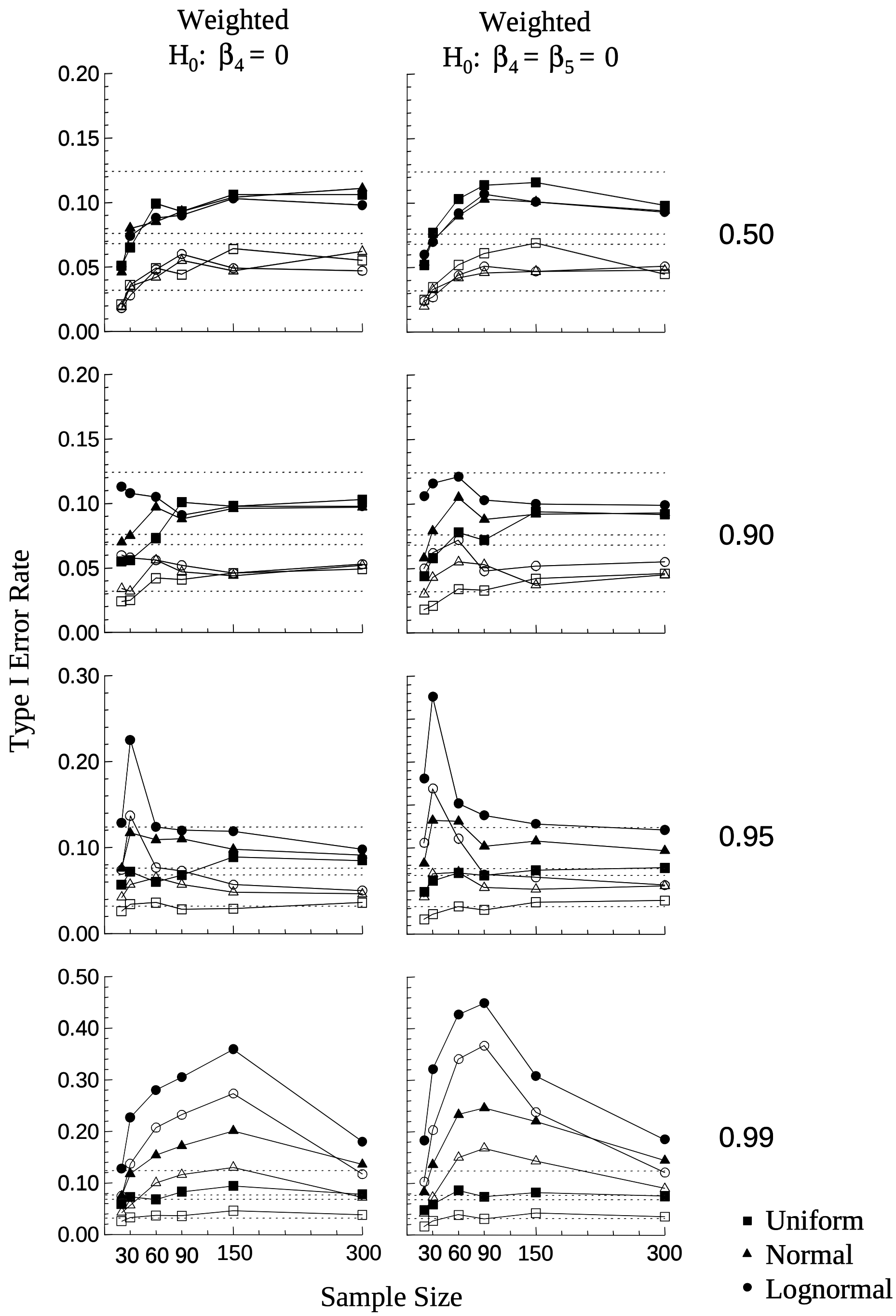
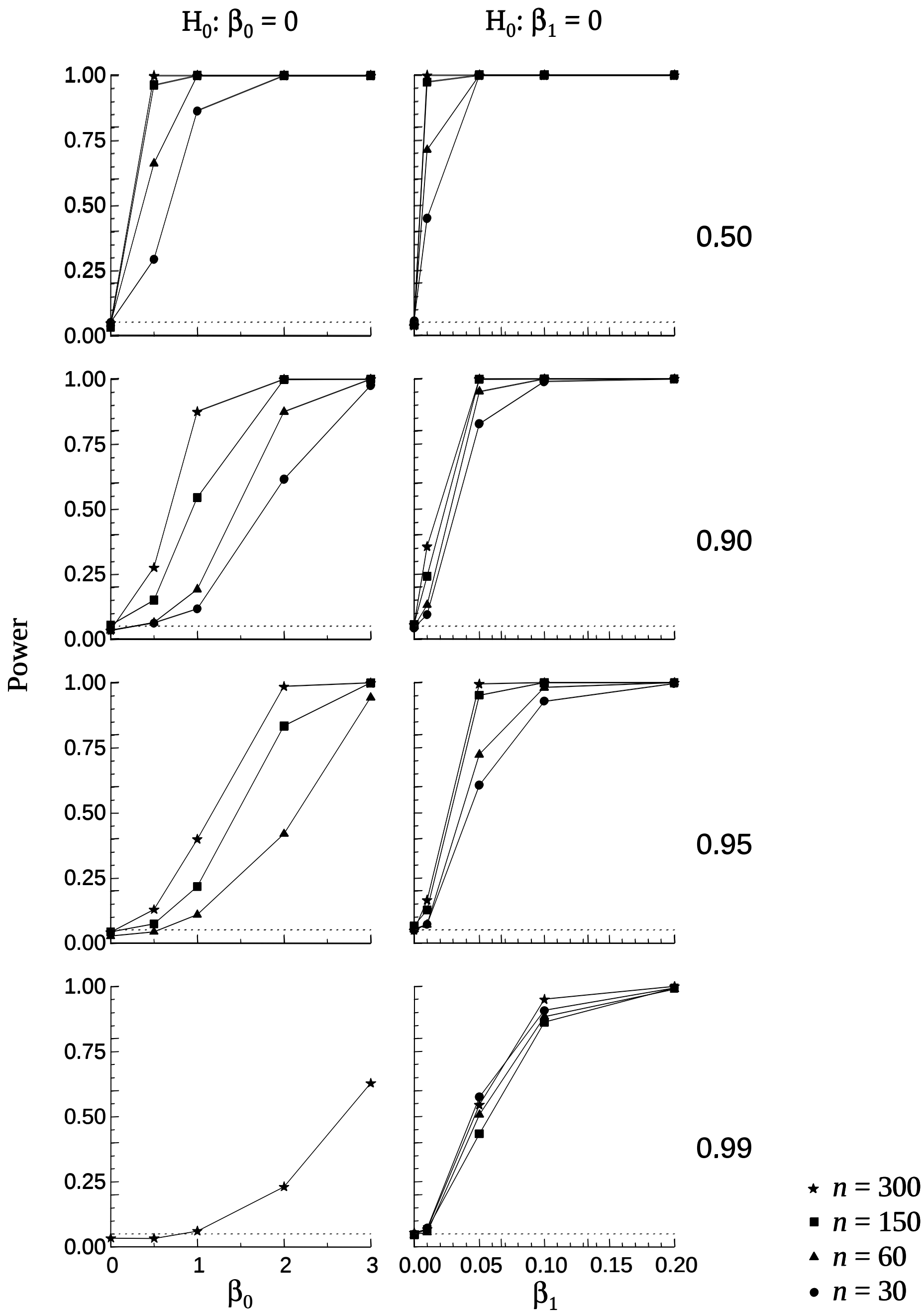
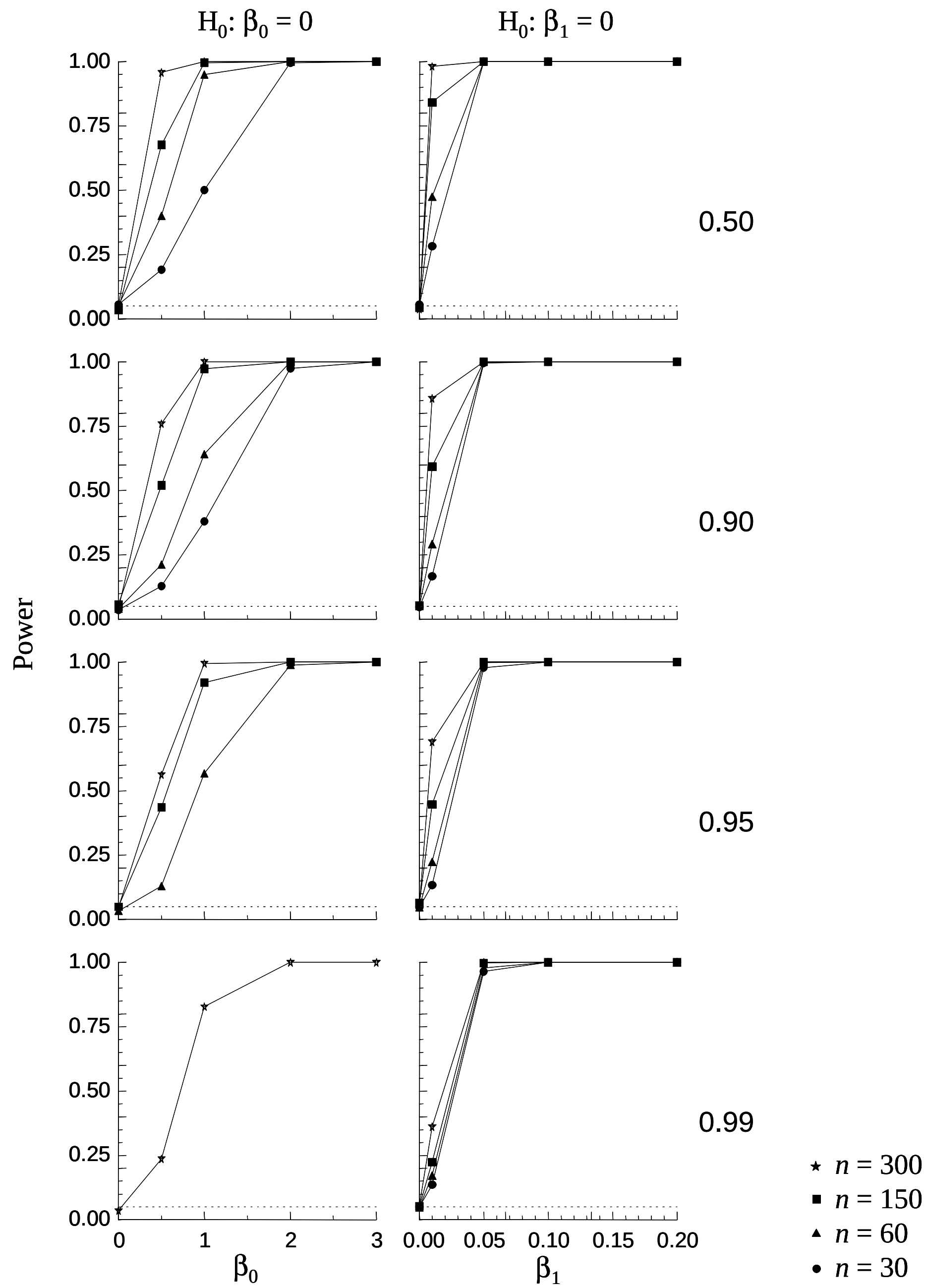


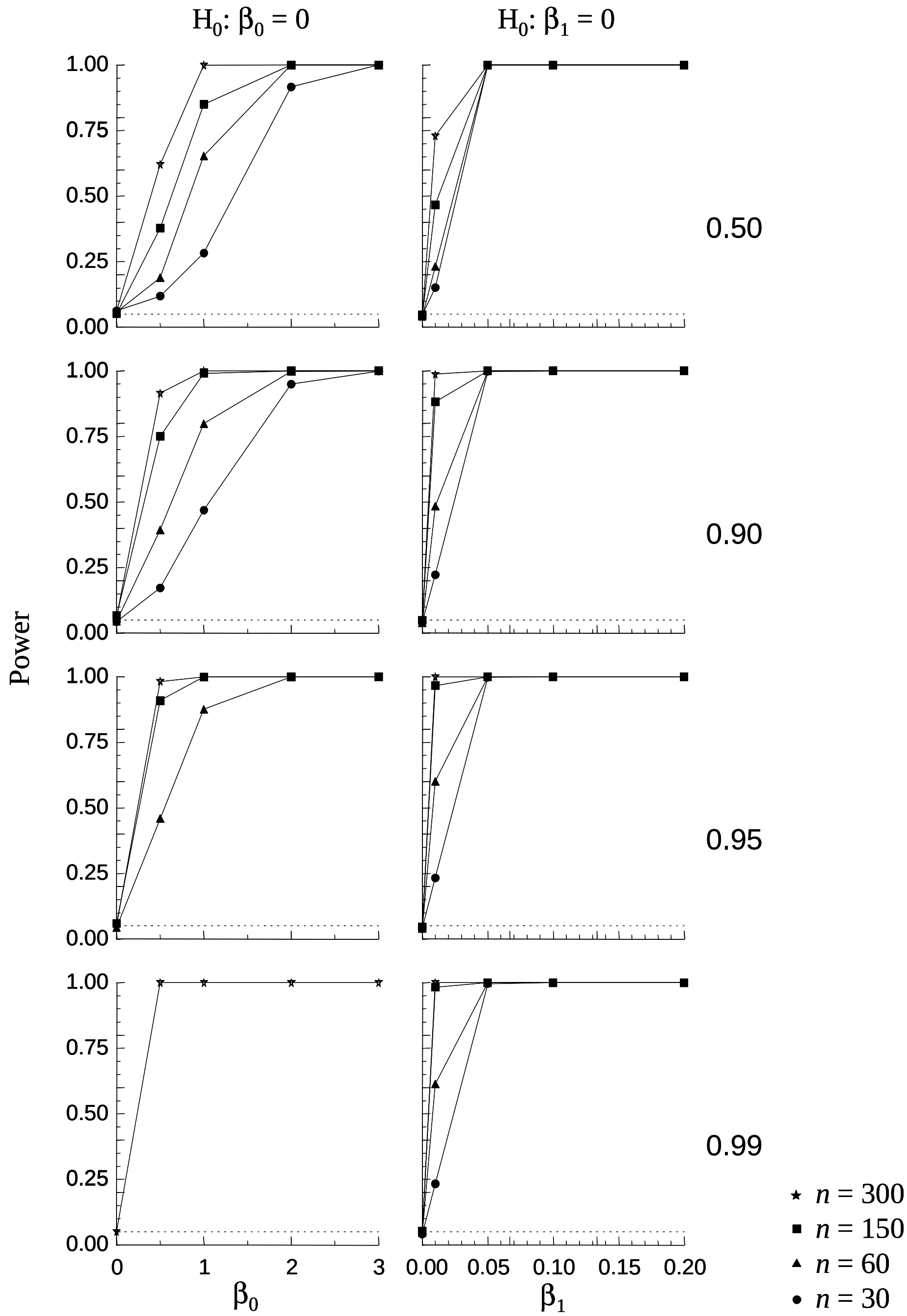
Appendix A1. Estimated Type I error rates for $\alpha = 0.05$ (open) and 0.10 (solid); for the permutation D test for H_0: $\beta_4 = 0$ and H_0: $\beta_4 = \beta_5 = 0$ (delete zero residuals reduced dimension regression) for heterogeneous lognormal (circles), normal (triangles) and uniform (squares) error distributions in the weighted model $wy = w(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + (1 + \gamma X_1)\varepsilon)$, $\gamma = 0.05$, $w = (1 + \gamma X_1)^{-1}$; for τ = {0.50, 0.90, 0.95, and 0.99}; and for n = 