1125-14-2339 **Lek-Heng Lim** (lekheng@galton.uchicago.edu) and **Jose Israel Rodriguez*** (joisro@uchicago.edu). *Numerical algebraic geometry in econometrics and the GMM degree.*

In econometrics, the generalized method of moments (GMM) combines data with population moment conditions to estimate the unknown population parameters. For Pearson's classic method of moments, one determines the common root(s) of n nonlinear polynomials, called cost functions, where n is the number of population parameters. In GMM, one has more cost functions than population parameters. To account for this, the common root condition is replaced by minimizing a positive definite quadratic form of cost functions. The quadratic form may have multiple local minima. However, the number of local extrema is bounded above by the GMM degree, a generalization of maximum likelihood and method of moments degree. (Received September 20, 2016)