree)	* Presales, Postsale available
Zero Coupon with Warrants Option (1)Simple Coupon (2)Compounding Coupon	n/a Callable Putable Callable & Putable	Hull-White One Factor(Tree) Black-Derman-Toy(Tree) Hull-White One Factor(Tree) Black-Derman-Toy(Tree) Hull-White One Factor(Tree) Black-Derman-Toy(Tree) Hull-White One Factor(Tree) Black-Derman-Toy(Tree)	* Presales, Postsale available
Fixed Coupon with Warrants Option -Periodic Coupon	n/a Callable Putable Callable & Putable	Hull-White One Factor(Tree) Black-Derman-Toy(Tree) Hull-White One Factor(Tree) Black-Derman-Toy(Tree) Hull-White One Factor(Tree) Black-Derman-Toy(Tree) Hull-White One Factor(Tree) Black-Derman-Toy(Tree)	* Presales, Postsale available

Equity / EQ Options (1/4)

Instrument Class & Types	Features	Models	Instrument Properties
EqStandard Options			
European		Black	* Quanto available
American		Black(Tree)	* Quanto available
Bermudan		Black(Tree)	* Quanto available
EqAsian Options			
Arithmetic Average Strike		Black	* Quanto available
Arithmetic Average Price		Black	* Quanto available
Partial Arithmetic Average Strike		Black	* Quanto available
Partial Arithmetic Average Price		Black	* Quanto available
Geometric Average Strike		Black	* Quanto available
Geometric Average Price		Black	* Quanto available
Partial Geometric Average Strike		Black	* Quanto available
Partial Geometric Average Price		Black	* Quanto available
EqSingleBarrier Options			
Knock-In Barrier		Black	* Quanto available
Knock-In Forward Barrier		Black	* Quanto available
Knock-In Partial Barrier		Black	* Quanto available
Knock-Out Barrier		Black	* Quanto available
Knock-Out Forward Barrier		Black	* Quanto available
Knock-Out Partial Barrier		Black	* Quanto available
EqDoubleBarrier Options			
Knock-In/Out Barrier		Black	* Quanto available
Knock-In/Out Forward Barrier		Black	* Quanto available
Knock-In/Out Partial Barrier		Black	* Quanto available
Double Knock-In Barrier		Black	* Quanto available
Double Knock-In Forward Barrier		Black	* Quanto available
Double Knock-In Partial Barrier		Black	* Quanto available
Double Knock-Out Barrier		Black	* Quanto available
Double Knock-Out Forward Barrier		Black	* Quanto available
Double Knock-Out Partial Barrier		Black	* Quanto available

Equity / EQ Options (2/4)

Instrument Class & Types	Features	Models	Instrument Properties
EqBinaryOptions Optionss			
Cash Binary		Black	* Quanto available
Asset Binary		Black	* Quanto available
EqSingle Binary Barrier Options			
Knock-In Cash Binary Barrier		Black	* Quanto available
Knock-In Forward Cash Binary Barrier		Black	* Quanto available
Knock-In Partial Cash Binary Barrier		Black	* Quanto available
Knock-Out Cash Binary Barrier		Black	* Quanto available
Knock-Out Forward Cash Binary Barrier		Black	* Quanto available
Knock-Out Partial Cash Binary Barrier		Black	* Quanto available
Knock-In Asset Binary Barrier		Black	* Quanto available
Knock-In Forward Asset Binary Barrier		Black	* Quanto available
Knock-In Partial Asset Binary Barrier		Black	* Quanto available
Knock-Out Asset Binary Barrier		Black	* Quanto available
Knock-Out Forward Asset Binary Barrier		Black	* Quanto available
Knock-Out Partial Asset Binary Barrier		Black	* Quanto available
EqDouble Binary Barrier Options			
Knock-In/Out Cash/Asset Binary Barrier		Black	* Quanto available
Knock-In/Out Forward Cash/Asset Binary Barrier		Black	* Quanto available
Knock-In/Out Partial Cash/Asset Binary Barrier		Black	* Quanto available
Double Knock-In Cash/Asset Binary Barrier		Black	* Quanto available
Double Knock-In Forward Cash/Asset Binary Barrier		Black	* Quanto available
Double Knock-In Partial Cash/Asset Binary Barrier		Black	* Quanto available
Double Knock-Out Cash/Asset Binary Barrier		Black	* Quanto available
Double Knock-Out Forward Cash/Asset Binary Barrier		Black	* Quanto available
Double Knock-Out Partial Cash/Asset Binary Barrier		Black	* Quanto available
EqTouch Options			
One Touch		Black	* Quanto available
One Touch Forward Barrier		Black	* Quanto available

Equity / EQ Options (3/4)

Instrument Class & Types	Features	Models	Instrument Properties
EqTouch Options			
One Touch Partial Barrier		Black	* Quanto available
No Touch		Black	* Quanto available
No Touch Partial Barrier		Black	* Quanto available
No Touch Forward Barrier		Black	* Quanto available
EqDouble Touch Options			
Yes/No		Black	* Quanto available
Yes/No Forward Barrier		Black	* Quanto available
Yes/No Partial Barrier		Black	* Quanto available
Double Touch		Black	* Quanto available
Double Touch Forward Barrier		Black	* Quanto available
Double Touch Partial Barrier		Black	* Quanto available
Double Must Touch		Black	* Quanto available
Double Must Touch Forward Barrier		Black	* Quanto available
Double Must Touch Partial Barrier		Black	* Quanto available
Double No Touch		Black	* Quanto available
Double No Touch Forward Barrier		Black	* Quanto available
Double No Touch Partial Barrier		Black	* Quanto available
EqForward Start Options			
Vanilla Forward Start		Black	* Quanto available
EqForward Start Single Barrier Options			
Forward Start Knock-In		Black	* Quanto available
Forward Start Knock-Out		Black	* Quanto available
EqForward Start Double Barrier Options			
Forward Start Knock-In/Out		Black	* Quanto available
Forward Start Double Knock-In		Black	* Quanto available
Forward Start Double Knock-Out		Black	* Quanto available
EqLadder Options			
Strike Ladder		Black	* Quanto available
Price Ladder		Black	* Quanto available
EqLadder Barrier Options			
Strike Ladder with Knock-In(Full Barrier)		Black	* Quanto available
Strike Ladder with Knock-Out(Full Barrier)		Black	* Quanto available
Price Ladder with Knock-In(Full Barrier)		Black	* Quanto available

Equity / EQ Options (4/4)

Instrument Class & Types	Features	Models	Instrument Properties
EqLadder Barrier Options			
Price Ladder with Knock-Out(Full Barrier)		Black	* Quanto available
EqLookback Options			
Highest Strike Lookback		Black	* Quanto available
Highest Price Lookback		Black	* Quanto available
Lowest Strike Lookback		Black	* Quanto available
Lowest Price Lookback		Black	* Quanto available
Partial Highest Strike Lookback		Black	* Quanto available
Partial Highest Price Lookback		Black	* Quanto available
Partial Lowest Strike Lookback		Black	* Quanto available
Partial Lowest Price Lookback		Black	* Quanto available
EqRatchet Options			
Vanilla Ratchet		Black	* Quanto available
EqRatchet Barrier Options			
Ratchet with Knock-In		Black	* Quanto available
Ratchet with Knock-Out		Black	* Quanto available
EqAccrual Options			
Vanilla Accrual		Black(MC)	* Quanto available
EqAccumulator Barrier Options			
Accumulator Knock-In		Black(MC)	* Quanto available
Accumulator Knock-Out		Black(MC)	* Quanto available
EqAccrual Binary Options			
Accrual Binary		Black(MC)	* Quanto available
EqRainbow Options			
Max Rainbow		Black	* Quanto available
Min Rainbow		Black	* Quanto available
Dual Strike Rainbow		Black(MC)	* Quanto available
Spread Rainbow		Black(MC)	* Quanto available
Basket Rainbow		Black(MC)	* Quanto available
American Max Rainbow		Black(MC)	* Quanto available
American Min Rainbow		Black(MC)	* Quanto available
American Dual Strike Rainbow		Black(MC)	* Quanto available
American Spread Rainbow		Black(MC)	* Quanto available
American Basket Rainbow		Black(MC)	* Quanto available

Equity / EQ Notes (1/6)