20, 30, 60, 90, 150, and 300. Fine dotted lines are 99% binomial confidence intervals around $\alpha = 0.05$ and 0.10 for 1,000 random samples used at each combination of error distribution, H_0, n, and quantile.



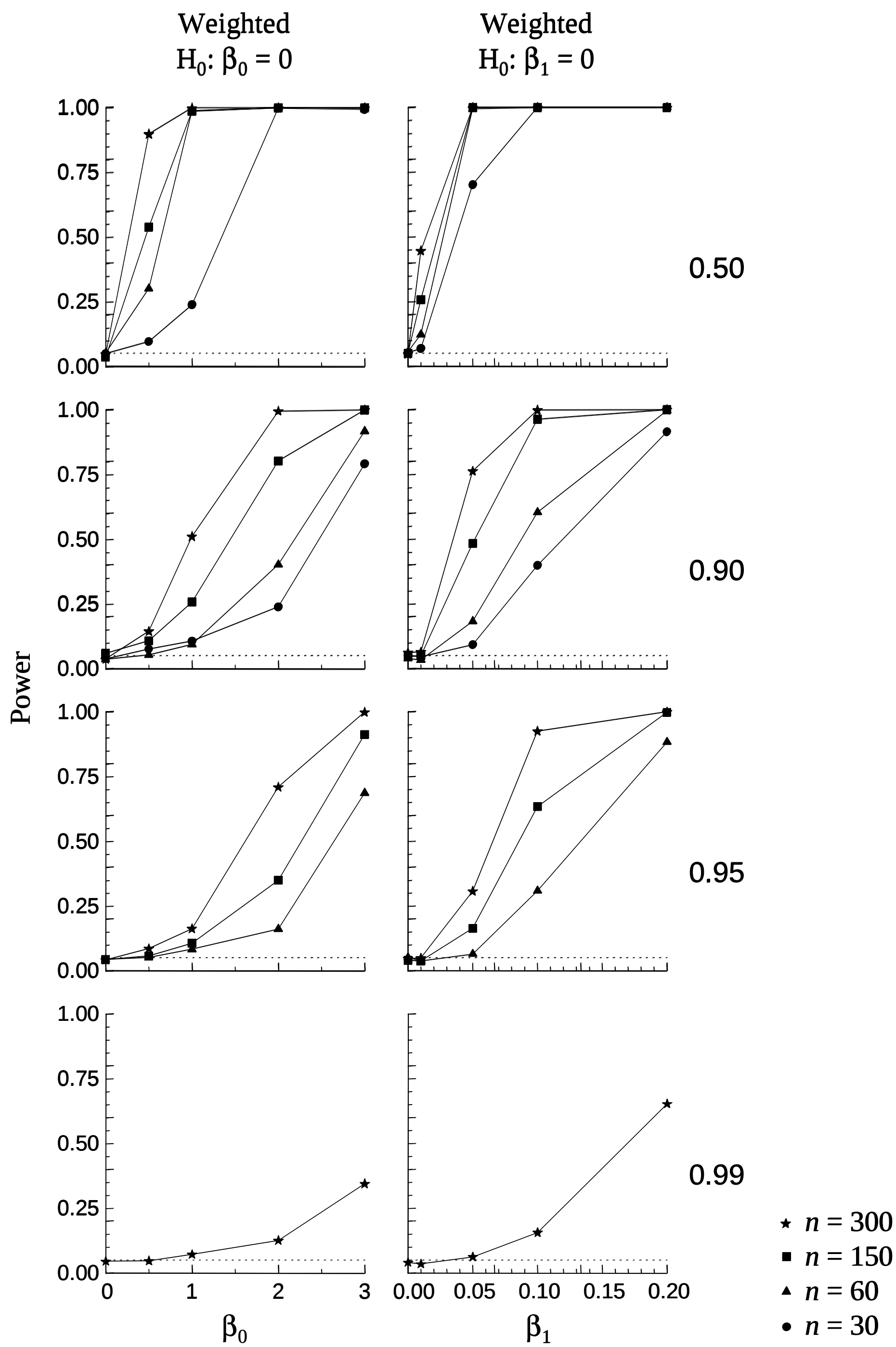
Appendix A2. Estimated power for $\alpha = 0.05$ for the permutation *D* test for homogeneous lognormal error distribution; for H_0: $\beta_0 = 0$ (double permutation) and H_0: $\beta_1 = 0$ in the model $y = \beta_0 + \beta_1 X_1 + \varepsilon$; for $\beta_0 = 0.0$, 0.5, 1.0, 2.0, and 3.0 and for $\beta_1 = 0.0$, 0.01, 0.05, 0.10, and 0.20; for $\tau = \{0.50, 0.90, 0.95, \text{and } 0.99\}$; and for $n = 30$ (circle), 60 (triangle), 150 (square), and 300 (star). Sample sizes that had no power $>\alpha$ were not graphed. 