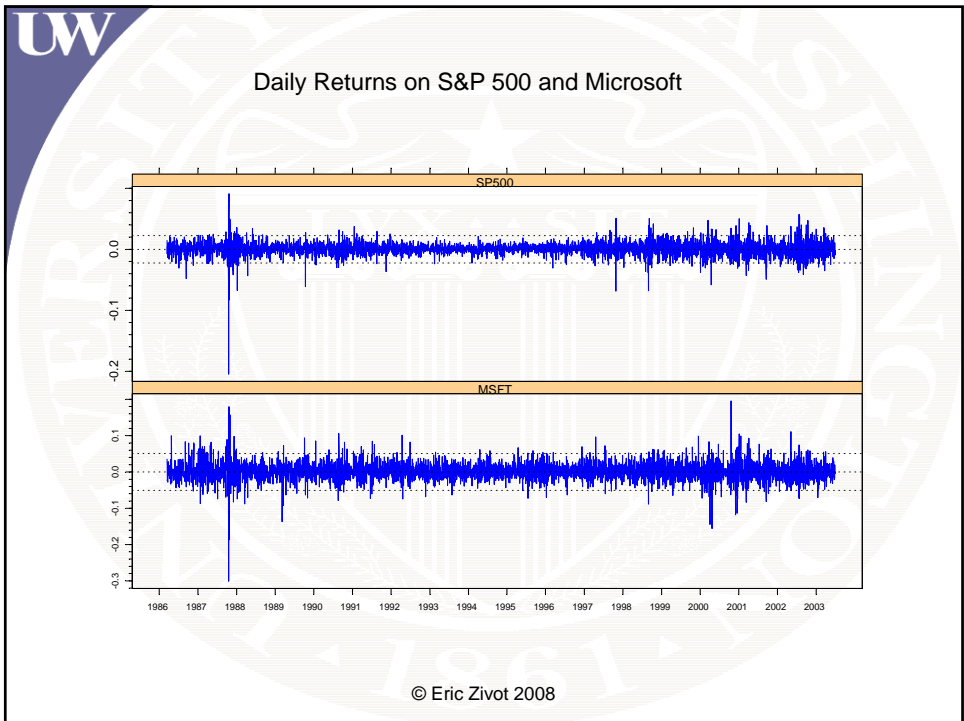


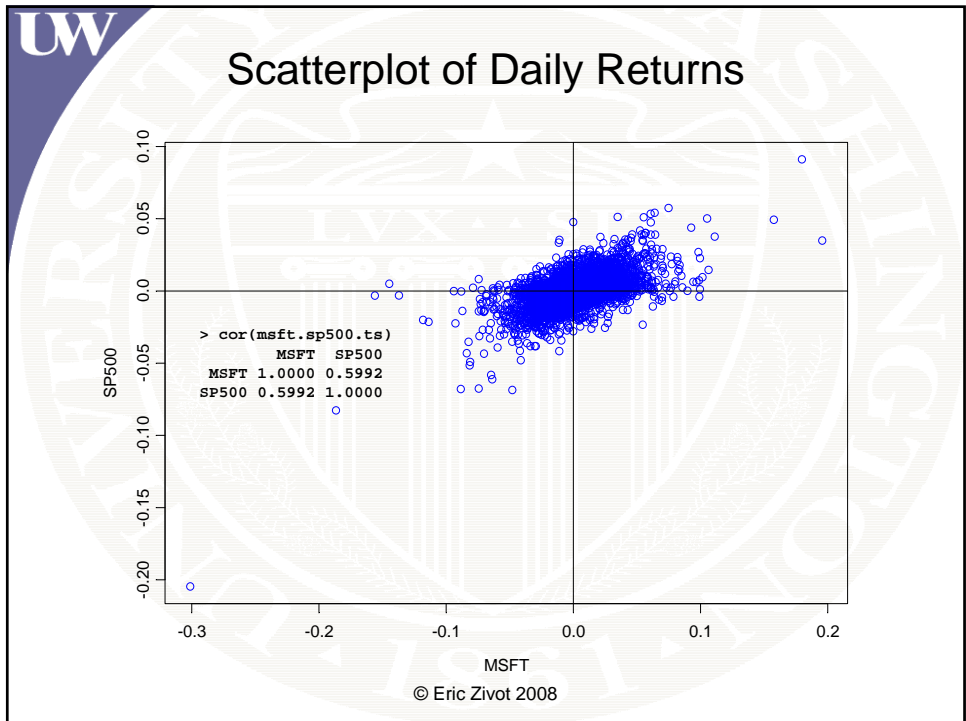
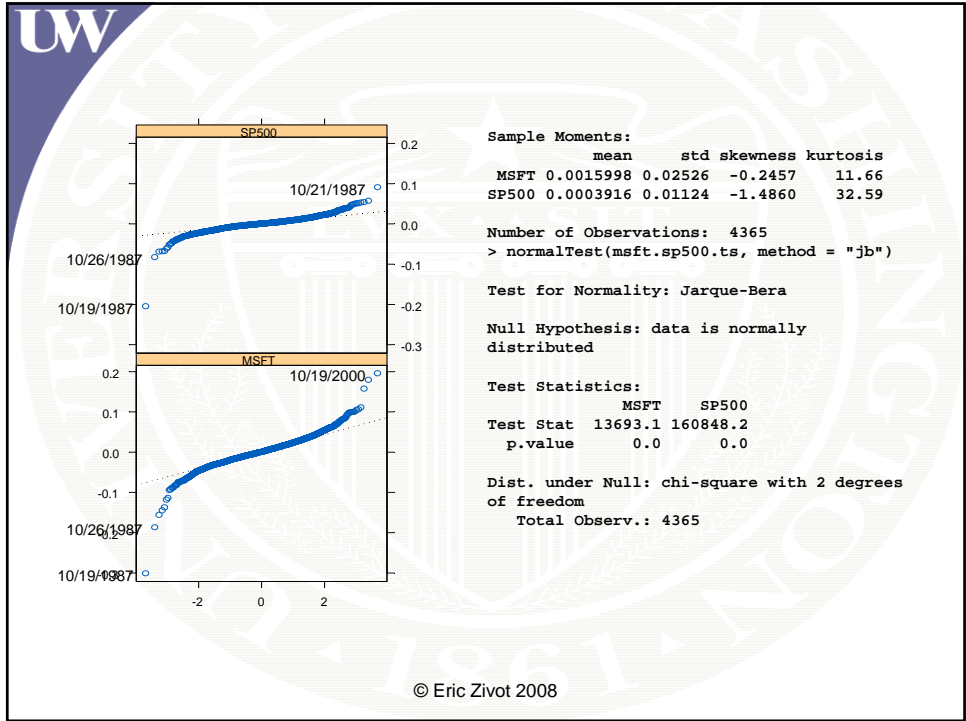
UW

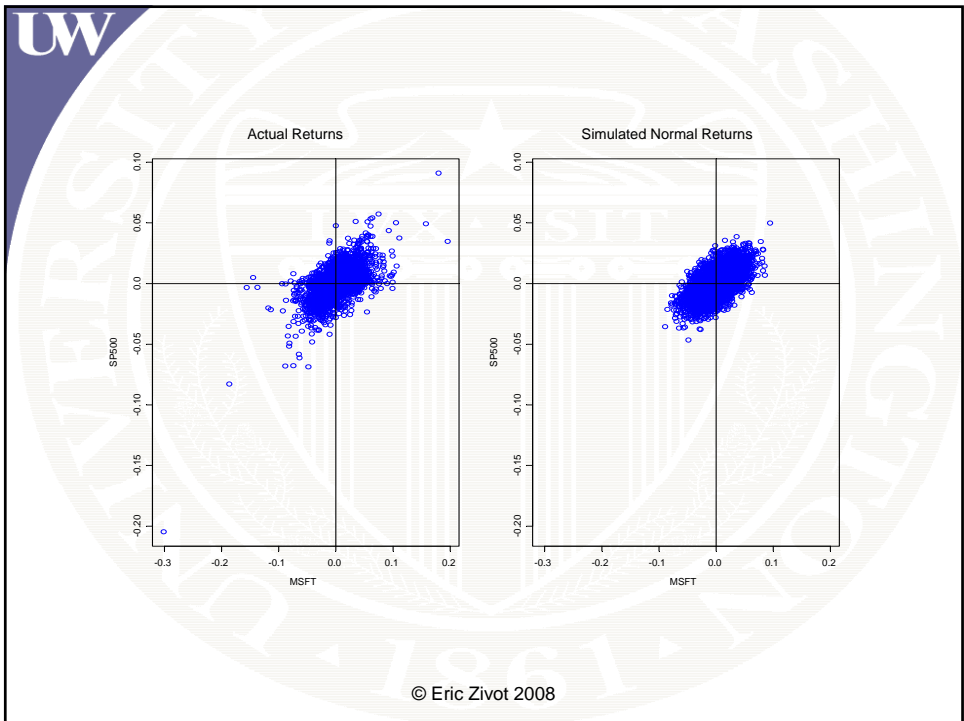
