Example 13 — Equation-level Wald test

Description

We demonstrate estat eqtest. See [SEM] Intro 7 and [SEM] estat eqtest.

This example picks up where [SEM] Example 12 left off:

```
. use https://www.stata-press.com/data/r17/auto
. sem (price <- foreign mpg displacement) ///
    (weight <- foreign length), ///
    cov(e.price*e.weight)
```

Remarks and examples

We have fit a two-equation model with equations for endogenous variables price and weight. There happen to be two equations, the model happens to be a seemingly unrelated regression, and the endogenous variables happen to be observed, but none of that is important right now.

estat eqtest displays equation-by-equation Wald tests that all coefficients excluding the intercepts are 0.

```
. estat eqtest
Wald tests for equations

<table>
<thead>
<tr>
<th></th>
<th>chi2</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>observed</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>price</td>
<td>36.43</td>
<td>3</td>
<td>0.0000</td>
</tr>
<tr>
<td>weight</td>
<td>633.34</td>
<td>2</td>
<td>0.0000</td>
</tr>
</tbody>
</table>
```

Note:

1. The null hypothesis for this test is that the coefficients other than the intercepts are 0. We can reject that null hypothesis for each equation.

Also see

[SEM] Example 12 — Seemingly unrelated regression
[SEM] Intro 7 — Postestimation tests and predictions
[SEM] estat eqtest — Equation-level tests that all coefficients are zero