

**Supplementary material for:
Testing a parameter restriction on the boundary for the
g-and-h distribution: a simulated approach**

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the date of receipt and acceptance should be inserted later

Abstract This document contains further outcomes of the simulation experiments described in detail in the paper “Testing a parameter restriction on the boundary for the g-and-h distribution: a simulated approach”.

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Tables A.1 and A.2 display the empirical size of the MC test with respect to the critical values of the asymptotic null distribution of the log-likelihood ratio test. The number of replications is $B = 2000$. The procedure is identical to the one described in Section 4.1 of the paper, except for the use of the asymptotic (instead of simulated) critical values.

Similarly, figures B.1 to B.6 show the empirical power of the MC test with respect to the critical values of the asymptotic null distribution of the log-likelihood ratio test. The number of replications is $B = 1000$. The procedure is identical to Algorithm 3 of the paper, except for the use of the asymptotic (instead of simulated) critical values.

A Additional tables

Table A.1 Empirical size of the MC test with respect to the critical values of the asymptotic distribution for $g = 0.5$, $n \in \{100, 500, 1000\}$ and nominal levels $\alpha \in \{0.1, 0.05, 0.01\}$.

	$\alpha = 0.1$	$\alpha = 0.05$	$\alpha = 0.01$
$n = 100$	0.240	0.201	0.148
$n = 500$	0.229	0.180	0.102
$n = 1000$	0.225	0.171	0.095

Table A.2 Empirical size of the MC test with respect to the critical values of the asymptotic distribution for $g = 1.5$, $n \in \{100, 500, 1000\}$ and nominal levels $\alpha \in \{0.1, 0.05, 0.01\}$.

	$\alpha = 0.1$	$\alpha = 0.05$	$\alpha = 0.01$
$n = 100$	0.103	0.081	0.052
$n = 500$	0.054	0.038	0.015
$n = 1000$	0.046	0.037	0.013