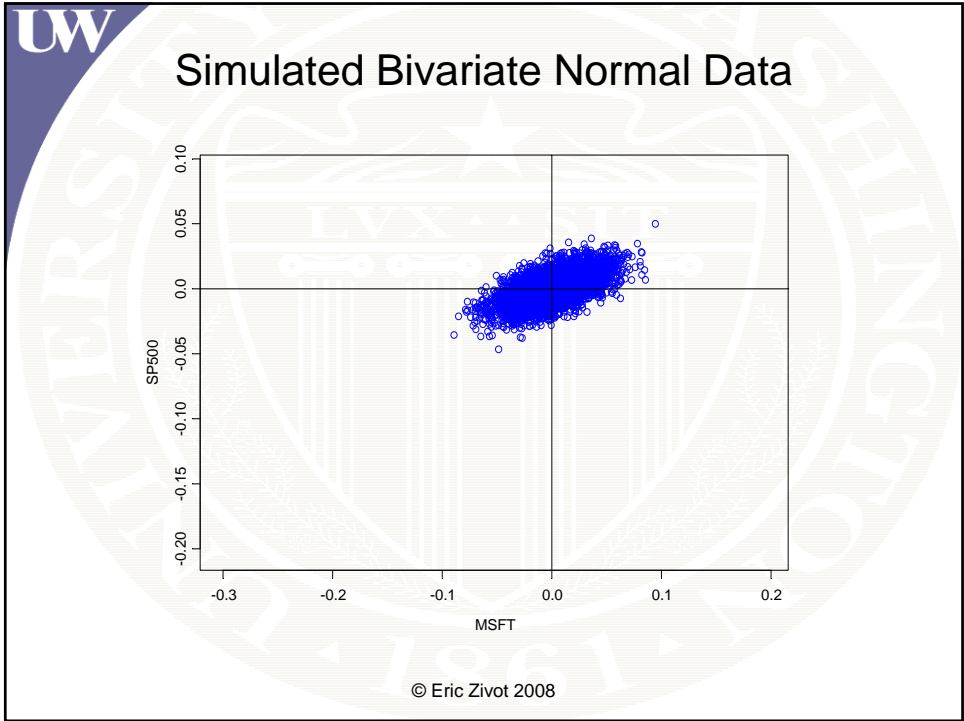
Copulas

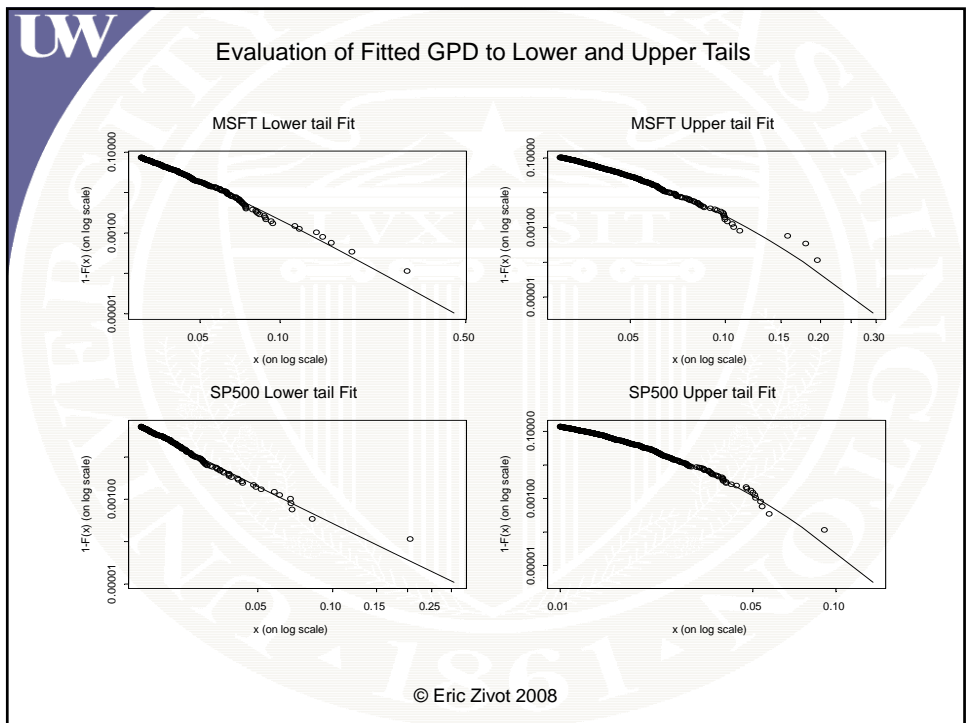
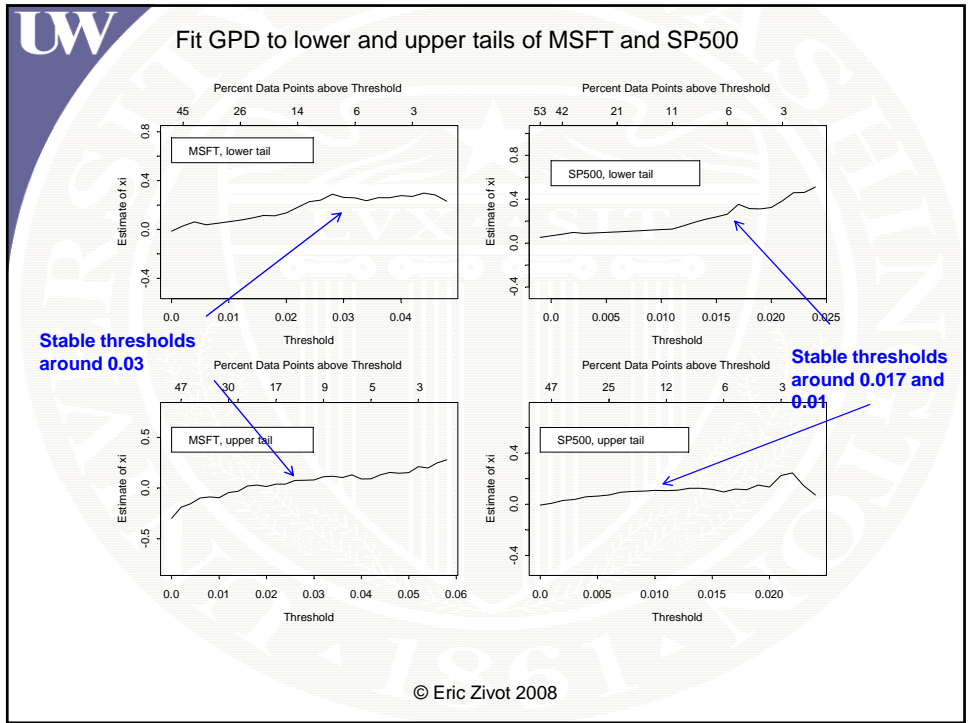
Econ 512
Eric Zivot
Spring 2010
