

1154-34-26

Leonard Mushunje* (leonsmushunje@gmail.com), Midlands state university, 9055 Senga Road, Gweru, Gweru, Midlands 00263, Zimbabwe. *Theoretical game modelling in the insurance sector.*

This paper discussed theoretical games that are played by insurers and the insured within the insurance sector. We aimed to model their trading relations in terms of their risks and returns, where the risks part was for the insured and the latter for the insurers. We used a two way competition model, that is, the predator-prey and the prey-predator models. We aimed to see the trading discrepancies that occur within insurance sector if we apply a destocking control factor that is, if we vary the number and power of insurers and the policyholders at different times ceteris paribus. We used the eigenvalue analysis through the Jacobean matrix method. Results suggested that, in the absence of interaction both risks and returns for both players grows and decays exponentially respectively under the predator pray model and true for the counter case. The eigenvalue analysis suggested that, there is always a stable co-existence gaming point and as well unstable points which are not conducive for profitable games in the insurance sector. However, these results proved to greatly depend on the values of parameters used in the models. (Received June 28, 2019)