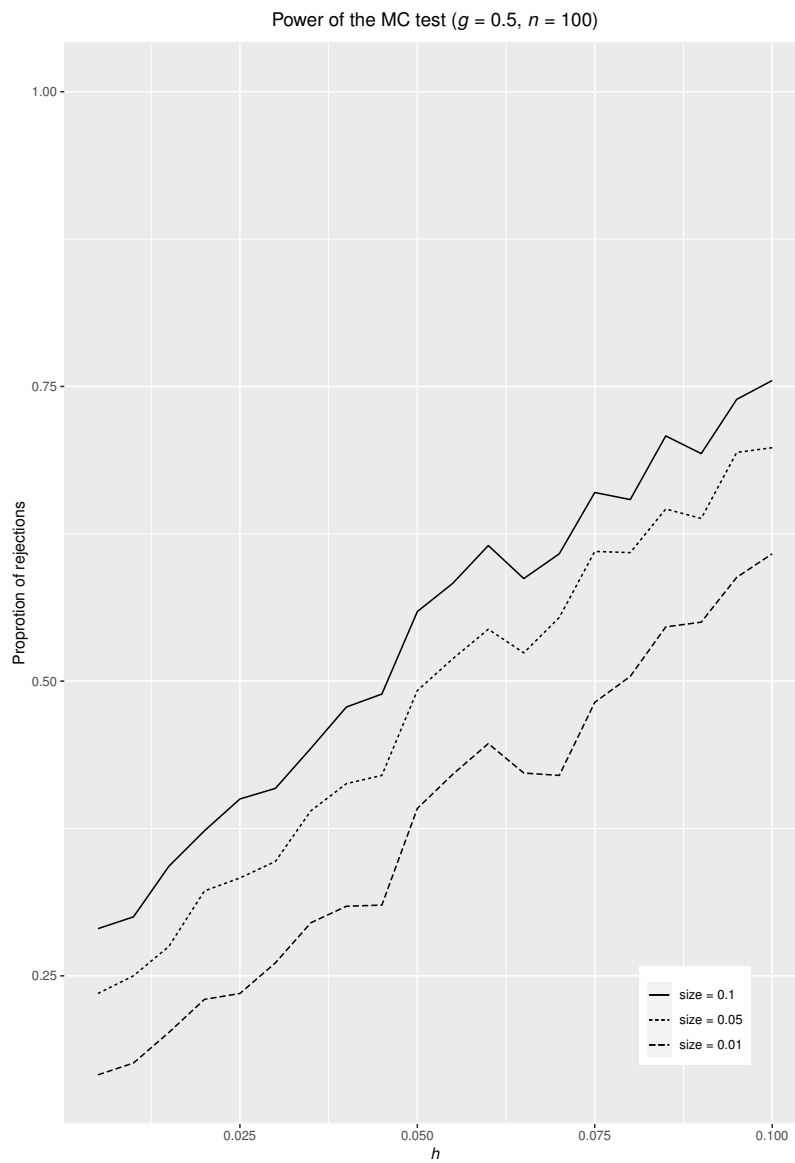
B Additional plots

Fig. B.1 Power of the MC test with respect to the critical values of the asymptotic distribution for $g = 0.5$ and $n = 100$.

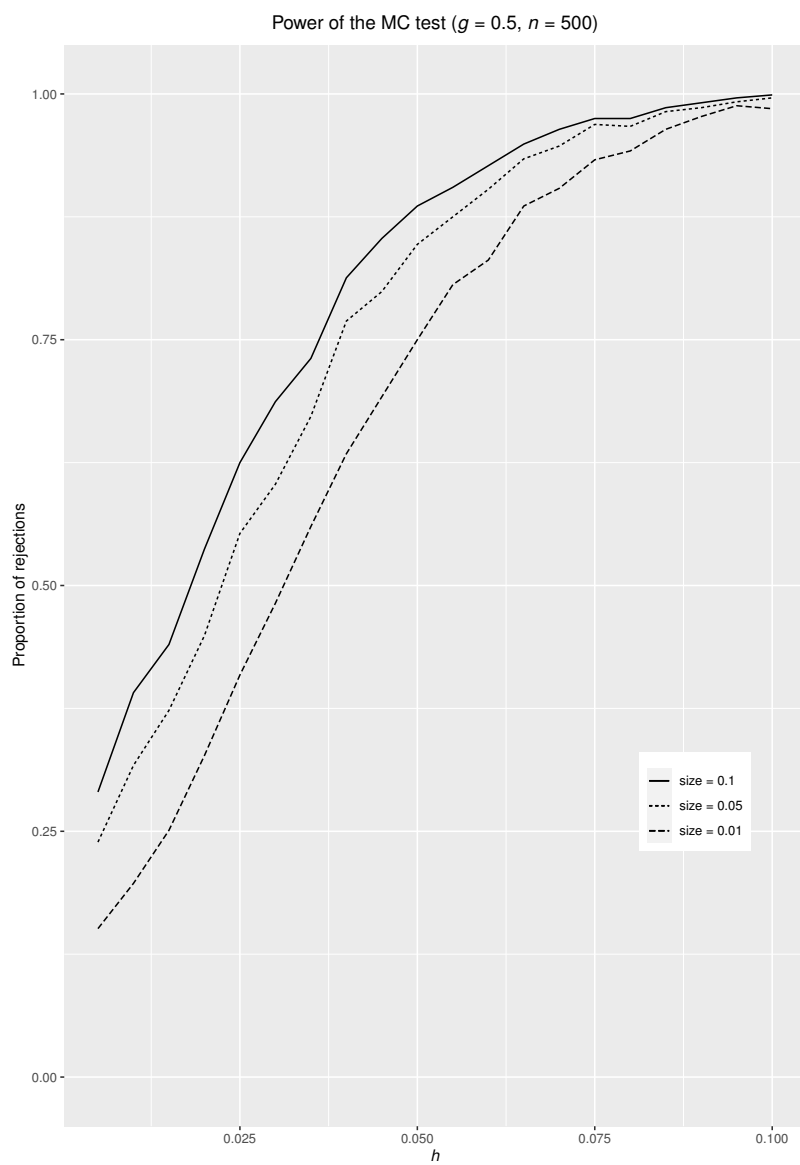


Fig. B.2 Power of the MC test with respect to the critical values of the asymptotic distribution for $g = 0.5$ and $n = 500$.