Updated: May 12, 2010

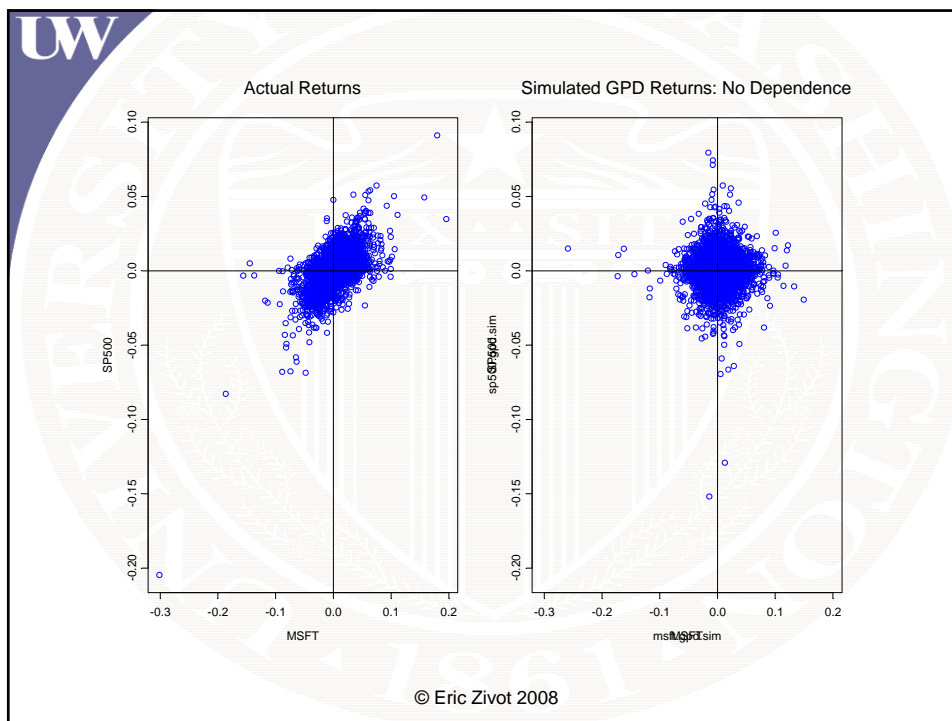
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Kendall's tau and Spearman's rho

```

