that the Longstaff-Schwartz algorithm is powerful yet simple enough to price multi-dimensional path-dependence interest rate products such as Bermudan swaption.

S	σ	**T**	**FD American**	**LS American**	**Analytical European**	**Difference**
16	0.25	1	4.153	4.069	3.653	0.084
16	0.25	2	4.294	4.258	3.583	0.037
16	0.45	1	5.035	5.080	4.853	-0.045
16	0.45	2	5.593	5.801	5.381	-0.208
18	0.25	1	2.652	2.610	2.399	0.041
18	0.25	2	2.975	2.970	2.581	0.005
18	0.45	1	3.890	3.997	3.832	-0.107
18	0.45	2	4.575	4.876	4.555	-0.301
20	0.25	1	1.610	1.596	1.492	0.013
20	0.25	2	2.031	2.055	1.826	-0.024
20	0.45	1	3.175	3.114	3.007	0.061
20	0.45	2	3.973	4.125	3.861	-0.152
22	0.25	1	0.933	0.925	0.886	0.007
22	0.25	2	1.367	1.403	1.274	-0.036
22	0.45	1	2.439	2.408	2.349	0.031
22	0.45	2	3.339	3.468	3.279	-0.129

Table 4.1: Comparison of Finite Difference and Longstaff-Schwartz algorithm

As always, S denotes the spot price, T denotes the maturity and σ denotes the volatility. Other parameters in this comparison are interest rate $r = 0.05$, strike price $K = 20$. The 'Difference' column refers to the difference in early exercise value between two methods and early exercise value is the difference between American option value and analytical European option value. The benefit of employing the Longstaff-Schwartz algorithm here may not be so obvious, indeed, the major strength of Longstaff-Schwartz algorithm is to price multi-dimensional path dependent products; a detailed example of this case is in Section 5.2.2.