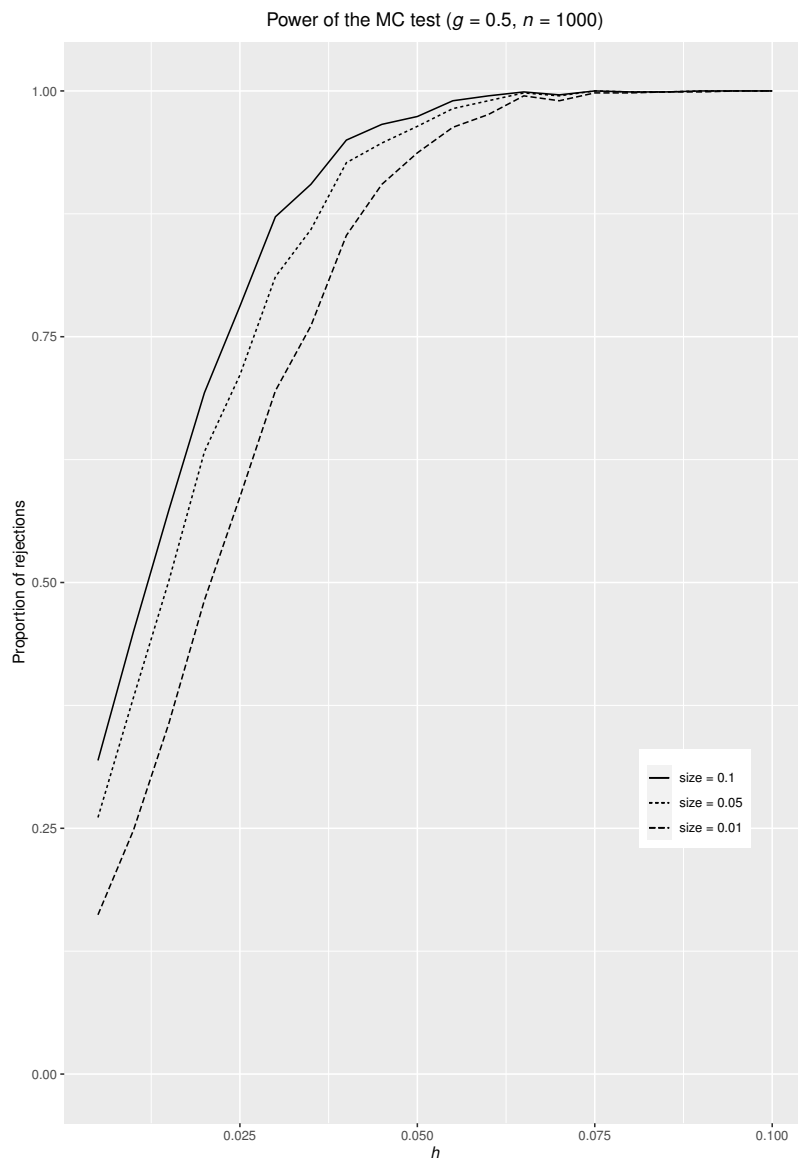


Fig. B.3 Power of the MC test with respect to the critical values of the asymptotic distribution for $g = 0.5$ and $n = 1000$.