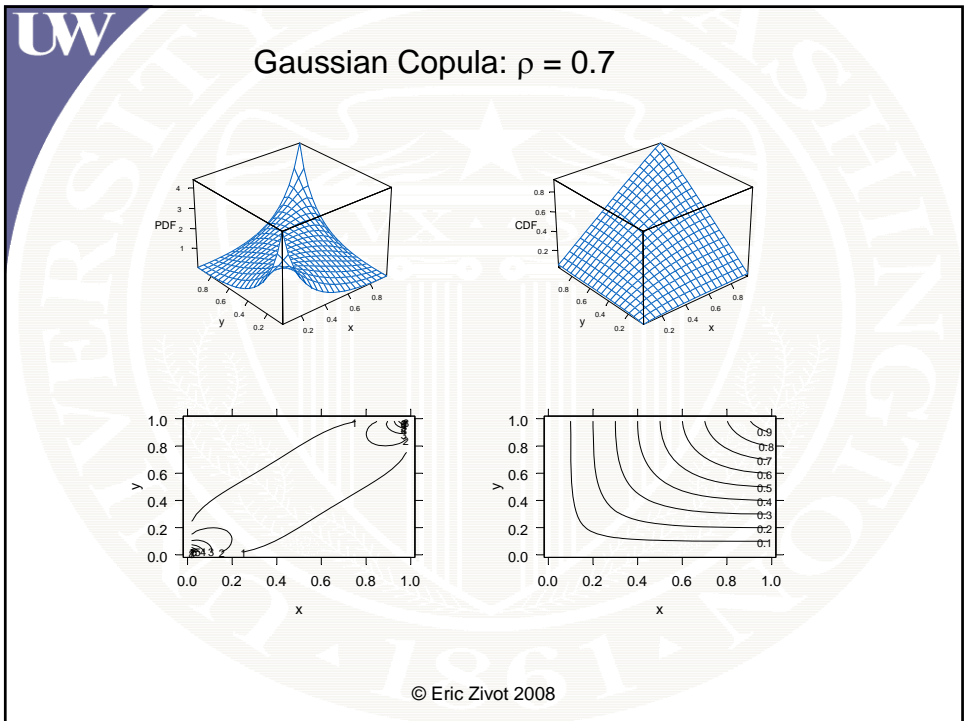
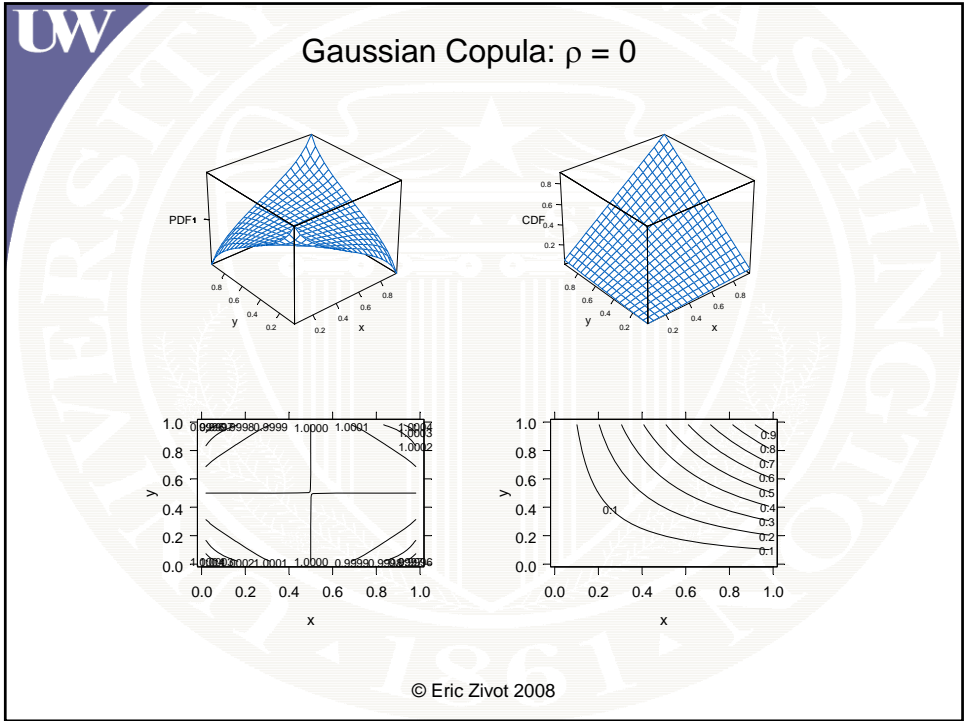
> msft.sp500.tau = cor.test(msft,sp500,
+                           method="k")$estimate
> msft.sp500.tau