Instrument Class & Types	Features	Models	Instrument Properties
EqStar Performance			
EqStar Plain (1)EqStar Performance Digital (2)EqStar Performance Range (3)EqStar Performance Multi-Range	n/a -------------------------------- Callable with Fixed Payoff	Black(FDM) Black(MC) -------------------------------- Black(MC)	* Multi-Underlying available(one,two,three,others) * Quanto available * Capital replication rate available
EqStar Range (1)EqStar (Price) Digital (2)EqStar (Price) Range (3)EqStar (Price) Multi-Range	n/a -------------------------------- Callable with Fixed Payoff	Black(FDM) Black(MC) -------------------------------- Black(MC)	* Same as EqStart Plain * if multi-Underlying and multi-range, all/worst/best range underlying condition type available
EqStar Barrier (1)~(4)EqStar Barrier (Full,Forward Start,Partial End,Window Barrier) (5)~(8)EqStar Barrier or/and Digital(Full,Forward Start,Partial End, Window Barrier) (9)~(12)EqStar Barrier or/and Range(Full,Forward Start,Partial End, Window Barrier) (13)~(16)EqStar Barrier or/and Multi-Range(Full,Forward Start,Partial End, Window Barrier)	n/a -------------------------------- Callable with Fixed Payoff	Black(FDM) Black(MC) -------------------------------- Black(MC)	* Same as EqStart Range * All underlying/All underlying on same day/Any Underlying barrier underlying observation type available * Touch/No Touch barrier touch condition type available * Hit Date/Expiry Date closing available
EqStar Double Barrier (1)~(4)EqStar Double Barrier (Full,Forward Start,Partial End,Window Barrier) (5)~(8)EqStar Double Barrier or/and Digital(Full,Forward Start,Partial End, Window Barrier) (9)~(12)EqStar Double Barrier or/and Range(Full,Forward Start,Partial End, Window Barrier) (13)~(16)EqStar Double Barrier or/and Multi-Range(Full,Forward Start,Partial End, Window Barrier)	n/a	Black(MC)	* Same as EqStart Barrier except barrier touch condition type * All Barrier/Lower Barrier/Upper Barrier/One Barrier/No Touch double barrier touch condition type available
EqStar Dual Barrier (1)~(4)EqStar Dual Barrier (Full,Forward Start,Partial End,Window Barrier)	n/a	Black(MC)	* Multi-Underlying available (one,two,three,others) * Quanto available * Capital replication rate available * Full/Forward Start/Partial End/Window Barrier available for each barrier * All Underlying /All Underlying on same day/Any Underlying * barrier underlying observation type avaiable for each barrier * Touch/No Touch barrier touch condition type available for each barrier * Hit Date/Expiry Date closing available for each barrier * fixed rate/underlying performance/mixed payoff available * if performance/mixed payoff then, gearing/bonus rate/capped rate/floored rate available

Equity / EQ Notes (2/6)

Instrument Class & Types	Features	Models	Instrument Properties
EqStar Performance			
EqStar Hydra Barrier (1)~(4)EqStar Hydra Barrier (Full,Forward Start,Partial End,Window Barrier) (5)~(8)EqStar Hydra Barrier or/and Digital(Full,Forward Start,Partial End,Window Barrier) (9)~(12)EqStar Hydra Barrier or/and Range(Full,Forward Start,Partial End,Window Barrier) (13)~(16)EqStar Hydra Barrier or/and Multi-Range(Full,Forward Start,Partial End,Window Barrier)	n/a	Black(MC)	* Same as EqStar Barrier except barrier touch condition type * No Touch/First Barrier Touch/-First&Second All Touch barrier touch condition type available
EqStar Hydra Double Barrier (1)~(4)EqStar Hydra Double Barrier (Full,Forward Start,Partial End,Window Barrier) (5)~(8)EqStar Hydra Double Barrier or/and Digital(Full,Forward Start,Par-tial End,Window Barrier) (9)~(12)EqStar Hydra Double Barrier or/and Range(Full,Forward Start,Par-tial End,Window Barrier) (13)~(16)EqStar Hydra Double Barrier or/and Multi-Range(Full,Forward Start,Partial End,Window Barrier)	n/a	Black(MC)	* Same as EqStar Double Barrier except barrier touch condition type * No Touch/Lower First Touch/Lower First&Second All Touch/Upper First Touch/Upper First&Second All Touch/Lower First&Upper Second Touch/Lower Second&Upper First Touch barrier touch condition type available
EqStar Autocall			
EqStar Autocall -Same as EqStar Plain for payoff on expiry date -Autocall payoff types (a)Digital Autocall (b)Range Autocall (c)Multi-Range Autocall (d)Digital or Barrier Autocall(Full,-Forward Start,Parital End,Window Barrier) (e)Range or Barrier Autocall(Full,-Forward Start,Parital End,Window Barrier) (f)Multi-Range or Barrier Autocall(-Full,Forward Start,Parital End,Window Barrier)	n/a -------------------------------- Callable with Fixed Payoff -------------------------------- Switching Barrier	Black(FDM) Black(MC) -------------------------------- Black(MC) -------------------------------- Black(MC)	* Same as EqStar Plain * Similiar with EqStar Barrier for autocall - if multi-undelying and multi-range, all/worst/best range underlying condition type available - All Underlying /All Underlying on same day/Any Underlying barrier underlying observation type avaiable - Touch/No Touch barrier touch condition type available - Hit Date/Expiry Date closing available - only fixed rate payoff avaiable - different condition & payoff for each autocall date available
EqStar Autocall Range -Same as EqStar Range for payoff on expiry date -Same as EqStar Autocall for Autocall payoff types	n/a -------------------------------- Callable with Fixed Payoff -------------------------------- Switching Barrier	Black(FDM) Black(MC) -------------------------------- Black(MC) -------------------------------- Black(MC)	* Same as EqStar Range * Same as EqStar Autocall for autocall
EqStar Autocall Barrier -Same as EqStar Range for payoff on expiry date -Same as EqStar Autocall for Autocall payoff types	n/a -------------------------------- Callable with Fixed Payoff -------------------------------- Switching Barrier	Black(FDM) Black(MC) -------------------------------- Black(MC) -------------------------------- Black(MC)	* Same as EqStar Barrier * Same as EqStar Autocall for autocall

Equity / EQ Notes

(3/6)

Instrument Class & Types	Features	Models	Instrument Properties
EqStar Autocall			
EqStar Autocall Double Barrier -Same as EqStar Double Barrier for payoff on expiry date -Same as EqStar Autocall for Autocall payoff types	n/a	Black(MC)	* Same as EqStar Double Barrier * Same as EqStar Autocall for autocall
EqStar Autocall Dual Barrier -Same as EqStar Dual Barrier for payoff on expiry date -Same as EqStar Autocall for Autocall payoff types	n/a	Black(MC)	* Same as EqStar Dual Barrier * Same as EqStar Autocall for autocall
EqStar Coupon Added Autocall			
EqStar Coupon Added Autocall -Same as EqStar Autocall -Coupon payoff types (a)Fixed Coupon (b)Fixed Coupon with digital condition (c)Fixed Coupon with range condition (d)Fixed Coupon with multi-range condition	n/a --------------------------------- Callable with Fixed Payoff	Black(FDM) Black(MC) --------------------------------- Black(MC)	* Same as EqStar Autocall * Similar with EqStar Range for coupon -if multi-underlying and multi-range,all/worst/best range underlying observation type available
EqStar Coupon Added Autocall Range -Same as EqStar Autocall Range -Same as EqStar Coupon Added Autocall for coupon	n/a --------------------------------- Callable with Fixed Payoff	Black(FDM) Black(MC) --------------------------------- Black(MC)	* Same as EqStar Autocall Range * Same as EqStar Coupon Added Autocall for coupon
EqStar Coupon Added Autocall Barrier -Same as EqStar Autocall Barrier -Same as EqStar Coupon Added Autocall for coupon	n/a --------------------------------- Callable with Fixed Payoff	Black(FDM) Black(MC) --------------------------------- Black(MC	* Same as EqStar Autocall Barrier * Same as EqStar Coupon Added Autocall for coupon
EqStar Coupon Added Autocall Double Barrier -Same as EqStar Autocall Double Barrier -Same as EqStar Coupon Added Autocall for coupon	n/a	Black(MC)	* Same as EqStar Autocall Double Barrier * Same as EqStar Coupon Added Autocall for coupon

Equity / EQ Notes (4/6)

