Since we know $\hat{y}_n = \hat{\beta}_0 + \hat{\rho}_1 \times_n$ and $\hat{y}_n = \beta_0 + \beta_1 \times_n + \epsilon_n$.

then
$$\sum_{n=1}^{N} y_n = \sum_{n=1}^{N} (\beta_0 + \beta_1 x_n + \epsilon_n)$$

$$= \sum_{n=1}^{N} (\hat{y}_n) + \sum_{n=1}^{N} \mathcal{E}_n$$

Since Ex is normal and mean is equal 0.

So
$$\sum_{n=1}^{N} \gamma_n = \sum_{n=1}^{M} \gamma_n$$