  tau
0.3947228

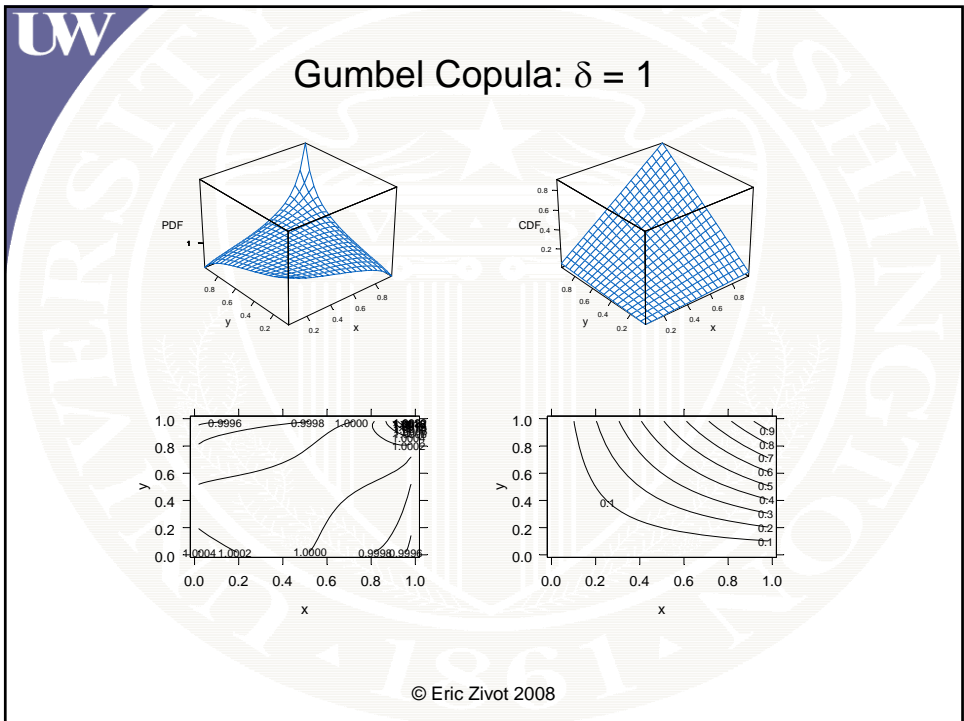
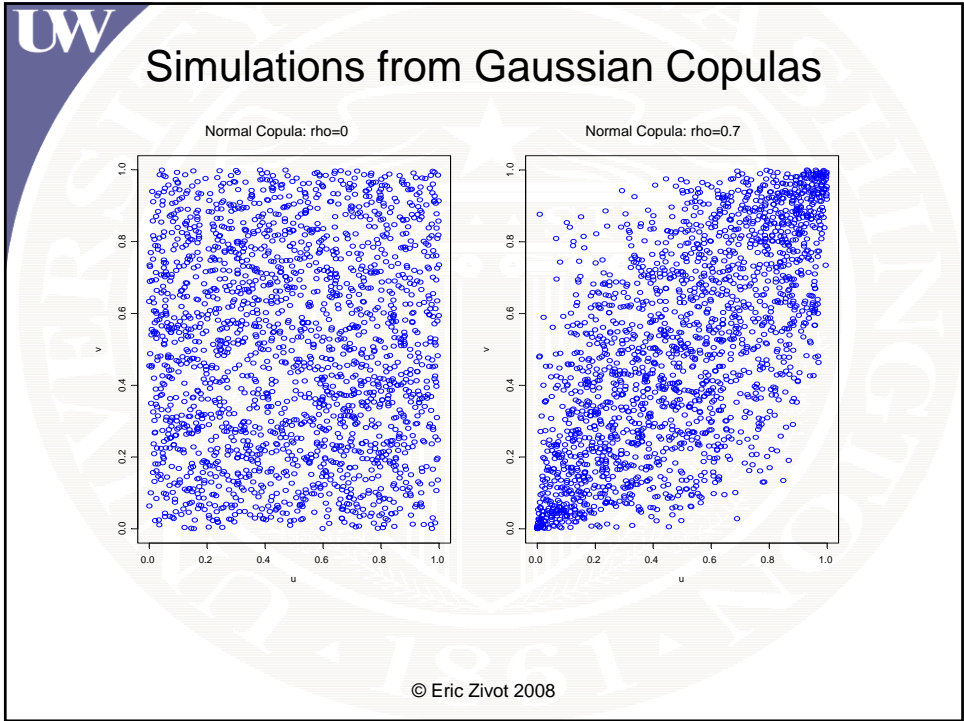
> # compute Spearman's rho using splus function cor.test
