

```

> library(ZIM)
> data(syph)
> count <- syph$a33
> ar1 <- bshift(count > 0)
> trend <- 1:length(count) / 1000

> zim(count ~ ar1 + trend | trend)

Call:
zim(formula = count ~ ar1 + trend | trend)

Coefficients (log-linear):
              Estimate Std. Error z value Pr(>|z|)
(Intercept)  1.48942     0.11995 12.4175 < 2e-16 ***
ar1           0.22111     0.10072  2.1954 0.02813 *
trend        -1.01004     0.66687 -1.5146 0.12987

Coefficients (logistic):
              Estimate Std. Error z value Pr(>|z|)
(Intercept) -1.93321     0.37196 -5.1974 2.021e-07 ***
trend         8.60517     2.80827  3.0642 0.002182 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Test for overdispersion (H0: ZIP vs. H1: ZINB)
score.test: 2.6031
p.value: 0.0046196

Criteria for assessing goodness of fit
loglik: -454.3903
aic: 918.7806
bic: 935.4683
tic: 920.7761

Number of EM-NR iterations: 11
Maximum absolute gradient: 4.241052e-14

> zim(count ~ ar1 + trend | trend, dist = "zinb")

Call:
zim(formula = count ~ ar1 + trend | trend, dist = "zinb")

Coefficients (log-linear):
              Estimate Std. Error z value Pr(>|z|)
(Intercept)  1.47240     0.13873 10.6132 < 2e-16 ***
ar1           0.23164     0.11522  2.0105 0.04438 *
trend        -1.00364     0.77154 -1.3008 0.19332

Coefficients (logistic):
              Estimate Std. Error z value Pr(>|z|)
(Intercept) -1.97940     0.38563 -5.1329 2.853e-07 ***
trend         8.71684     2.88697  3.0194 0.002533 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

(Dispersion parameter for negative binomial taken to be 15.4711)

Criteria for assessing goodness of fit

loglik: -451.7464

aic: 915.4927

bic: 935.5179

tic: 915.974

Number of EM-NR iterations: 11

Maximum absolute gradient: 5.087797e-08