Instrument Class & Types	Features	Models	Instrument Properties
EqStar Periodic Performance			
EqStar Periodic (1)EqStar Periodic Performance Digital (Base/Cliquet Performance) (2)EqStar Periodic Performance Range (Base/Cliquet Performance) (3)EqStar Periodic Performance Multi-Range (Base/Cliquet Performance)	n/a	Black(MC)	* Multi-Underlying available (one,two,three,others) * Quanto available * Capital replication rate available * if multi-undelying, worst/best/aver-age periodic performance type available * fixed rate/underlying performance/mixed periodic payoff availbale * if performance/mixed periodic payoff then, gearing/bonus rate/capped rate/floored rate available * if cliquet periodic performance type, accumulation performance payoff available * if base periodic performance type, average performance payoff available * fixed/performance(average or accumulation)/mixed payoff available * if performance/mixed payoff then, gearing/bonus rate/capped rate/floored rate available
EqStar Range Periodic (1)EqStar Periodic (Price) Digital (Base/Cliquet Performance) (2)EqStar Periodic (Price) Range (Base/Cliquet Performance) (3)EqStar Periodic (Price) Multi-Range (Base/Cliquet Performance)	n/a	Black(MC)	* Same as EqStar Periodic * if multi-underlying, all/worst/best range underlying condition type available
EqStar Barrier Periodic (1)EqStar Barrier(Full,Forward Start,Partial End,Window Barrier) (2)EqStar Barrier or/and Digital(Full,-Forward Start,Partial End,Window Barrier) (3)EqStar Barrier or/and Range(Full,-Forward Start,Partial End,Window Barrier) (3)EqStar Barrier or/and Multi-Range(Full,Forward Start,Partial End,Window Barrier)	n/a	Black(MC)	* Same as EqStar Range Periodic * All Underlying/All Underlying on same day/Any Underlying barrier underlying observatioin type available * Touch/No Touch barrier touch condition type available

Equity / EQ Notes (5/6)

Instrument Class & Types	Features	Models	Instrument Properties
EqStar Periodic Autocall			
EqStar Periodic Autocall * Same as EqStar Periodic on expiry date * Autocall payoff types &nbp(a)Digital Autocall &nbp(b)Range Autocall &nbp(c)Multi-Range Autocall	n/a	Black(MC)	* Same as EqStar Periodic * autocall properties - if multi-undelying, all/worst/best range underlying observation type available - fixed rate/performance(average or accumulation)/mixed autocall payoff avaiable - different condition & payoff for each autocall date available
EqStar Range Periodic Autocall * Same as EqStar Range Periodic * Same as EqStar Periodic Autocall for autocall	n/a	Black(MC)	* Same as EqStar Range Periodic * Same as EqStar Periodic Autocall for autocall
EqStar Barrier Periodic Autocall * Same as EqStar Barrier Periodic * Same as EqStar Periodic Autocall for autocall	n/a	Black(MC)	* Same as EqStar Barrier Periodic * Same as EqStar Periodic Autocall for autocall
EqStar Coupon			
EqStar Asset Coupon (1) Performance Coupon with EqStar Digital Coupon (2) Performance Coupon with EqStar Range Coupon (3) Performance Coupon with EqStar Multi-Range Coupon	n/a	Black(MC)	* Multi-Underlying available (one,two,three,others) * Quanto available * Capital replication rate available * if multi-undelying, worst/best/average performance type available * if multi-undelying and muliti-range, all/worst/best range underlying condition type available * fixed rate/underlying performance/mixed coupon available * if performance/mixed payoff then, gearing/bonus rate/capped rate/floored rate available
EqStar Accrual(n) Coupon (1)~(3) EqStar Single Range(n1), Accruals(Fixed,Performance,Mixed *n1) (4)~(6) EqStar Multi Range(n1,n2,...,nn), Accruals(-Fixed,Performance,Mixed *n1)	n/a	Black(MC)	* Multi-Underlying available (one,two,three,others) * Quanto available * Capital replication rate available * if multi-undelying and performance payoff, worst/best/average performance type available * if performance/mixed payoff then, gearing/bonus rate/capped rate/floored rate available
EqStar Accrual(n) Coupon with Conditions (1)~(3) EqStar Single Range(n1), Accruals(Fixed,Performance,Mixed *n1) (4)~(6) EqStar Multi Range(n1,n2,...,nn), Accruals(-Fixed,Performance,Mixed *n1)	n/a	Black(MC)	* Same as EqStar Accrual(n) Coupon * if multi-undelying and multi-range, all/worst/best range underlying condition type available * digital/range/multi-range condition available

Equity / EQ Notes (6/6)

Instrument Class & Types	Features	Models	Instrument Properties
Eq1Star Options Type			
Eq1Star Options Combination -EqStandard Options (European) -EqAsian Options -EqSingleBarrier Options -EqDoubleBarrier Options -EqBinary Options -EqSingle Binary Barrier Options -EqDouble Binary Barrier Options -EqTouch Options -EqDouble Touch Options -EqLadder Options -EqLadder Barrier Options -EqRatchet Options -EqRatchet Barrier Options available	n/a	Black	* Quanto available * Capital replication rate available * weight(<>) available for each option
Eq1Star Coupon Added Standard Options (1)Fixed Coupon Added (2)Floating Coupon Added	n/a	Black(MC)	* Quanto available * Capital replication rate available * option payoff + gearing/capped performance/floored performance available * if floating coupon, SPOT/CMS/CMT Rate available
Eq1Star Coupon Added StopLoss Barrier Options (1)Fixed Coupon Added (2)Floating Coupon Added	n/a	Black(MC)	* Same as Eq1Star Coupon Added Standard Options
EqBasket Formula			
EqBasket Dispersion Basket Formula (1) Periodic Performance Digital(Base/Cliquet Performance) (1) Periodic Performance Range(Base/Cliquet Performance) (1) Periodic Performance Multi-Range(Base/Cliquet Performance)	n/a	Black(MC)	* Quanto available * Capital replication rate available * fixed rate/dispersion/mixed payoff available * if dispersion/mixed payoff then, gearing/bonus rate/capped rate/floored rate available * last payoff gearing & floored rate available
EqBasket Periodic Dispersion Basket Formula	n/a	Black(MC)	* Same as EqBasket Dispersion Basket Formula

Equity / EQ Swaps

(1/4)

Instrument Class & Types	Features	Models	Instrument Properties
EqStar Performance Swaps			
EqStar Plain Swaps - Same as EqNotes EqStar Performance - EqStar Performance & Floating Swap	n/a -------------------------------- Callable with Fixed Payoff	Black(FDM) Black(MC) -------------------------------- Black(MC)	* Same As EQNotes EqStar Performance * SPOT/CMS/CMT Rate available * if floating Effective Greeks, Calculation by Parameter Rate Types or By Spot Rate available
EqStar Range Swaps - Same as EqNotes EqStar Range - EqStar Range & Floating Swap	- Same as EqNotes EqStar Range - EqStar Range & Floating Swap n/a -------------------------------- Callable with Fixed Payoff	Black(FDM) Black(MC) -------------------------------- Black(MC)	* Same as EQNotes EqStar Range * Same as EqStar Plain Swaps for floating
EqStar Barrier Swaps - Same as EqNotes EqStar Barrier - EqStar Barrier & Floating Swap	n/a -------------------------------- Callable with Fixed Payoff	Black(FDM) Black(MC) -------------------------------- Black(MC)	* Same as EQNotes EqStar Barrier * Same as EqStar Plain Swaps for floating
EqStar Double Barrier Swaps - Same as EqNotes EqStar Double Barrier - EqStar Double Barrier & Floating Swap	n/a	Black(MC)	* Same as EQNotes EqStar Double Barrier * Same as EqStar Plain Swaps for floating
EqStar Dual Barrier Swaps - Same as EqNotes EqStar Dual Barrier - EqStar Dual Barrier & Floating Swap	n/a	Black(MC)	* Same as EQNotes EqStar Dual Barrier * Same as EqStar Plain Swaps for floating
EqStar Hydra Double Barrier Swaps - Same as EqNotes EqStar Hydra Double Barrier - EqStar Hydra Double Barrier & Floating Swap	n/a	Black(MC)	* Same as EQNotes EqStar Hydra Double Barrier * Same as EqStar Plain Swaps for floating
EqStar Autocall Swaps			
EqStar Autocall Swaps - Same as EqNotes EqStar Autocall - EqStar Autocall & Floating Swap	n/a -------------------------------- Callable with Fixed Payoff -------------------------------- Switching Barrier	Black(FDM) Black(MC) -------------------------------- Black(MC) -------------------------------- Black(MC)	* Same as EQNotes EqStar Autocall * Same as EqStar Plain Swaps for floating
EqStar Autocall Range Swaps - Same as EqNotes EqStar Autocall Range - EqStar Autocall Range & Floating Swap	n/a -------------------------------- Callable with Fixed Payoff -------------------------------- Switching Barrier	Black(FDM) Black(MC) -------------------------------- Black(MC) -------------------------------- Black(MC)	* Same as EQNotes EqStar Autocall Range * Same as EqStar Plain Swaps for floating

Equity / EQ Swaps (2/4)

