SampleMT

Q2											
Yield	4%										
Coupon	5%										
Frequency	2										
t	pv(c)	t*pv(c)	t*(t+1/2)*pv(c)								
0.5	0.0245098039	0.0122549	0.0122549								
1	0.0240292195	0.02402922	0.03604383								
1.5	0.0235580584	0.03533709	0.07067418								
2	0.9469415617	1.89388312	4.73470781								
sum	1.0190386435	1.96550433	4.85368071								
Dmac	1.928782922										
Dmod	1.890963649										
Dd	0.0192696503										
C	4.5780465804										
ZCB	P	Dmac	Dmod	Dd	C						
0.5	0.9803921569	0.5	0.49019608	0.00480584	0.48058439						
1	0.9611687812	1	0.98039216	0.00942322	1.44175317						
1.5	0.9423223345	1.5	1.47058824	0.01385768	2.88350634						
pv	0.9803921569	0.96116878	0.94232233		1.01903864	x	0.99088039				
Dd	0.0048058439	0.00942322	0.01385768		0.01926965	y	-2.930594				
C	0.0047116117	0.01385768	0.02717192		0.04665206	z	3.03970588				
Q6											
tree	semi-annual										
5%	7.80%	9%									
	3%	5%									
		2%									
a)					**b)**	swap			**c)&d)**	cancelable	
N	100				c	6%			pay fix		
c	6%				N	100			CF		

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SampleMT

T	1.5				T	1			t=0	t=0.5	t=1
american puttable					CF					-0.5	0.9
bond pricing tree					t=0	t=0.5	t=1				-1.5
K	100					0.5	-0.9		P		
101.156763	98.677766208	98.5645933	100				1.5		-0.06525975	0.86621752	
	102.69359749	100.487805	100		P					0	
		101.980198	100		0.78615366	-0.86621752					
			100			1.47783251			receive fix		
puttable cash flow tree									1.20869879	0	
0	1.3222337924	1.4354067	0							1.47783251	
	0	0	0								
		0	0								
			0								
puttable prcing tree											
0.64499209	1.3222337924	1.4354067	0								
	0	0	0								
		0	0								
			0								

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y	p	sigma		
1	95	1.50%		
2	90			
3	85			
4	80			
Interest Tree				
t0-1	**t1-2**	**t2-3**	**t3-4**	
0.05263158	7.077%	0.08946152	10.877%	
	0.04076867	0.05946152	0.07877302366	
		0.02946152	0.04877302366	
			0.01877302366	
y=	2			
r1	7.077%	obj	-1.961553E-07	
m1	0.31%			
89.9999998	93.3908533	100		
	96.0828305	100		
		100		
y=	3			
r1	8.946%	obj	-1.425675E-07	
m1	0.37%			
84.9999999	86.9356947	91.7884649	100	
	92.0116734	94.387572	100	
		97.1381625	100	
			100	
y=	4			
r1	10.877%	obj	-7.796264E-08	
m1	0.43%			
79.9999999	80.6344095	83.9349016	90.1897844427	100

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	87.786643	88.7466976	92.6979056822	100
		93.9844782	95.3495158092	100
			98.1572908561	100
				100

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	years	0	1	2	3	4
	r	5.00%	4.00%	3.00%	2.00%	
			6.00%	5.00%	4.00%	
				7.00%	6.00%	
					8.00%	
	Z1	95.24	100.00			
	Z2	90.71	96.15	100.00		
			94.34	100.00		
	Z3	86.42	92.46	97.09	100.00	
			89.01	95.24	100.00	
				93.46	100.00	
	Z4	82.34	88.93	94.27	98.04	100.00
			83.99	90.71	96.15	100.00
				87.35	94.34	100.00
					92.59	100.00
	What is the price of a 4 year bond that is callable 2 years from now for 92?					
	K	92				
	callable	81.83	87.84	92.00	98.04	100.00
			83.99	90.71	96.15	100.00
				87.35	94.34	100.00

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					92.59	100.00
	What is the value of a 2 year European call on the 4 year bond?					
	C	0.52	1.09	2.27		
			0.00	0.00		
				0.00		
	Verify that the price of the callable bond is indeed what we computed before!					
	callable	81.83				

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	years	0	1	2	3	4						
	r	5.00%	4.00%	3.00%	2.00%							
			6.00%	5.00%	4.00%							
				7.00%	6.00%							
					8.00%							
	Z1	95.24	100.00									
	Z2	90.71	96.15	100.00								
			94.34	100.00								
	Z3	86.42	92.46	97.09	100.00							
			89.01	95.24	100.00							
				93.46	100.00							
	Z4	82.34	88.93	94.27	98.04	100.00						
			83.99	90.71	96.15	100.00						
				87.35	94.34	100.00						
					92.59	100.00						
	What is the value of a 2 year European put option on a 4 year bond?											
	K	92										
	P	1.63	0.62	0.00								
			2.80	1.29								
				4.65								
	What is the value if the option is American?											
	P	9.66	3.07	0.00								
			8.01	1.29								
				4.65								
	Now suppose that the option is American, but instead of giving the 4 year bond it gives a bond with 2 years of maturity left independently of the exercise date											
	P	1.72	0.62	0.00								

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Options

			2.99	1.29								
				4.65								

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