> msft.sp500.rho = cor.test(msft,sp500,
+                           method="spearman")$estimate
> msft.sp500.rho
  rho
0.557072

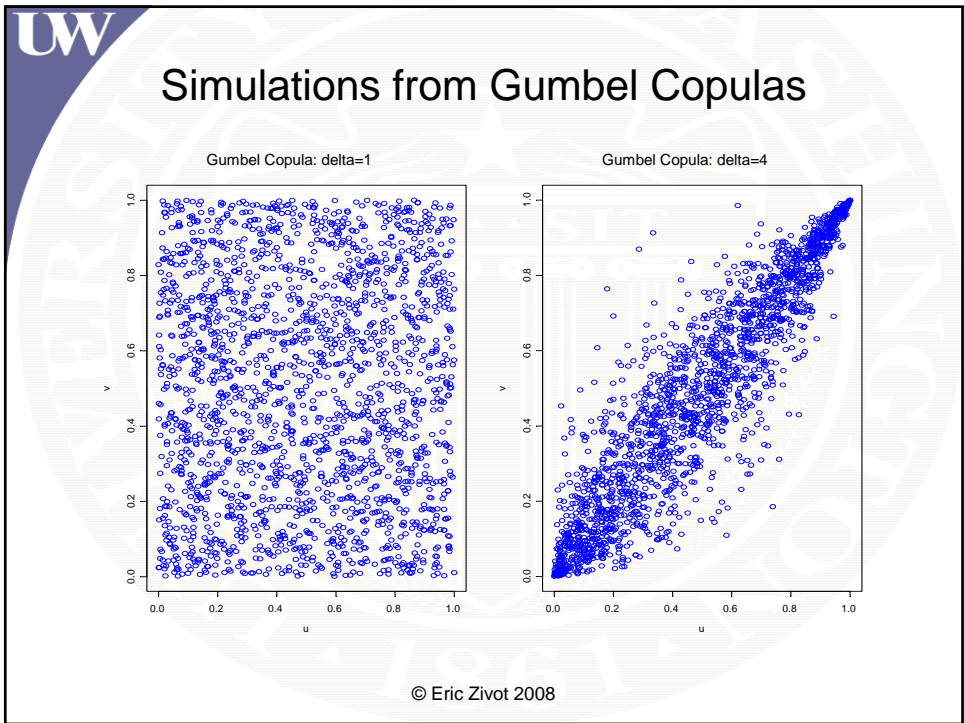
