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Jinjin Qian* (qianj@lafayette.edu), Farinon Center Box 7419, Lafayette College, Easton, PA 18042, and **Lindsay Bryant**. *Pricing Convertible Bonds*. Preliminary report.

This project uses two different models to price convertible bonds and compares their results. A convertible bond is an investment composed partly of debt and partly of equity. The equity factor is usually modeled by a Geometric Brownian motion, and the debt factor is modeled deterministically or by a similar process as Geometric Brownian motion. The traditional Black Schole differential equations can not be used in the pricing because of various options of convertible bonds. Our first model implements George Phillips Approach, which involves a deterministic interest rate. In our second model, the randomness of both the debt factor (interest rate) and the equity factor (underlying stock price) is taken care of. This model is based on Professor Donald Chambers and Professor Qin Lu's recent submitted work. Compared with other existing two-factor models, there are three primary differences: correlation between the interest rate and stock price is included and the risk neutral probability is adjusted accordingly; the exposition and computer efficiency are simplified by recombining the nodes of the tree; default risk is taken into account. EXCEL spreadsheet is used to implement the algorithm of the first model and Mathematica is used for the second one. (Received September 26, 2006)