1,000 random samples were used at each combination of effect size, *n*, and quantile.



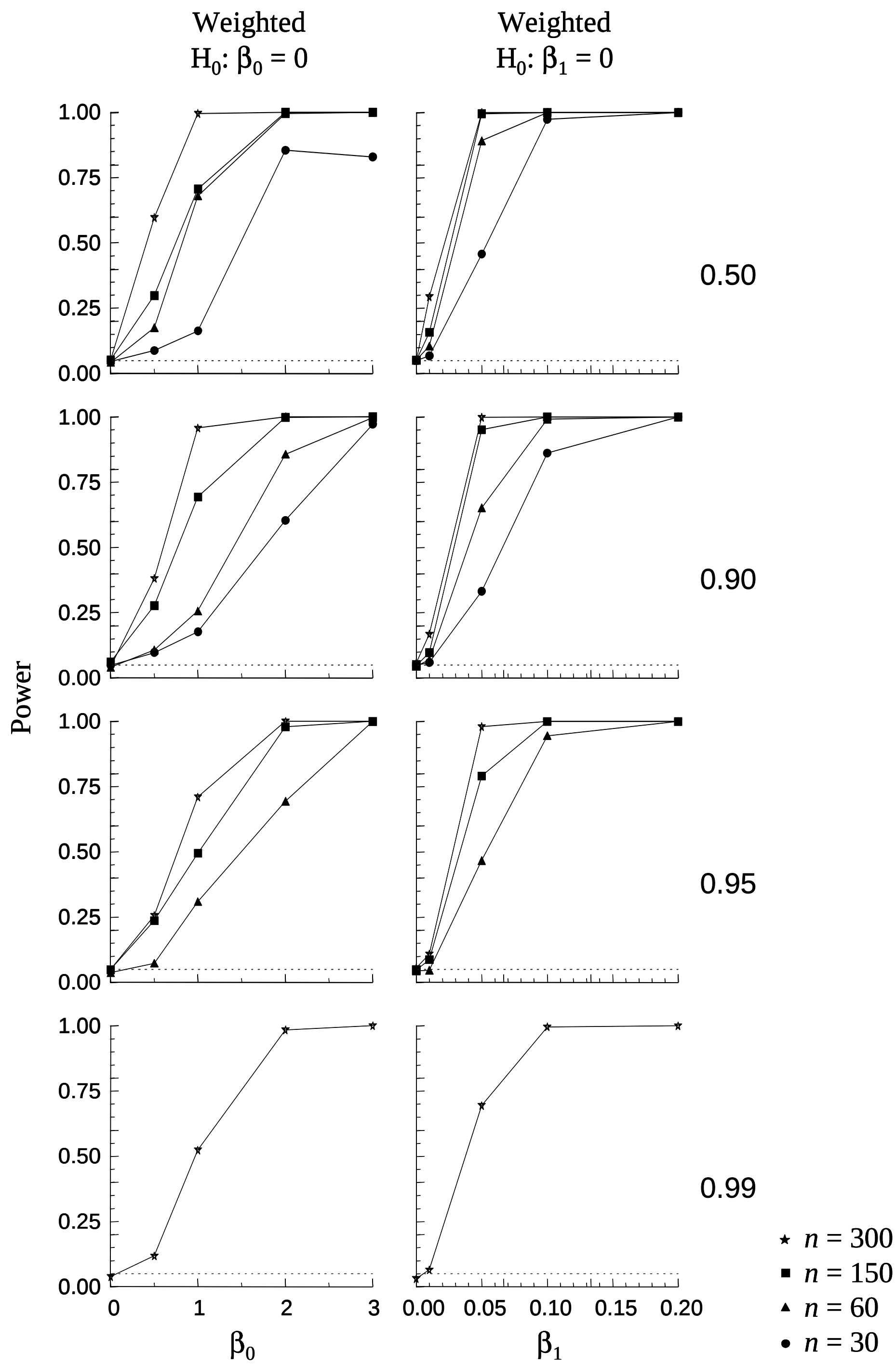
Appendix A3. Estimated power for $\alpha = 0.05$ for the permutation *D* test for homogeneous normal error distribution; for H_0: $\beta_0 = 0$ (double permutation) and H_0: $\beta_1 = 0$ in the model $y = \beta_0 + \beta_1 X_1 + \varepsilon$; for β_0 = 0.0, 0.5, 1.0, 2.0, and 3.0 and for β_1 = 0.0, 0.01, 0.05, 0.10, and 0.20; for τ = {0.50, 0.90, 0.95, and 0.99}; and for *n* = 30 (circle), 60 (triangle), 150 (square), and 300 (star). Sample sizes that had no power >α were not graphed. 1,000 random samples were used at each combination of effect size, *n*, and quantile.