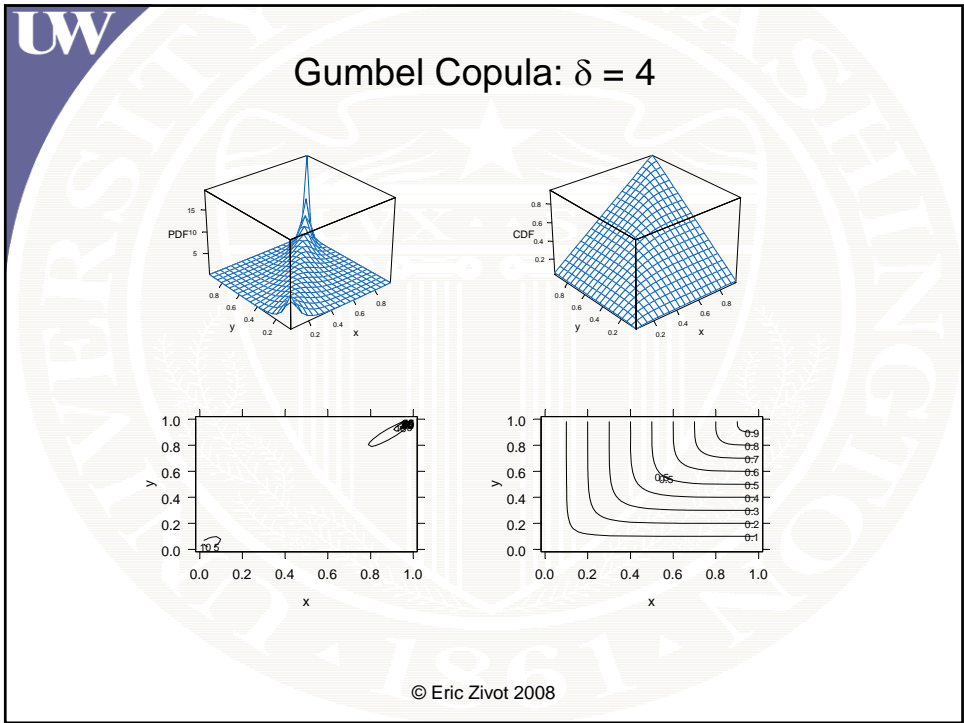
```

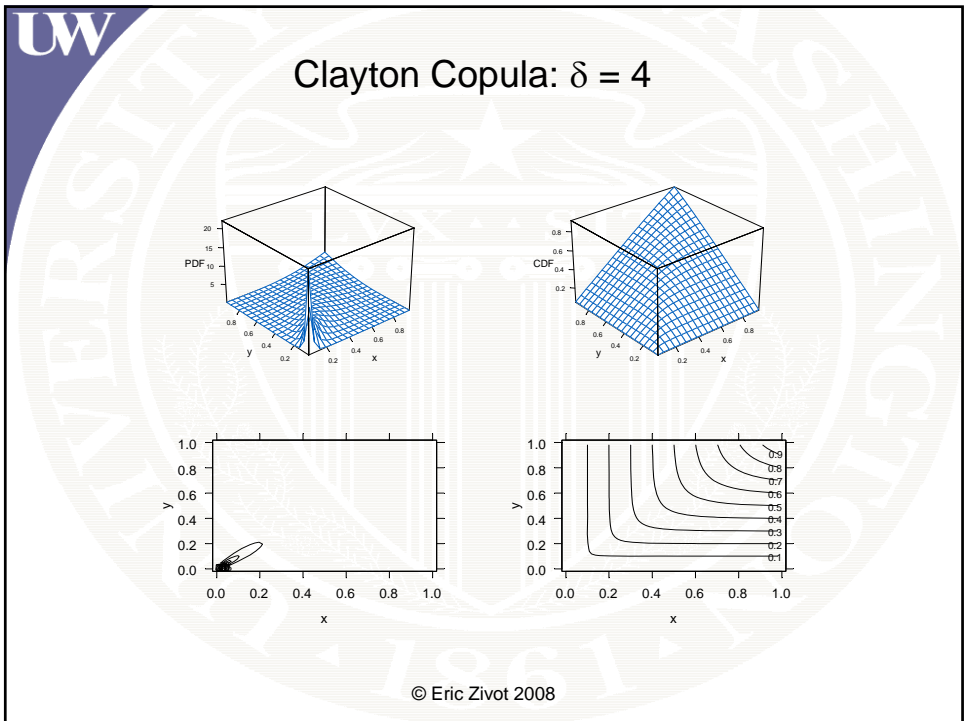
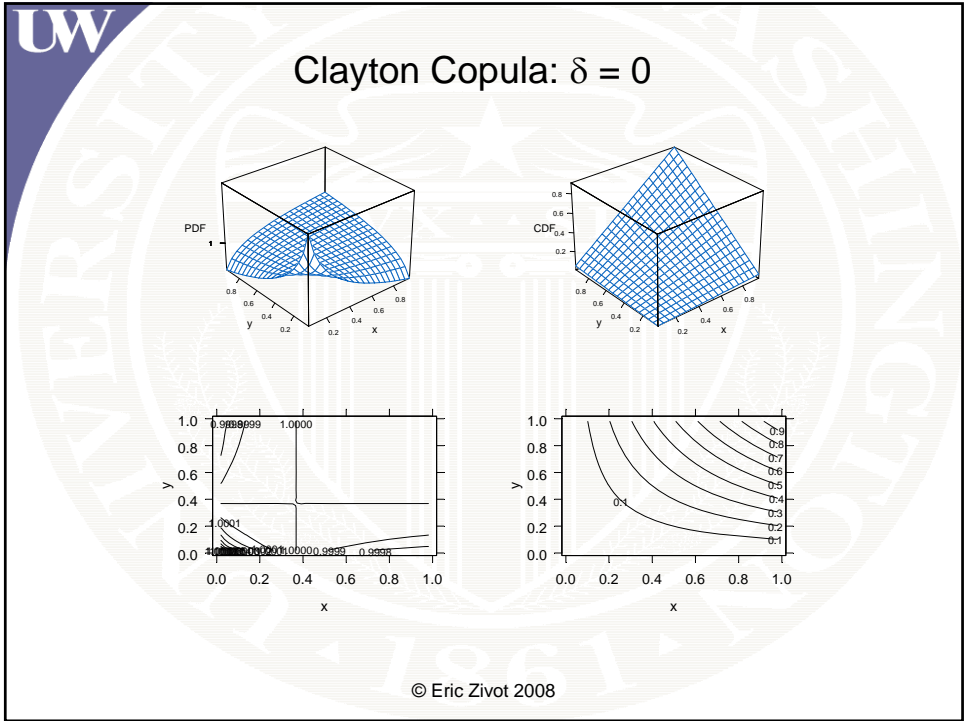
Recall, Pearson's linear correlation is 0.6