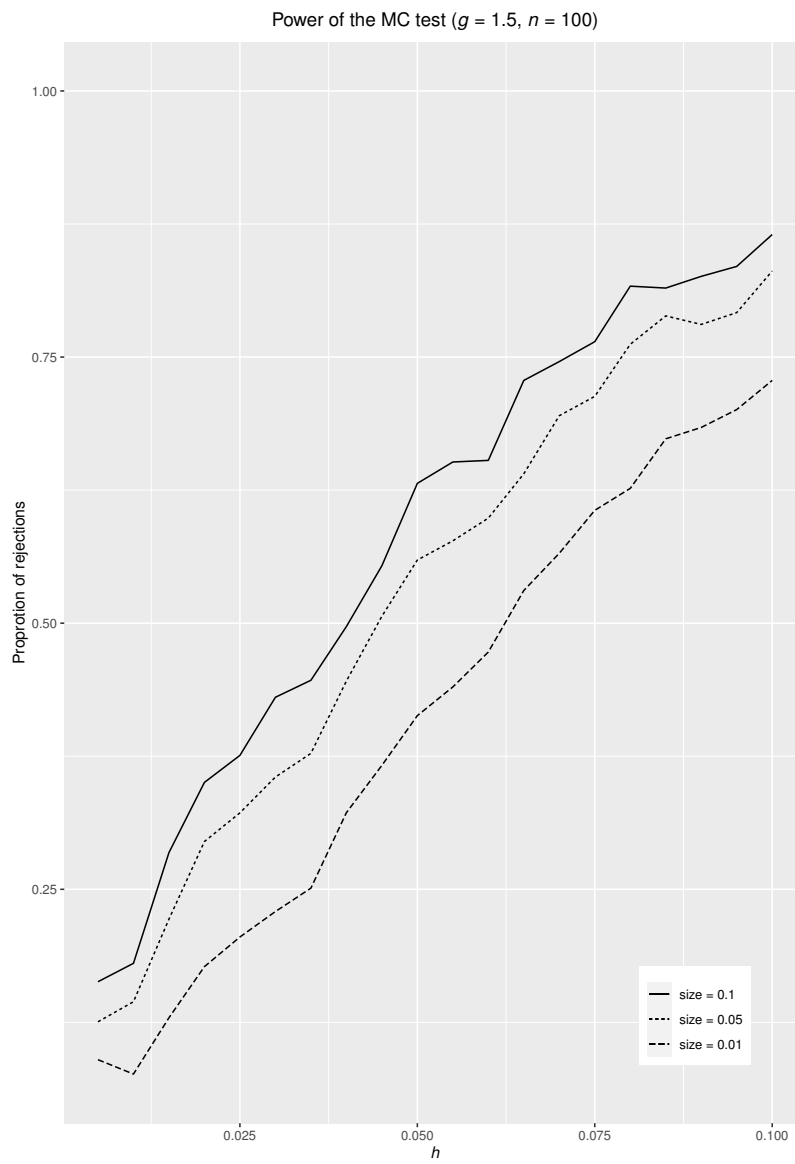


Fig. B.4 Power of the MC test with respect to the critical values of the asymptotic distribution for $g = 1.5$ and $n = 100$.