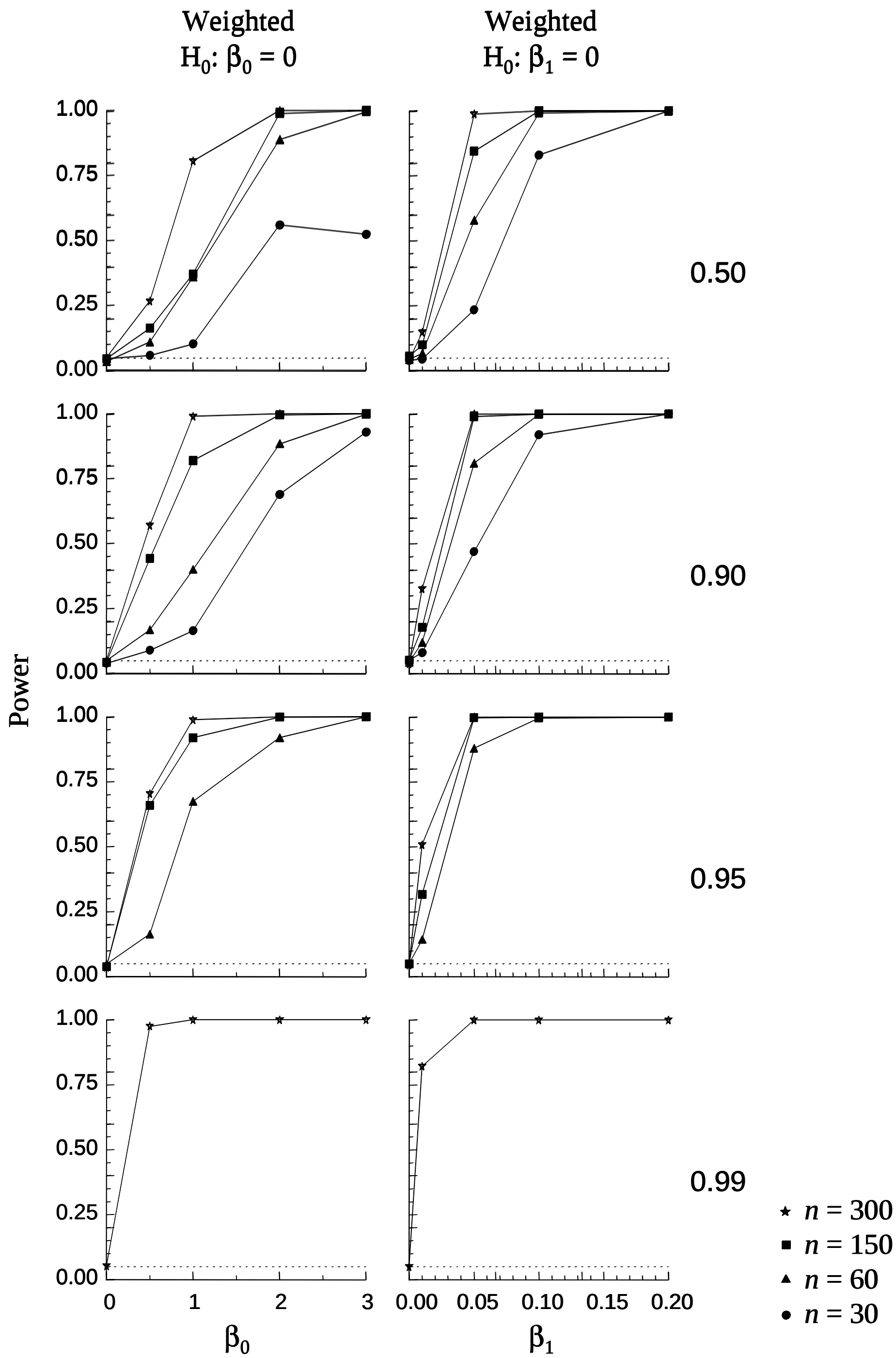
Appendix A4. Estimated power for $\alpha = 0.05$ for the permutation *D* test for homogeneous uniform error distribution; for H_0: $\beta_0 = 0$ (double permutation) and H_0: $\beta_1 = 0$ in the model $y = \beta_0 + \beta_1 X_1 + \varepsilon$; for $\beta_0 = 0.0, 0.5, 1.0, 2.0$, and 3.0 and for $\beta_1 = 0.0, 0.01, 0.05, 0.10$, and 0.20; for $\tau = \{0.50, 0.90, 0.95, \text{and } 0.99\}$; and for $n = 30$ (circle), 60 (triangle), 150 (square), and 300 (star). Sample sizes that had no power $>\alpha$ were not graphed. 1,000 random samples were used at each combination of effect size, *n*, and quantile.