Instrument Class & Types	Features	Models	Instrument Properties
EqStar Autocall Swaps			
EqStar Autocall Barrier Swaps - Same as EqNotes EqStar Autocall Barrier - EqStar Autocall Barrier & Floating Swap	n/a -------------------------------- Callable with Fixed Payoff -------------------------------- Switching Barrier	Black(FDM) Black(MC) -------------------------------- Black(MC) -------------------------------- Black(MC)	* Same as EQNotes EqStar Autocall Barrier * Same as EqStar Plain Swaps for floating
EqStar Autocall Double Barrier Swaps - Same as EqNotes EqStar Autocall Double Barrier - EqStar Autocall Double Barrier & Floating Swap	n/a	Black(MC)	* Same as EQNotes EqStar Autocall Double Barrier * Same as EqStar Plain Swaps for floating
EqStar Autocall Dual Barrier Swaps - Same as EqNotes EqStar Autocall Dual Barrier - EqStar Autocall Dual Barrier & Floating Swap	n/a	Black(MC)	* Same as EQNotes EqStar Autocall Dual Barrier * Same as EqStar Plain Swaps for floating
EqStar Coupon Added Autocall Swaps			
EqStar Coupon Added Autocall Swaps - Same as EqNotes EqStar Coupon Added Autocall - EqStar Coupon Added Autocall & Floating Swap	n/a -------------------------------- Callable with Fixed Payoff	Black(FDM) Black(MC) -------------------------------- Black(MC)	* Same as EQNotes EqStar Coupon Added Autocall * Same as EqStar Plain Swaps for floating
EqStar Coupon Added Autocall Range Swaps - Same as EqNotes EqStar Coupon Added Autocall Range - EqStar Coupon Added Autocall Range & Floating Swap	n/a -------------------------------- Callable with Fixed Payoff	Black(FDM) Black(MC) -------------------------------- Black(MC)	* Same as EQNotes EqStar Coupon Added Autocall Range * Same as EqStar Plain Swaps for floating
EqStar Coupon Added Autocall Double Barrier Swaps - Same as EqNotes EqStar Coupon Added Autocall Barrier - EqStar Coupon Added Autocall Barrier & Floating Swap	n/a -------------------------------- Callable with Fixed Payoff	Black(FDM) Black(MC) -------------------------------- Black(MC)	* Same as EQNotes EqStar Coupon Added Autocall Barrier * Same as EqStar Plain Swaps for floating
EqStar Coupon Added Autocall Double Barrier Swaps - Same as EqNotes EqStar Coupon Added Autocall Double Barrier - EqStar Coupon Added Autocall Double Barrier & Floating Swap	n/a	Black(MC)	* Same as EQNotes EqStar Coupon Added Autocall Double Barrier * Same as EqStar Plain Swaps for floating

Equity / EQ Swaps (3/4)

Instrument Class & Types	Features	Models	Instrument Properties
EqStar Periodic Performance Swaps			
EqStar Periodic Swaps * Same as EqNotes EqStar EqStar Periodic * EqStar EqStar Periodic & Floating Swap	n/a	Black(MC)	*Same as EqNotes EqStar EqStar Periodic *Same as EqStar Plain Swaps for floating
EqStar Range Periodic Swaps * Same as EqNotes EqStar Range Periodic * EqStar Range Periodic & Floating Swap	n/a	Black(MC)	*Same as EqNotes EqStar Range Periodic *Same as EqStar Plain Swaps for floating
EqStar Barrier Periodic Swaps * Same as EqNotes EqStar Barrier Periodic * EqStar Barrier Periodic & Floating Swap	n/a	Black(MC)	*Same as EqNotes EqStar Barrier Periodic *Same as EqStar Plain Swaps for floating
EqStar Periodic Autocall Swaps			
EqStar Periodic Autocall Swaps * Same as EqNotes EqStar Periodic Autocall * EqStar Periodic Autocall & Floating Swap	n/a	Black(MC)	*Same as EqNotes EqStar Periodic Autocall *Same as EqStar Plain Swaps for floating
EqStar Range Periodic Autocall Swaps * Same as EqNotes EqStar Range Periodic Autocall * EqStar Range Periodic Autocall & Floating Swap	n/a	Black(MC)	*Same as EqNotes EqStar Range Periodic Autocall *Same as EqStar Plain Swaps for floating
EqStar Barrier Periodic Autocall Swaps * Same as EqNotes EqStar Barrier Periodic Autocall * EqStar Barrier Periodic Autocall & Floating Swap	n/a	Black(MC)	*Same as EqNotes EqStar Barrier Periodic Autocall *Same as EqStar Plain Swaps for floating

Equity / EQ Swaps (4/4)

Instrument Class & Types	Features	Models	Instrument Properties
EqStar Coupon Swaps			
EqStar Coupon Swaps * Same as EqNotes EqStar Coupon * EqStar Coupon & Floating Swap	n/a	Black(MC)	*Same as EqNotes EqStar Coupon *Same as EqStar Plain Swaps for floating
EqStar Accrual(n) Coupon Swaps * Same as EqNotes EqStar Accrual(n) Coupon * EqStar Accrual(n) Coupon & Floating Swap	n/a	Black(MC)	*Same as EqNotes EqStar Accrual(n) Coupon *Same as EqStar Plain Swaps for floating
EqEqStar Accrual(n) Coupon Swaps * Same as EqNotes EqEqStar Accrual(n) Coupon * EqEqStar Accrual(n) Coupon & Floating Swap	n/a	Black(MC)	*Same as EqNotes EqEqStar Accrual(n) Coupon *Same as EqStar Plain Swaps for floating
EqBasket Formula Swaps			
EqBasket Dispersion Basket Formula Swaps * Same as EqNotes EqBasket Dispersion Basket Formula * EqBasket Dispersion Basket Formula & Floating Swap	n/a	Black(MC)	*Same as EqNotes EqBasket Dispersion Basket Formula *Same as EqStar Plain Swaps for floating
EqBasket Periodic Dispersion Basket Formula Swaps * Same as EqNotes EqBasket Periodic Dispersion Basket Formula * EqBasket Periodic Dispersion Basket Formula & Floating Swap	n/a	Black(MC)	*Same as EqNotes EqBasket Periodic Dispersion Basket Formula *Same as EqStar Plain Swaps for floating

Foreign Exchange / FX Options (1/4)

Instrument Class & Types	Features	Models	Instrument Properties
FxStandard Options			
European		Black	
American		Black(Tree)	
Bermudan		Black(Tree)	
FxAsian Options			
Arithmetic Average Strike		Black	
Arithmetic Average Price		Black	
Partial Arithmetic Average Strike		Black	
Partial Arithmetic Average Price		Black	
Geometric Average Strike		Black	
Geometric Average Price		Black	
Partial Geometric Average Strike		Black	
Partial Geometric Average Price		Black	
FxSingleBarrier Options			
Knock-In Barrier		Black	
Knock-In Forward Barrier		Black	
Knock-In Partial Barrier		Black	
Knock-Out Barrier		Black	
Knock-Out Forward Barrier		Black	
Knock-Out Partial Barrier		Black	
FxDoubleBarrier Options			
Knock-In/Out Barrier		Black	
Knock-In/Out Forward Barrier		Black	
Knock-In/Out Partial Barrier		Black	
Double Knock-In Barrier		Black	
Double Knock-In Forward Barrier		Black	
Double Knock-In Partial Barrier		Black	
Double Knock-Out Barrier		Black	
Double Knock-Out Forward Barrier		Black	
Double Knock-Out Partial Barrier		Black	

Foreign Exchange / FX Options (2/4)

Instrument Class & Types	Features	Models	Instrument Properties
FxBinary Options			
Cash Binary		Black	
Asset Binary		Black	
FxSingle Binary Barrier Options			
Knock-In Cash Binary Barrier		Black	
Knock-In Forward Cash Binary Barrier		Black	
Knock-In Partial Cash Binary Barrier		Black	
Knock-Out Cash Binary Barrier		Black	
Knock-Out Forward Cash Binary Barrier		Black	
Knock-Out Partial Cash Binary Barrier		Black	
Knock-In Asset Binary Barrier		Black	
Knock-In Forward Asset Binary Barrier		Black	
Knock-In Partial Asset Binary Barrier		Black	
Knock-Out Asset Binary Barrier		Black	
Knock-Out Forward Asset Binary Barrier		Black	
Knock-Out Partial Asset Binary Barrier		Black	
FxDouble Binary Barrier Options			
Knock-In/Out Cash/Asset Binary Barrier		Black	
Knock-In/Out Forward Cash/Asset Binary Barrier		Black	
Knock-In/Out Partial Cash/Asset Binary Barrier		Black	
Double Knock-In Cash/Asset Binary Barrier		Black	
Double Knock-In Forward Cash/Asset Binary Barrier		Black	
Double Knock-In Partial Cash/Asset Binary Barrier		Black	
Double Knock-Out Cash/Asset Binary Barrier		Black	
Double Knock-Out Forward Cash/Asset Binary Barrier		Black	
Double Knock-Out Partial Cash/Asset Binary Barrier		Black	
FxTouch Options			
One Touch		Black	
One Touch Forward Barrier		Black	

