**Spearman’s rho for empirical distributions**

We want to consider

Then

Let the *ranks* be

Then

Therefore,

**Kendall’s Tau:**

**Creating a Gauss Copula using Spearman’s rho**

Suppose we have distributions in the form of empirical data for

We can compute like before.

Now create joint standard normal random variables

where is a correlation matrix with entries such that

Since usually for a Gaussian distribution,

we can let C be the copula of **Y** and let

We are essentially matching the rank correlations.

**Creating a t copula using Kendall’s Tau:**

We consider empirical data for with marginal distributions and choose degrees of freedom parameter We can compute as shown earlier.

Now if **X** had a t distribution, we would have

where is the correlation of and

Thus we could create a t distribution **Y** such that

Let C be the copula for **Y,** and let