GAUSS Computer Programs $\qquad$ March 2012

This file lists the GAUSS computer programs that were used to carry out the numerical results reported in Andrews and Barwick (2012) "Inference for Parameters Defined by Moment Inequalities: A Recommended Moment Selection Procedure," *Econometrica,* 80, forthcoming.

Note that the numerical results reported in Andrews and Barwick (2012) were computed using the GAUSS programs contained in the zip file, not the Matlab programs.

- rmsprg_final: This program is designed for users who want to carry out a test using the recommended RMS test (or any of several related tests). It was not used to compute any of the numerical results.

- etaprg1_final: This program was used when computing the $\eta_2(p)$ values based on 500 randomly generated variance matrices.

- etaprg2_final: This program was used when computing the $\eta_2(p)$ values based on 43 fixed variance matrices.

- finsamp3_final: This programs was used to compute all of the finite sample results reported in Tables III, S-IV, S-V, and S-VI.

- kappaprg_final: This program was used for many purposes. They include: (i) computation of the best ε value for use with the AQLR statistic, as reported in Table S-II, (ii) assessment of how well the choice $\varepsilon = .012$ based on $p = 2$ performs for $p = 4, 10$, as reported in Table S-II, (iii) determination of the best κ values and the corresponding $\eta_1(\delta)$ values for the AQLR/t-Test/κAuto test for $p = 2$, as reported in Table I of Andrews and Barwick (2012), (iv) asymptotic power comparisons based on best κ values for a variety of test statistics and the three main variance matrices Ω_{Neg}, Ω_{Zero}, and Ω_{Pos}, as reported in Tables II, S-XII, and S-XIII, (v) determination of the asymptotic MNRP's and power for a variety of tests when $\kappa = 2.35$ and $\kappa = 1.87$ (which are BIC and HQIC values, respectively), as reported in Tables S-X, S-XI, S-XII, and S-XIII, (vi) asymptotic power comparisons for a variety of tests and the power envelope for 19 Ω matrices, as reported in Tables S-I and S-IX, (vii) asymptotic power comparisons for a variety of tests for singular variance matrices, as reported in Table S-III, (viii) determination of the pure/constant ELR critical values for the ELR tests whose

MNRP's and power are reported in Tables S-XII and S-XIII, (ix) determination of the asymptotic MNRP's and power for the ELR test with pure/constant critical values, as reported in Tables S-XII and S-XIII, and (x) changes in asymptotic MNRP's when $\eta_2(p)$ is increased or decreased by 25% or 50%, as reported in Table S-XX.

- powprg_final: This program was used to compute the difference in average asymptotic power between the AQLR/t-Test/κAuto and AQLR/t-Test/κBest tests for 500 randomly generated Ω matrices, as reported in Section 6.1.2.

- rmsprg_fs_short_final: This program was not used to compute any of the results reported in Andrews and Barwick (2012) or this Supplement. It is a shortened version of finsamp3_final that computes finite sample results for the main tests of interest: AQLR/t-Test/κAuto implemented using the asymptotic distribution or the bootstrap and MMM/t-Test/$\kappa = 2.35$.

- sizediffprg11_final: This program computes the differences in MNRP's for a variety of tests when the mean vectors μ considered are (i) all vectors consisting of $0's$ and $\infty's$ and (ii) these μ vectors plus randomly generated μ vectors, as reported in Table S-XVIII and Section 7.6.1.

- sizediffprg22_final: This program computes the differences in MNRP's for a variety of tests when the mean vectors μ considered are (i) all vectors consisting of $0's$ and $\infty's$ and (ii) these μ vectors plus a full grid of μ vectors, or a large partial grid of μ vectors, or a small partial grid of μ vectors, as reported in Table S-XVII, the first column of results in Table S-XIX, and Section 7.6.1.

- sizediffprg22_LF_final: This program computes the same differences as sizediffprg22_final but for the least favorable variance matrices that were determined when calculating $\eta_2(p)$ using 500 random variance matrices for $p = 3, ..., 10$. These results are reported in the last column of Table S-XIX.

- sizediffprg22_finsamp_final: This program computes the differences in finite-sample MNRP's for a variety of tests when the mean vectors μ considered are (i) all vectors consisting of $0's$ and $\infty's$ and (ii) these μ vectors plus a full grid of μ vectors, or a large partial grid of μ vectors, or a small partial grid of μ vectors, as reported in Tables S-XXI and S-XXII and Section 7.6.3.