Foreign Exchange / FX Options (3/4)

Instrument Class & Types	Features	Models	Instrument Properties
FxTouch Options			
One Touch Partial Barrier		Black	
No Touch		Black	
No Touch Partial Barrier		Black	
No Touch Forward Barrier		Black	
FxDouble Touch Options			
Yes/No		Black	
Yes/No Forward Barrier		Black	
Yes/No Partial Barrier		Black	
Double Touch		Black	
Double Touch Forward Barrier		Black	
Double Touch Partial Barrier		Black	
Double Must Touch		Black	
Double Must Touch Forward Barrier		Black	
Double Must Touch Partial Barrier		Black	
Double No Touch		Black	
Double No Touch Forward Barrier		Black	
Double No Touch Partial Barrier		Black	
FxForward Start Options			
Vanilla Forward Start		Black	
FxForward Start Single Barrier Options			
Forward Start Knock-In		Black	
Forward Start Knock-Out		Black	
FxForward Start Double Barrier Options			
Forward Start Knock-In/Out		Black	
Forward Start Double Knock-In		Black	
Forward Start Double Knock-Out		Bl	
FxLadder Options			
Strike Ladder		Black	
Price Ladder		Black	

Foreign Exchange / FX Options (4/4)

Instrument Class & Types	Features	Models	Instrument Properties
FxLadder Barrier Options			
Strike Ladder with Knock-In(Full Barrier)		Black	
Strike Ladder with Knock-Out(Full Barrier)		Black	
Price Ladder with Knock-In(Full Barrier)		Black	
FxLadder Barrier Options			
Price Ladder with Knock-Out(Full Barrier)		Black	
FxLookback Options			
Highest Strike Lookback		Black	
Highest Price Lookback		Black	
Lowest Strike Lookback		Black	
Lowest Price Lookback		Black	
Partial Highest Strike Lookback		Black	
Partial Highest Price Lookback		Black	
Partial Lowest Strike Lookback		Black	
Partial Lowest Price Lookback		Black	
FxRatchetOptions			
Vanilla Ratchet		Black	
FxRatchet Barrier Options			
Ratchet with Knock-In		Black	
Ratchet with Knock-Out		Black	
FxAccrual Options			
Vanilla Accrual		Black(MC)	
FxAccumulator Barrier Options			
Accumulator Knock-In		Black(MC)	
Accumulator Knock-Out		Black(MC)	
FxAccrual Binary Options			
Accrual Binary		Black(MC)	

Foreign Exchange / FX Fowards

(1/3)

Instrument Class & Types	Features	Models	Instrument Properties
FxCash Forwards			
FX Forwards		Black	
FX Swaps		Black	
FxStandard Forwards			
	n/a Target Redemption	Black Black(MC)	
FxAsian Forwards			
Arithmetic Average Strike	n/a Target Redemption	Black Black(MC)	
Partial Arithmetic Average Strike	n/a Target Redemption	Black Black(MC)	
Geometric Average Strike	n/a Target Redemption	Black Black(MC)	
Partial Geometric Average Strike	n/a Target Redemption	Black Black(MC)	
FxSingleBarrier Forwards			
Konck-In Barrier	n/a Target Redemption	Black Black(MC)	
Konck-In Forward Barrier	n/a Target Redemption	Black Black(MC)	
Konck-In Partial Barrier	n/a Target Redemption	Black Black(MC)	
Konck-Out Barrier	n/a Target Redemption	Black Black(MC)	
Konck-Out Forward Barrier	n/a Target Redemption	Black Black(MC)	
Konck-Out Partial Barrier	n/a Target Redemption	Black Black(MC)	
FxDoubleBarrier Forwards			
Konck-In/Out Barrier	n/a Target Redemption	Black Black(MC)	
Konck-In/Out Forward Barrier	n/a Target Redemption	Black Black(MC)	

Foreign Exchange / FX Fowards (2/3)

Instrument Class & Types	Features	Models	Instrument Properties
FxDoubleBarrier Forwards			
Konck-In/Out Partial Barrier	n/a Target Redemption	Black Black(MC)	
Double Konck-In Barrier	n/a Target Redemption	Black Black(MC)	
Double Konck-In Forward Barrier	n/a Target Redemption	Black Black(MC)	
Double Konck-In Partial Barrier	n/a Target Redemption	Black Black(MC)	
Double Konck-Out Barrier	n/a Target Redemption	Black Black(MC)	
Double Konck-Out Forward Barrier	n/a Target Redemption	Black Black(MC)	
Double Konck-Out Partial Barrier	n/a Target Redemption	Black Black(MC)	
FxForward Start Forwards			
Vanilla Forward Start	n/a Target Redemption	Black Black(MC)	
FxForward Start Forwards			
Forward Start Knock-In	n/a Target Redemption	Black Black(MC)	
Forward Start Knock-Out	n/a Target Redemption	Black Black(MC)	
FxForward Start Double Barrier Forwards			
Forward Start Knock-In/Out	n/a Target Redemption	Black Black(MC)	
Forward Start Double Knock-In	n/a Target Redemption	Black Black(MC)	
Forward Start Double Knock-Out	n/a Target Redemption	Black Black(MC)	

Foreign Exchange / FX Fowards (3/3)

Instrument Class & Types	Features	Models	Instrument Properties
FxRatchet Forwards			
Vanilla Ratchet	n/a -------------------------------- Target Redemption	Black -------------------------------- Black(MC)	
FxRatchet Barrier Forwards			
Ratchet with Knock-In	n/a -------------------------------- Target Redemption	Black -------------------------------- Black(MC)	
Ratchet with Knock-Out	n/a -------------------------------- Target Redemption	Black -------------------------------- Black(MC)	
FxAccrual Forwards			
Vanilla Accrual	n/a -------------------------------- Target Redemption	Black -------------------------------- Black(MC)	
FxAccumulator Barrier Forwards			
Accumulator Knock-In	n/a -------------------------------- Target Redemption	Black -------------------------------- Black(MC)	
Accumulator Knock-Out	n/a -------------------------------- Target Redemption	Black -------------------------------- Black(MC)	

Hybrid / HB Notes (1/6)

Instrument Class & Types	Features	Models	Instrument Properties
HbStar Performance			
HbStar Plain (1)HbStar Performance Digital (1)HbStar Performance Range (1)HbStar Performance Multi-Range	n/a -------------------------------- Callable with Fixed Payoff	Black(FDM) Black(MC) -------------------------------- Black(MC)	* Multi-Underlying available (one,two,three,others) * Equity, Commodity, Foreign Exchange Underlying available * Quanto available * Capital replication rate available * if multi-undelying, worst/best/average performance type available * fixed rate/underlying performance/mixed payoff available * if performance/mixed payoff then, gearing/bonus rate/capped rate/floored rate available
HbStar Range (1)HbStar (Price) Digital (1)HbStar (Price) Range (1)HbStar (Price) Multi-Range	n/a -------------------------------- Callable with Fixed Payoff	Black(FDM) Black(MC) -------------------------------- Black(MC)	* Same as HbStar Plain * if multi-undelying and multi-range, all/worst/best range underlying condition type available
HbStar Barrier (1)~(4)HbStar Barrier(Full,Forward Start,Partial End,Window Barrier) (5)~(8)HbStar Barrier or/and Digital(Full,Forward Start,Partial End,Window Barrier) (9)~(12)HbStar Barrier or/and Range(Full,Forward Start,Partial End,Window Barrier) (13)~(16)HbStar Barrier or/and Multi-Range(Full,Forward Start,Partial End,Window Barrier)	n/a -------------------------------- Callable with Fixed Payoff	Black(FDM) Black(MC) -------------------------------- Black(MC)	* Same as HbStar Range * All Underlying /All Underlying on same day/Any Underlying barrier underlying observation type avaiable * Touch/No Touch barrier touch condition type available * Hit Date/Expiry Date closing available
HbStar Double Barrier (1)~(4)HbStar Double Barrier(Full,Forward Start,Partial End,Window Barrier) (5)~(8)HbStar Double Barrier or/and Digital(Full,Forward Start,Partial End,Window Barrier) (9)~(12)HbStar Double Barrier or/and Range(Full,Forward Start,Partial End,Window Barrier) (13)~(16)HbStar Double Barrier or/and Multi-Range(Full,Forward Start,Partial End,Window Barrier)	n/a	Black(MC)	* Same as HbStar Barrier except barrier touch condition type * All Barrier/Lower Barrier/Upper Barrier/One Barrier/No Touch double barrier touch condition type available

Hybrid / HB Notes (2/6)

