Tabla Nº.3. Momentos de un proceso ARCH(1)

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| --- | --- |
| **Media Incondicional (marginal)** | **Media Condicional** |
| $$E\left(y\_{t}\right)=E\left[ε\_{t}^{2}\left(α\_{0}+α\_{1}y\_{t-1}^{2}\right)\right]^{1/2}$$$$E\left(y\_{t}\right)=E\left(ε\_{t}\right)E\left(α\_{0}+α\_{1}y\_{t-1}^{2}\right)^{1/2}$$$$E\left(y\_{t}\right)=0\*E\left(α\_{0}+α\_{1}y\_{t-1}^{2}\right)^{1/2}$$$E\left(y\_{t}\right)=0$ [3] | $$E\_{t-1}\left(y\_{t}\right)=E\_{t-1}\left(ε\_{t}\right)E\_{t-1}\left[\left(α\_{0}+α\_{1}y\_{t-1}^{2}\right)^{1/2}\right]$$$$E\_{t-1}\left(y\_{t}\right)=0\*E\_{t-1}\left(α\_{0}+α\_{1}y\_{t-1}^{2}\right)^{1/2}$$$E\_{t-1}\left(y\_{t}\right)=0$ [4] |
| **Varianza Incondicional (marginal)** | **Varianza Condicional** |
| $$E\left(y\_{t}^{2}\right)=E\left[\left(ε\_{t}^{2}\right)\left[\left(α\_{0}+α\_{1}y\_{t-1}^{2}\right)^{1/2}\right]^{2}\right]$$$$E\left(y\_{t}^{2}\right)=σ\_{ε}^{2}\left(α\_{0}+α\_{1}E(y\_{t-1}^{2}\right))$$$E\left(y\_{t}^{2}\right)=σ\_{t}^{2}=\frac{α\_{0}}{1-α\_{1}}σ\_{ε}^{2}$[5]\* $ σ\_{ε}^{2}=1$ | $$E\_{t-1}\left(y\_{t}^{2}\right)=E\_{t-1}\left(ε\_{t}^{2}\right)E\_{t-1}\left[\left(α\_{0}+α\_{1}y\_{t-1}^{2}\right)^{1/2}\right]^{2}$$$E\_{t-1}\left(y\_{t}^{2}\right)=σ\_{t}^{2}=σ\_{ε}^{2}\left(α\_{0}+α\_{1}y\_{t-1}^{2}\right)$[6]\* $σ\_{ε}^{2}=1$ |

 **Fuente:** elaboración propia.