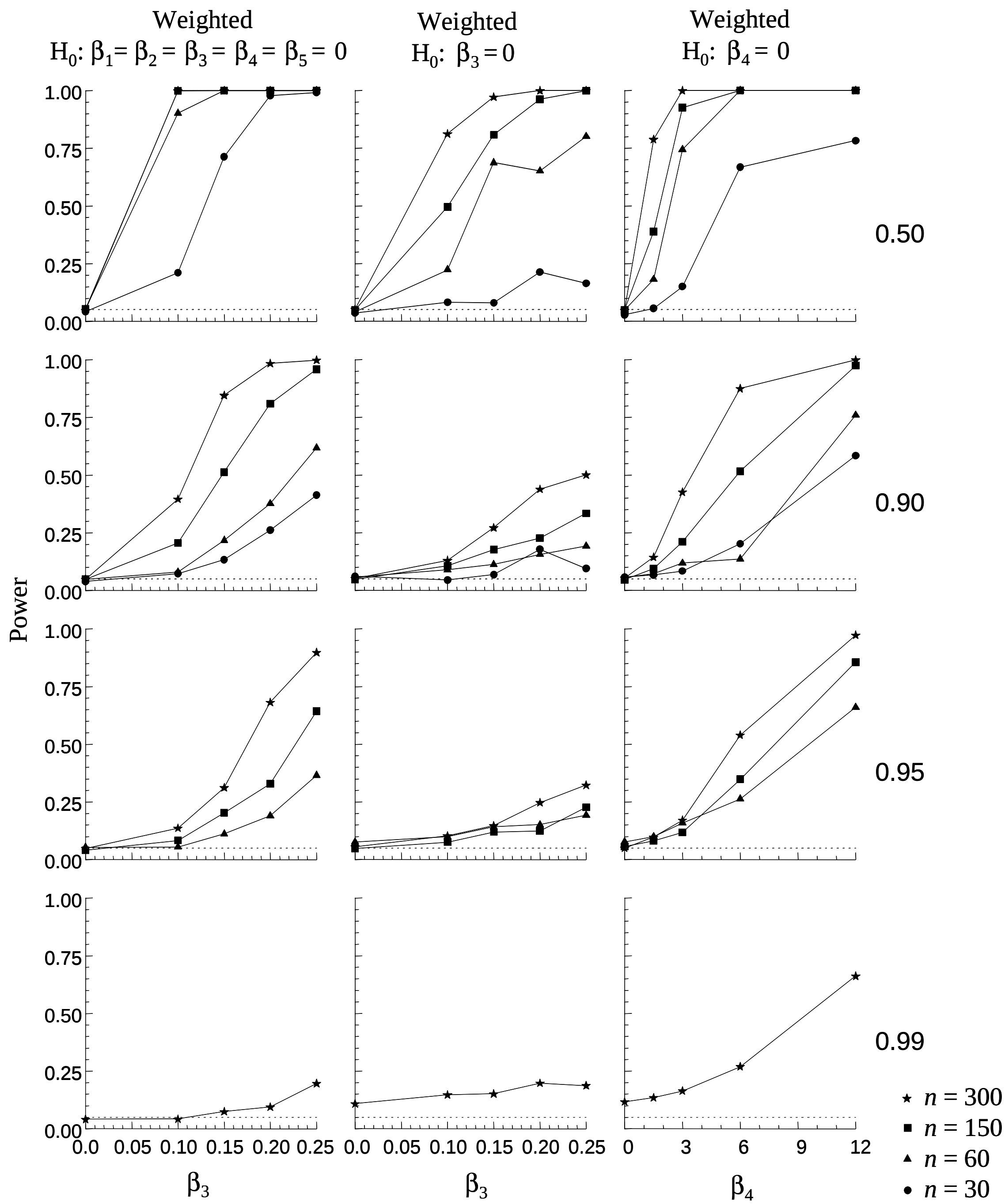
Appendix A5. Estimated power for $\alpha = 0.05$ for the double permutation *D* test; for heterogeneous lognormal error distributions; for H_0: $\beta_0 = 0$ and H_0: $\beta_1 = 0$ in the weighted model $wy = w(\beta_0 + \beta_1 X_1 + (1 + \gamma X_1)\varepsilon)$, $\gamma = 0.05$, and $w = (1 + \gamma X_1)^{-1}$; for β_0 = 0.0, 0.5, 1.0, 2.0, and 3.0 and for β_1 = 0.0, 0.01, 0.05, 0.10, and 0.20; for τ = {0.50, 0.90, 0.95, and 0.99}; and for n = 30 (circle), 60 (triangle), 150 (square), and 300 (star). Sample sizes that had no power $>\alpha$ were not graphed. 1,000 random samples were used at each combination of effect size, *n*, and quantile.