Instrument Class & Types	Features	Models	Instrument Properties
HbStar Performance			
HbStar Dual Barrier (1)~(4)HbStar Dual Barrier(Full,Forward Start,Partial End,Window Barrier)	n/a	Black(MC)	* Multi-Underlying available (one,two,three,others) * Quanto available * Capital replication rate available * Full/Forward Start/Partial End/Window Barrier available for each barrier * All Underlying /All Underlying on same day/Any Underlying barrier underlying observation type avaiable for each barrier * Touch/No Touch barrier touch condition type available for each barrier * Hit Date/Expiry Date closing available for each barrier * fixed rate/underlying performance/mixed payoff available * if performance/mixed payoff then, gearing/bonus rate/capped rate/floored rate availble
HbStar Hydra Barrier (1)~(4)HbStar Hydra Barrier(Full,Forward Start,Partial End,Window Barrier) (5)~(8)HbStar Hydra Barrier or/and Digital(Full,Forward Start,Partial End,Window Barrier) (9)~(12)HbStar Hydra Barrier or/and Range(Full,Forward Start,Partial End,Window Barrier) (13)~(16)HbStar Hydra Barrier or/and Multi-Range(Full,Forward Start,Partial End,Window Barrier)	n/a	Black(MC)	* Same as HbStar Barrier except barrier touch condition type * No Touch/First Barrier Touch/First&Second All Touch barrier touch condition type available
HbStar Hydra Double Barrier (1)~(4)HbStar Hydra Double Barrier(Full,Forward Start,Partial End,Window Barrier) (5)~(8)HbStar Hydra Double Barrier or/and Digital(Full,Forward Start,Partial End,Window Barrier) (9)~(12)HbStar Hydra Double Barrier or/and Range(Full,Forward Start,Partial End,Window Barrier) (13)~(16)HbStar Hydra Double Barrier or/and Multi-Range(Full,Forward Start,Partial End,Window Barrier)	n/a	Black(MC)	* Same as HbStar Double Barrier except barrier touch condition type * No Touch/Lower First Touch/Lower First&Second All Touch/Upper First Touch/ Upper First&Second All Touch/Lower First&Upper Second Touch/Lower Second&Upper First Touch barrier touch condition type available

Hybrid / HB Notes

(3/6)

Instrument Class & Types	Features	Models	Instrument Properties
HbStar Autocall			
HbStar Autocal * Same as HbStar Plain for payoff on expiry date * Autocall payoff types (a)Digital Autocall (b)Range Autocall (c)Multi-Range Autocall (d)Digital or Barrier Autocall(Full,-Forward Start,Partial End,Window Barrier) (e)Range or Barrier Autocall(Full,-Forward Start,Partial End,Window Barrier) (f)Multi-Range or Barrier Autocall(Full,Forward Start,Partial End,Window Barrier)	n/a -------------------------------- Callable with Fixed Payoff -------------------------------- Switching Barrier	Black(FDM) Black(MC) -------------------------------- Black(MC) -------------------------------- Black(MC)	* Same as HbStar Plain * Similiar with HbStar Barrier for autocall - if multi-undelying and multi-range, all/worst/best range underlying condition type available - All Underlying /All Underlying on same day/Any Underlying barrier underlying observation type avaiable - Touch/No Touch barrier touch condition type available - Hit Date/Expiry Date closing available - only fixed rate payoff avaiable - different condition & payoff for each autocall date available
HbStar Autocal Range * Same as HbStar Range for payoff on expiry date * Same as HbStar Autocall for Autocall payoff types	n/a -------------------------------- Callable with Fixed Payoff -------------------------------- Switching Barrier	Black(FDM) Black(MC) -------------------------------- Black(MC) -------------------------------- Black(MC)	* Same as HbStar Range * Same as HbStar Autocall for autocall
HbStar Autocal Barrier * Same as HbStar Barrier for payoff on expiry date * Same as HbStar Autocall for Autocall payoff types	n/a -------------------------------- Callable with Fixed Payoff -------------------------------- Switching Barrier	Black(FDM) Black(MC) -------------------------------- Black(MC) -------------------------------- Black(MC)	* Same as HbStar Barrier * Same as HbStar Autocall for autocall
HbStar Autocal Double Barrier * Same as HbStar Double Barrier for payoff on expiry date * Same as HbStar Autocall for Autocall payoff types	n/a	Black(MC)	* Same as HbStar Double Barrier * Same as HbStar Autocall for autocall
HbStar Autocal Dual Barrier * Same as HbStar Dual Barrier for payoff on expiry date * Same as HbStar Autocall for Autocall payoff types	n/a	Black(MC)	* Same as HbStar Dual Barrier * Same as HbStar Autocall for autocall

Hybrid / HB Notes (4/6)

Instrument Class & Types	Features	Models	Instrument Properties
HbStar Coupon Added Autocall			
HbStar Coupon Added Autocall * Same as HbStar Autocall * Coupon payoff types (a) Fixed Coupon (b) Fixed Coupon with digital coupon (c) Fixed Coupon with range coupon (d) Fixed Coupon with multi-range coupon	n/a -------------------------------- Callable with Fixed Payoff	Black(FMD) Black(MC) -------------------------------- Black(MC)	* Same as HbStar Autocall * Similar with HbStar Range for coupon - if multi-undelying and multi-range, all/worst/best range underlying condition type available
HbStar Coupon Added Autocall Range * Same as HbStar Autocall Range * Same as HbStar Coupon Added Autocall for coupon	n/a -------------------------------- Callable with Fixed Payoff	Black(FMD) Black(MC) -------------------------------- Black(MC)	* Same as HbStar Autocall Range * Same as HbStar Coupon Added Autocall for coupon
HbStar Coupon Added Autocall Barrier * Same as HbStar Autocall Barrier * Same as HbStar Coupon Added Autocall for coupon	n/a -------------------------------- Callable with Fixed Payoff	Black(FMD) Black(MC) -------------------------------- Black(MC)	* Same as HbStar Autocall Barrier * Same as HbStar Coupon Added Autocall for coupon
HbStar Coupon Added Autocall Double Barrier * Same as HbStar Autocall Double Barrier * Same as HbStar Coupon Added Autocall for coupon	n/a	Black(MC)	* Same as HbStar Autocall Double Barrier * Same as HbStar Coupon Added Autocall for coupon
HbStar IrAccrual Autocall			
HbStar IrAccrual Autocall * Same as HbStar Plain payoff on expiry date * Autocall payoff types (a)Digital Autocall (b)Range Autocall (c)Multi-Range Autocall	n/a	Black(MC)&HW1(MC)	* Same as HbStar Plain * Similiar with HbStar Range for autocall - if multi-undelying and multi-range, all/worst/best range underlying condition type available - autocall payoff is interest rate single range accruals - different condition & payoff for each autocall date available
HbStar IrAccrual Autocall Range * Same as HbStar Range payoff on expiry date * Same as HbStar IrAccrual Autocall for Autocall payoff types	n/a	Black(MC)&HW1(MC)	* Same as HbStar Range * Same as HbStart IrAccrual Autocall for autocall
HbStar IrAccrual Autocall Barrier * Same as HbStar Barrier payoff on expiry date * Same as HbStar IrAccrual Autocall for Autocall payoff types	n/a	Black(MC)&HW1(MC)	* Same as HbStar Barrier * Same as HbStart IrAccrual Autocall for autocall

Hybrid / HB Notes (5/6)

Instrument Class & Types	Features	Models	Instrument Properties
HbStar Asset Coupon			
HbStar Asset Coupon (1) Performance Coupon with HbStar Digital Condition (2) Performance Coupon with HbStar Range Condition (3) Performance Coupon with HbStar Multi-Range Condition	n/a	Black(MC)	* Multi-Underlying available (one,two,three,others) * Equity, Commodity, Foreign Exchange Underlying available * Quanto available * Capital replication rate available * if multi-undelying, worst/best/aver-age performance type available * if multi-undelying and multi-range, all/worst/best range underlying condition type available * fixed rate/underlying performance/mixed coupon available * if performance/mixed payoff then, gearing/bonus rate/capped rate/floored rate availble
HbStar Accrual(n) Coupon (1)~(3) HbStar Single Range(n1) Accruals(Fixed,Performance,Mixed*n1) IF Asset1 digital condition AND Asset2 range condition AND Asset3 range condition TRUE n accum, FALSE N-n accum. &nsbp n1*fixed(or Asset Performance)+(N-n1)*0(fixed or Asset Performance) (4)~(6) HbStar Multi-Range(n1,n2,...,nn) Accruals(-Fixed,Performance,Mixed*n1)	n/a	Black(MC)	* Multi-Underlying available (one,two,three,others) * Equity, Commodity, Foreign Exchange Underlying available * Quanto available * Capital replication rate available * if multi-undelying and performance payoff, worst/best/average performance type available * if performance/mixed payoff then, gearing/bonus rate/capped rate/floored rate available
HbStar Accrual(n) Coupon with Conditions (1)~(3) HbStar Single Range(n1) Accruals (Fixed, Performance, Mixed * n1) IF Asset1 digital condition AND Asset2 range condition AND Asset3 range condition TRUE n accum. FALSE N-n accum. IF Asset1 digital codntion and Asset3 digital condition TRUE n1*fixed (or Asset Performance)+(N-n1)*0(fixed or Asset Performance) FALSE ... &nsbp(4)~(6)HbStar Multi-Range(n1,n2..nn) Accruals (Fixed,Performance,Mixed*n1)	n/a	Black(MC)	* Same as HbStar Accrual(n) Coupon * if multi-undelying and multi-range, all/worst/best range underlying condition type available * digital/range/multi-range condition available

