1086-J5-80 **Dale T Smith***, Fiserv., Risk & Compliance, 107 Technology Pkwy, Norcross, GA 30092. *Bank Capital Models and Bivariate Normal Probability Calculations.* Preliminary report.

We begin our discussion of bank capital models by explaining why banks hold reserves against their assets, followed by an outline of the model used to simulate losses, the one factor capital model. The goal is to calculate expected loss, unexpected loss, and economic capital. A key calculation is the default correlation, which is an attempt to quantify whether borrowers will default together. We point out why the bivariate normal probability integral is important to default correlation and why good algorithms are important. Current work involves evaluating alternatives and extending current algorithms for bivariate normal probabilities to determine which ones are faster and preserve double precision. (Received July 09, 2012)