Appendix A6. Estimated power for $\alpha = 0.05$ for the double permutation D test; for heterogeneous normal error distributions; for H_0: $\beta_0 = 0$ and H_0: $\beta_1 = 0$ in the weighted model $wy = w(\beta_0 + \beta_1 X_1 + (1 + \gamma X_1)\varepsilon)$, $\gamma = 0.05$, and $w = (1 + \gamma X_1)^{-1}$; for $\beta_0 = 0.0, 0.5, 1.0, 2.0$, and 3.0 and for $\beta_1 = 0.0, 0.01, 0.05, 0.10$, and 0.20; for $\tau = \{0.50, 0.90, 0.95, \text{and } 0.99\}$; and for $n = 30$ (circle), 60 (triangle), 150 (square), and 300 (star). Sample sizes that had no power $>\alpha$ were not graphed. 1,000 random samples were used at each combination of effect size, n, and quantile.



Appendix A7. Estimated power for $\alpha = 0.05$ for the double permutation D test; for heterogeneous uniform error distributions; for H_0: $\beta_0 = 0$ and H_0: $\beta_1 = 0$ in the weighted model $wy = w(\beta_0 + \beta_1 X_1 + (1 + \gamma X_1)\varepsilon)$, $\gamma = 0.05$, and $w = (1 + \gamma X_1)^{-1}$; for β_0 = 0.0, 0.5, 1.0, 2.0, and 3.0 and for β_1 = 0.0, 0.01, 0.05, 0.10, and 0.20; for τ = {0.50, 0.90, 0.95, and 0.99}; and for n = 30 (circle), 60 (triangle), 150 (square), and 300 (star). Sample sizes that had no power >α were not graphed. 1,000 random samples were used at each combination of effect size, n, and quantile.



Appendix A8. Estimated power for $\alpha = 0.05$ for the permutation *D* test for H_0: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$ (double permutation), H_0: $\beta_3 = 0$, and H_0: $\beta_4 = 0$ (delete zero residuals reduced dimension regression); for heterogeneous lognormal error distributions in the weighted model $wy = w(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + (1 + \gamma X_1)\varepsilon)$, $\gamma = 0.05$, $w = (1 + \gamma X_1)^{-1}$; for $\tau = \{0.50, 0.90, 0.95, \text{and } 0.99\}$; and for $n = 30$ (circle), 60 (triangle), 150 (square), and 300 (star). Sample sizes with no power $>\alpha$ were not graphed. 1,000 random samples were used at each combination of effect size, H_0:, *n*, and quantile.