Hybrid / HB Notes (6/6)

Instrument Class & Types	Features	Models	Instrument Properties
Hybrid Floaters			
OneAsset Performance Floaters (1)Asset Performance (2)Average Performance (3)Highest Performance (4)Lowest Performance	n/a --------------------------------- Callable --------------------------------- Putable	Black(MC) --------------------------------- Black(MC) --------------------------------- Black(MC	* Only One Underlying available * Equity, Commodity, Foreign Exchange Underlying available * Quanto available * Capital replication rate available * gearing/margin/capped rate/floored rate availble * day count convention availble * if average/highest/lowest performance, observation frequency avaiable
Hybrid Condition Fixed Rate Floaters (1)Digital Condition (One Asset, Two Asset, More Asset) (2)Range Condition (One Asset, Two Asset, More Asset) (3)Multi-Range Condition (One Asset, Two Asset, More Asset) (4)Different Condition by each asset *IF Asset1 digital condition AND Asset2 range condition AND Asset3 range condition THEN fixed rate1 ELSE IF	n/a --------------------------------- Callable --------------------------------- Putable	Black(MC) --------------------------------- Black(MC) --------------------------------- Black(MC)	* Multi-Underlying available (one, two, more) * Equity, Commodity, Foreign Exchange Underlying available * Quanto available * Capital replication rate available * only fixed rate with condition available * day count convention availble * multi-condition(if, elseif, else) avaiable
Hybrid Condition Floating Rate Floaters * Same as HbStar Condition Fixed Rate Floaters	n/a --------------------------------- Callable --------------------------------- Putable	Black(MC)&HW1(MC) --------------------------------- Black(MC)&HW1(MC) --------------------------------- Black(MC)&HW1(MC)	* Same as Hybrid Condition Fixed Rate Floaters except only fixed rate * only interset rate vanilla floating rate with condition available * gearing/margin/capped rate/floored rate availble
Hybrid Range Accrual Floaters			
Hybrid Dual Index Range Accrual (1)Asset & Asset Dual Accrual IF Asset1 condition AND Asset2 condition TRUE n accum. FALSE N-n accum. (2)Asset & Inverset Rate Dual Accrual IF Asset condition AND Rate1*g1 condition TRUE n accum. FALSE N-n accum. (3)Asset & Spread Rate Dual Accrual IF Asset condition AND (Rate1*g1-Rate2*g2) condition TRUE n accum. FALSE N-n accum.	n/a --------------------------------- Callable --------------------------------- Putable	Black(MC) --------------------------------- Black(MC) --------------------------------- Black(MC	* Equity, Commodity, Foreign Exchange, Interset Rate Underlying available * Quanto available * if IR underlying, SPOT/CMS/CMT Rate available * Capital replication rate available * only fixed rate with condition available * day count convention availble * (N-n1) fixed rate, floored rate available
Hybrid Dual Index Multi Range Accrual * Same as HbStar Dual Index Range Accrual * n1,n2,...,nn Multi Range accruals	n/a --------------------------------- Callable --------------------------------- Putable	Black(MC) --------------------------------- Black(MC) --------------------------------- Black(MC)	* Same as HbStar Dual Index Range Accrual * n1,n2,...,nn Multi Rnage available

Hybrid / HB Swaps

(1/4)

Instrument Class & Types	Features	Models	Instrument Properties
HbStar Performance Swaps			
HbStar Plain Swaps * Same as HbNotes HbStar Plain * HbStar Plain & Floating Swap	n/a -------------------------------- Callable with Fixed Payoff	Black(FDM) Black(MC) -------------------------------- Black(MC)	* Same As HBNotes HbStar Plain * SPOT/CMS/CMT Rate available * if floating Effective Greeks, Calculation by Parameter Rate Types or By Spot Rate available
HbStar Range Swaps * Same as HbNotes HbStar Range * HbStar Range & Floating Swap	n/a -------------------------------- Callable with Fixed Payoff	Black(FDM) Black(MC) -------------------------------- Black(MC)	* Same As HBNotes HbStar Range * Same As HbStar Plain Swaps for floating
HbStar Barrier Swaps * Same as HbNotes HbStar Barrier * HbStar Barrier & Floating Swap	n/a -------------------------------- Callable with Fixed Payoff	Black(FDM) Black(MC) -------------------------------- Black(MC)	* Same As HBNotes HbStar Barrier * Same As HbStar Plain Swaps for floating
HbStar Double Barrier Swaps * Same as HbNotes HbStar Double Barrier * HbStar Double Barrier & Floating Swap	n/a	Black(MC)	* Same As HBNotes HbStar Double Barrier * Same As HbStar Plain Swaps for floating
HbStar Dual Barrier Swaps * Same as HbNotes HbStar Dual Barrier * HbStar Dual Barrier & Floating Swap	n/a	Black(MC)	* Same As HBNotes HbStar Dual Barrier * Same As HbStar Plain Swaps for floating
HbStar Hydra Barrier Swaps * Same as HbNotes HbStar Hydra Barrier * HbStar Hydra Barrier & Floating Swap	n/a	Black(MC)	* Same As HBNotes HbStar Hydra Barrier * Same As HbStar Plain Swaps for floating
HbStar Hydra Double Barrier Swaps * Same as HbNotes HbStar Hydra Double Barrier * HbStar Hydra Double Barrier & Floating Swap	n/a	Black(MC)	* Same As HBNotes HbStar Hydra Double Barrier * Same As HbStar Plain Swaps for floating
HbStar Autocall Swaps			
HbStar Autocall Swaps * Same as HbNotes HbStar Autocall * HbStar Autocall & Floating Swap	n/a -------------------------------- Callable with Fixed Payoff -------------------------------- Switching Barrier	Black(FDM) Black(MC) -------------------------------- Black(MC) -------------------------------- Black(MC)	* Same As HBNotes HbStar Autocall * Same As HbStar Plain Swaps for floating
HbStar Autocall Range Swaps * Same as HbNotes HbStar Autocall Range * HbStar Autocall Range & Floating Swap	n/a -------------------------------- Callable with Fixed Payoff -------------------------------- Switching Barrier	Black(FDM) Black(MC) -------------------------------- Black(MC) -------------------------------- Black(MC)	* Same As HBNotes HbStar Autocall Range * Same As HbStar Plain Swaps for floating

Hybrid / HB Swaps

(2/4)

Instrument Class & Types	Features	Models	Instrument Properties
HbStar Autocall Swaps			
HbStar Plain Swaps * Same as HbNotes HbStar Autocall Barrier * HbStar Autocall Barrier & Floating Swap	n/a -------------------------------- Callable with Fixed Payoff -------------------------------- Switching Barrier	Black(FDM) Black(MC) -------------------------------- Black(MC) -------------------------------- Black(MC)	* Same As HBNotes HbStar Autocall Barrier * Same As HbStar Plain Swaps for floating
HbStar Autocall Double Barrier Swaps * Same as HbNotes HbStar Autocall Double Barrier * HbStar Autocall Double Barrier & Floating Swap	n/a	Black(MC)	* Same As HBNotes HbStar Autocall Double Barrier * Same As HbStar Plain Swaps for floating
HbStar Autocall Dual Barrier Swaps * Same as HbNotes HbStar Autocall Dual Barrier * HbStar Autocall Dual Barrier & Floating Swap	n/a	Black(MC)	* Same As HBNotes HbStar Autocall Dual Barrier * Same As HbStar Plain Swaps for floating
HbStar Coupon Added Autocall Swaps			
HbStar Coupon Added Autocall Swaps * Same as HbNotes HbStar Coupon Added Autocall * HbStar Coupon Added Autocall & Floating Swap	n/a -------------------------------- Callable with Fixed Payoff	Black(FDM) Black(MC) -------------------------------- Black(MC)	* Same As HBNotes HbStar Coupon Added Autocall * Same As HbStar Plain Swaps for floating
HbStar Coupon Added Autocall Range Swaps * Same as HbNotes HbStar Coupon Added Autocall Range * HbStar Coupon Added Autocall Range & Floating Swap	n/a -------------------------------- Callable with Fixed Payoff	Black(FDM) Black(MC) -------------------------------- Black(MC)	* Same As HBNotes HbStar Coupon Added Autocall Range * Same As HbStar Plain Swaps for floating
HbStar Coupon Added Autocall Barrier Swaps * Same as HbNotes HbStar Coupon Added Autocall Barrier * HbStar Coupon Added Autocall Barrier & Floating Swap	n/a -------------------------------- Callable with Fixed Payoff	Black(FDM) Black(MC) -------------------------------- Black(MC)	* Same As HBNotes HbStar Coupon Added Autocall Barrier * Same As HbStar Plain Swaps for floating
HbStar Coupon Added Autocall Double Barrier Swaps * Same as HbNotes HbStar Coupon Added Autocall Double Barrier * HbStar Coupon Added Autocall Double Barrier & Floating Swap	n/a	Black(MC)	* Same As HBNotes HbStar Coupon Added Autocall Double Barrier * Same As HbStar Plain Swaps for floating

