Purpose
– The purpose of this research is to introduce a class of FRC (fuzzy random coefficient) volatility models and to study their moment properties. Fuzzy option values and the superiority of fuzzy forecasts over minimum mean-square forecasts are also discussed in some detail.

Design/methodology/approach
– Fuzzy components are assumed to be triangular fuzzy numbers. Buckley's data-driven method is used to determine the spread of the triangular fuzzy numbers by using standard errors of the estimated parameters.

Findings
– The fuzzy kurtosis of various volatility models is obtained in terms of fuzzy coefficients. Fuzzy option values and fuzzy forecasts are illustrated with examples. Fuzzy forecast intervals are narrower than the corresponding MMSE forecast intervals.

Originality/value
– This paper will be of value to econometricians and to anyone with an interest in financial volatility models.