Quiz 2 - Regrade Submission 2

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3. If the variables in X refer to time periods, then to test the linear trend over time requires defining an appropriate row in the M matrix.

Original answer: True

Explanation: Trick question. You could say that testing the linear trend requires defining the row appropriately (rather than the appropriate row) because you are a defining a trend. For example, imagine a case where there are 2 groups across three time periods. To comparet the groups we would test an LXM combination like the following.

$$\begin{bmatrix} -1 & 1 \end{bmatrix} \begin{bmatrix} 3 & 4 & 5 \\ 5 & 4 & 3 \end{bmatrix} \begin{bmatrix} -1 \\ 0 \\ 1 \end{bmatrix}$$

a linear trend across three time periods would be a column vector:

$$\begin{bmatrix} -1 \\ 0 \\ 1 \end{bmatrix}$$