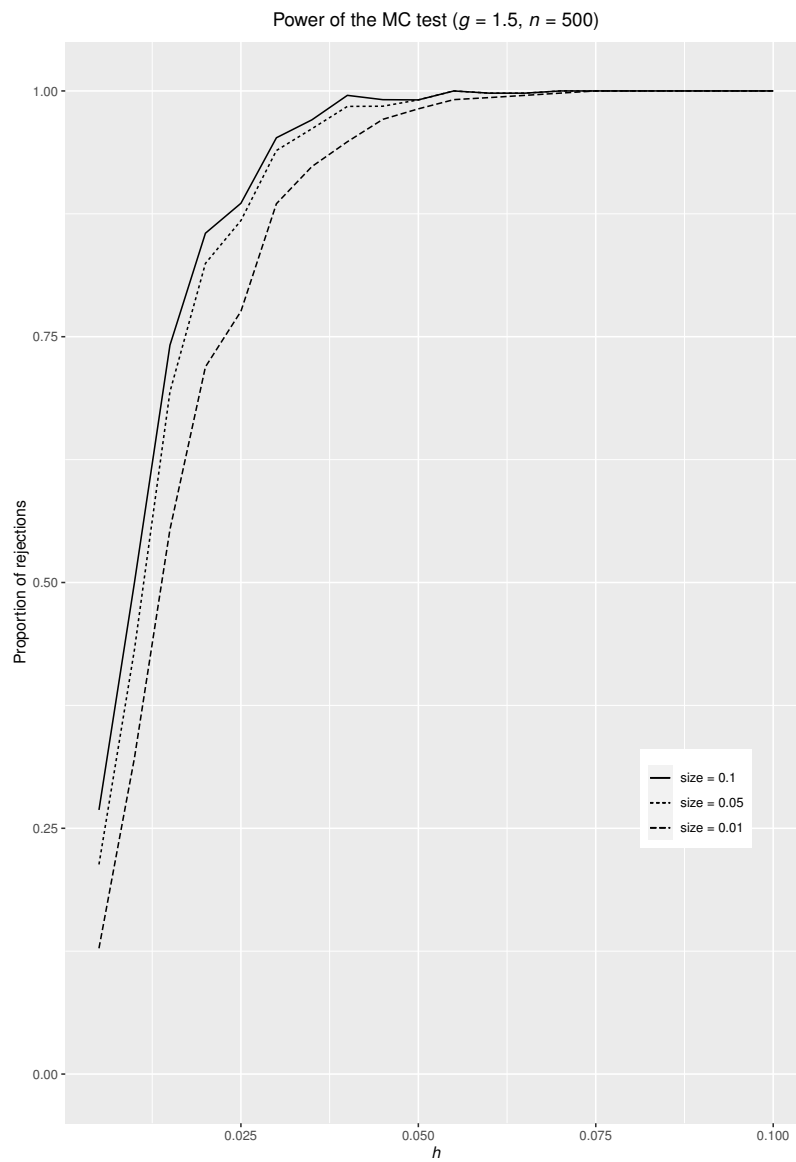


Fig. B.5 Power of the MC test with respect to the critical values of the asymptotic distribution for $g = 1.5$ and $n = 500$.

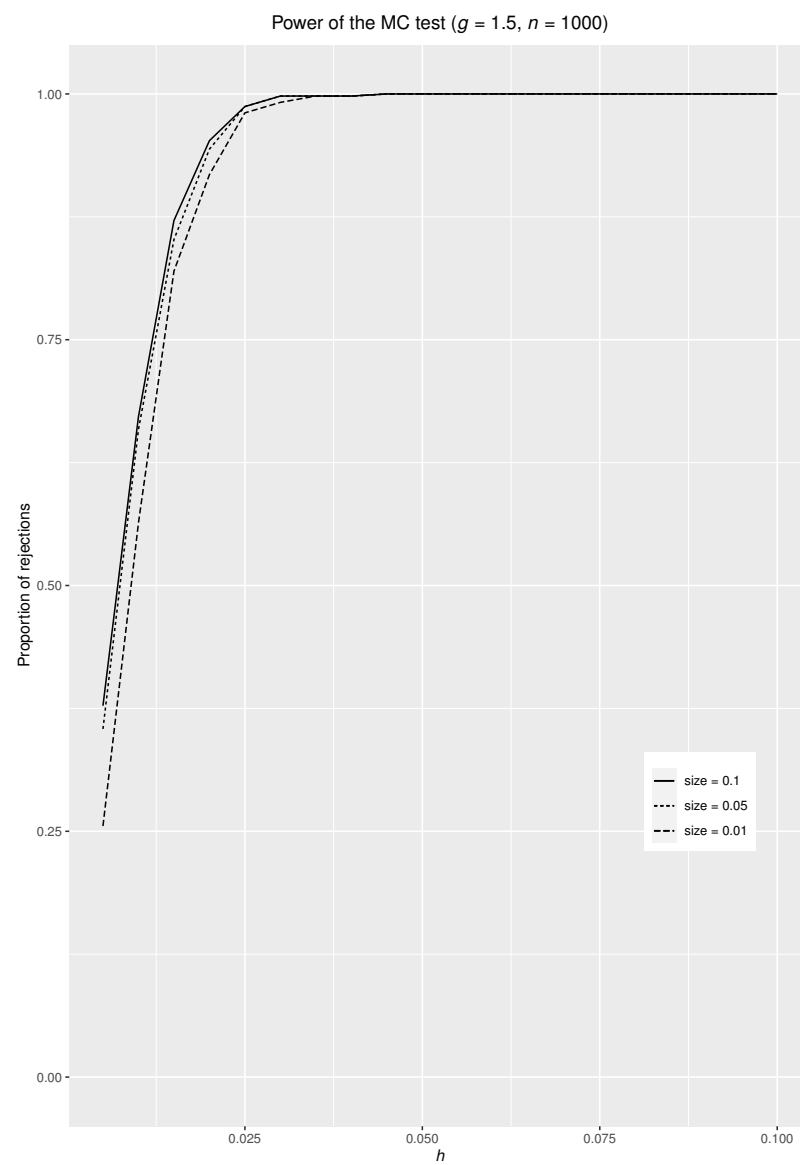


Fig. B.6 Power of the MC test with respect to the critical values of the asymptotic distribution for $g = 1.5$ and $n = 1000$.