Hybrid / HB Swaps (3/4)

Instrument Class & Types	Features	Models	Instrument Properties
HbStar IrAccrual Autocall Swaps			
HbStar IrAccrual Autocall Swaps * Same as HbNotes HbStar IrAccrual Autocall * HbStar IrAccrual Autocall & Floating Swap	n/a	Black(MC)&HW1(MC)	* Same As HBNotes HbStar IrAccrual Autocall * Same As HbStar Plain Swaps for floating
HbStar IrAccrual Autocall Range Swaps * Same as HbNotes HbStar IrAccrual Autocall Range * HbStar IrAccrual Autocall Range & Floating Swap	n/a	Black(MC)&HW1(MC)	* Same As HBNotes HbStar IrAccrual Autocall Range * Same As HbStar Plain Swaps for floating
HbStar IrAccrual Autocall Barrier Swaps * Same as HbNotes HbStar IrAccrual Autocall Barrier * HbStar IrAccrual Autocall Barrier & Floating Swap	n/a	Black(MC)&HW1(MC)	* Same As HBNotes HbStar IrAccrual Autocall Barrier * Same As HbStar Plain Swaps for floating
HbStar Asset Coupon Swaps			
HbStar Asset Coupon Swaps * Same as HbNotes HbStar Asset Coupon * HbStar Asset Coupon & Floating Swap	n/a	Black(MC)	* Same As HBNotes HbStar Asset Coupon * Same As HbStar Plain Swaps for floating
HbStar Accrual(n) Coupon Swaps * Same as HbNotes HbStar Accrual(n) Coupon * HbStar Accrual(n) Coupon & Floating Swap	n/a	Black(MC)	* Same As HBNotes HbStar Accrual(n) Coupon * Same As HbStar Plain Swaps for floating
HbStar Accrual(n) Coupon with Conditions Swaps * Same as HbNotes HbStar Accrual(n) Coupon with Conditions * HbStar Accrual(n) Coupon & Floating Swap	n/a	Black(MC)	* Same As HBNotes HbStar Accrual(n) Coupon with Condition * Same As HbStar Plain Swaps for floating

Hybrid / HB Swaps

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Instrument Class & Types	Features	Models	Instrument Properties
Hybrid Floaters Swaps			
OneAsset Performance Floaters Swaps * Same as HbNotes OneAsset Performance Floaters * HbStar OneAsset Performance Floaters & Floating Swap	n/a -------------------------------- Callable -------------------------------- Putable	Black(MC) -------------------------------- Black(MC) -------------------------------- Black(MC)	* Same As HBNotes HbStar OneAsset Performance Floaters * Same As HbStar Plain Swaps for floating
Hybrid Condition Fixed Rate Floaters Swaps * Same as HbNotes Hybrid Condition Fixed Rate Floaters * Hybrid Condition Fixed Rate Floaters & Floating Swap	n/a -------------------------------- Callable -------------------------------- Putable	Black(MC) -------------------------------- Black(MC) -------------------------------- Black(MC)	* Same As HBNotes Hybrid Condition Fixed Rate Floaters * Same As HbStar Plain Swaps for floating
Hybrid Condition Floating Rate Floaters Swaps * Same as HbNotes Hybrid Condition Floating Rate Floaters * Hybrid Condition Floating Rate Floaters & Floating Swap	n/a -------------------------------- Callable -------------------------------- Putable	Black(MC) -------------------------------- Black(MC) -------------------------------- Black(MC)	* Same As HBNotes Hybrid Condition Floating Rate Floaters * Same As HbStar Plain Swaps for floating
Hybrid Range Accrual Floaters Swaps			
Hybrid Dual Index Range Accrual Swaps * Same as HbNotes Hybrid Dual Index Range Accrual * Hybrid Dual Index Range Accrual & Floating Swap	n/a -------------------------------- Callable -------------------------------- Putable	Black(MC)&HW1(MC) -------------------------------- Black(MC)&HW1(MC) -------------------------------- Black(MC)&HW1(MC)	* Same As HBNotes Hybrid Dual Index Range Accrual * Same As HbStar Plain Swaps for floating
Hybrid Dual Index Multi Range Accrual Swaps * Same as HbNotes Hybrid Dual Index Multi Range Accrual * Hybrid Dual Index Multi Range Accrual & Floating Swap	n/a -------------------------------- Callable -------------------------------- Putable	Black(MC)&HW1(MC) -------------------------------- Black(MC)&HW1(MC) -------------------------------- Black(MC)&HW1(MC)	* Same As HBNotes Hybrid Dual Index Multi Range Accrual * Same As HbStar Plain Swaps for floating

Credit / CR Notes

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Instrument Class & Types	Features	Models	Instrument Properties
Single Name CLN			
Single Name Fixed CLN		Gaussian-Copula Gaussian-Copula(MC)	* Recovery Rate/Recovery Amount/Final Price Credit Amount available * Credit Amount FX Hedge avaiable
Single Name Floater CLN		GC&Forecast Method GC&HW1(Tree) GC&HW1(MC) GC(MC)&Forecast Method GC(MC)&HW1(Tree) GC(MC)&HW1(MC)	* Same as Single Name Fixed CLN
Single Name Average Floater CLN		GC&Forecast Method GC&HW1(Tree) GC&HW1(MC) GC(MC)&Forecast Method GC(MC)&HW1(Tree) GC(MC)&HW1(MC)	* Same as Single Name Fixed CLN
First to Default CLN			
First to Default Fixed CLN		Gaussian-Copula Gaussian-Copula(MC)	* Recovery Rate/Recovery Amount/Final Price Credit Amount available * Credit Amount FX Hedge avaiable
First to Default Floater CLN		GC&Forecast Method GC&HW1(Tree) GC&HW1(MC) GC(MC)&Forecast Method GC(MC)&HW1(Tree) GC(MC)&HW1(MC)	* Same as First to Default Fixed CLN
First to Default Average Floater CLN		GC&Forecast Method GC&HW1(Tree) GC&HW1(MC) GC(MC)&Forecast Method GC(MC)&HW1(Tree) GC(MC)&HW1(MC)	* Same as First to Default Fixed CLN
Second to Default CLN			
Second to Default Fixed CLN		Gaussian-Copula Gaussian-Copula(MC)	* Recovery Rate/Recovery Amount/Final Price Credit Amount available * Credit Amount FX Hedge avaiable
Second to Default Floater CLN		GC&Forecast Method GC&HW1(Tree) GC&HW1(MC) GC(MC)&Forecast Method GC(MC)&HW1(Tree) GC(MC)&HW1(MC)	* Same as Second to Default Fixed CLN
Second to Default Average Floater CLN		GC&Forecast Method GC&HW1(Tree) GC&HW1(MC) GC(MC)&Forecast Method GC(MC)&HW1(Tree) GC(MC)&HW1(MC)	* Same as Second to Default Fixed CLN

Credit / CR Swaps

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Instrument Class & Types	Features	Models	Instrument Properties
Single Name CDS			
Single Name CDS (1)Periodic Coupon Premium (2)Simple Coupon Premium (3)Compounding Coupon Premium		Gaussian-Copula Gaussian-Copula(MC)	* Recovery Rate/Recovery Amount/Final Price Credit Amount available * Credit Amount FX Hedge avaiable
First to Default CDS			
First to Default CDS * Same as Single Name CDS		Gaussian-Copula Gaussian-Copula(MC)	* Same as Single Name CDS
Second to Default CDS			
Second to Default CDS * Same as Single Name CDS		Gaussian-Copula Gaussian-Copula(MC)	* Same as Single Name CDS