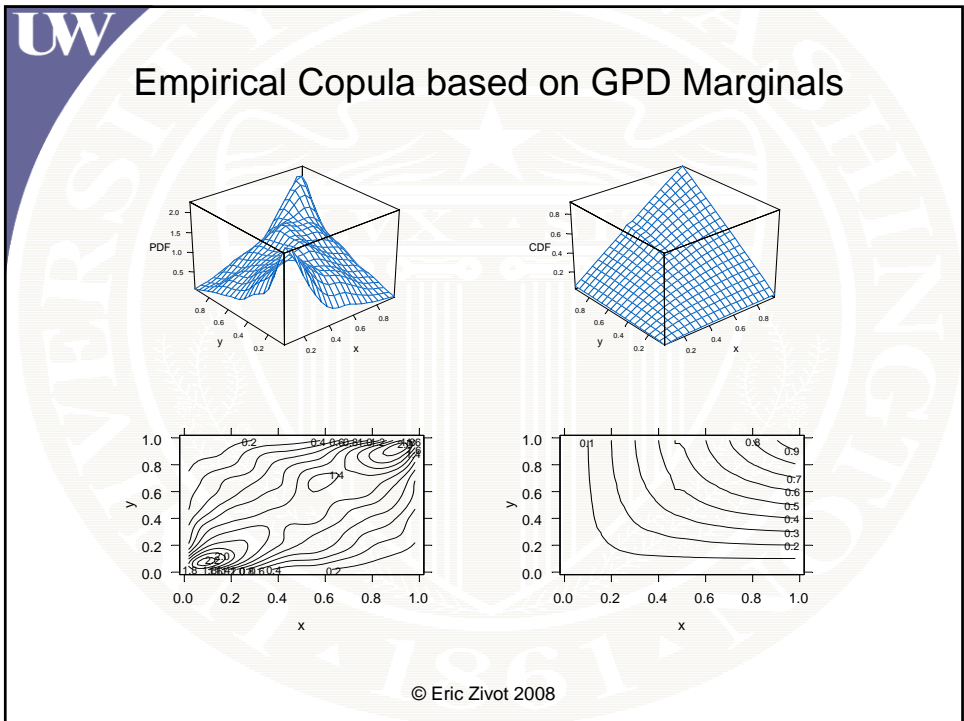
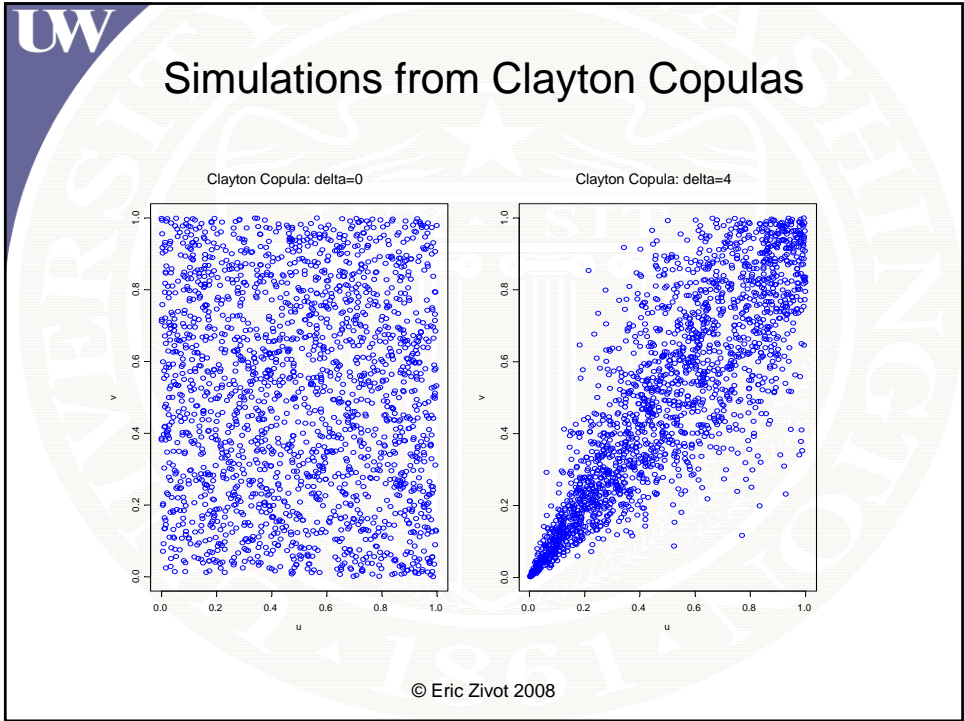
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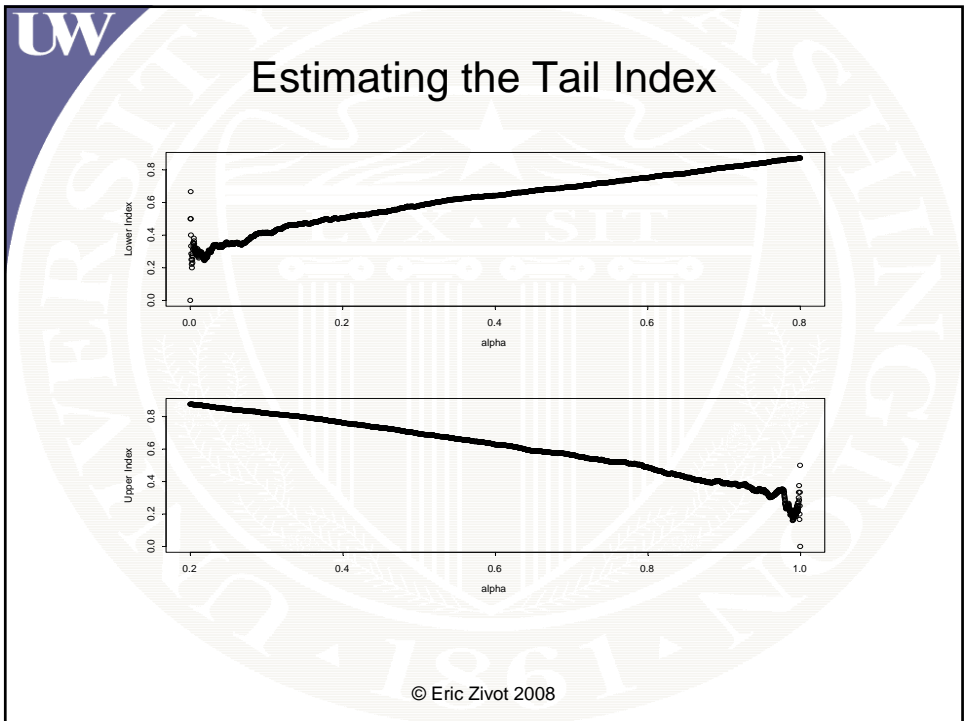
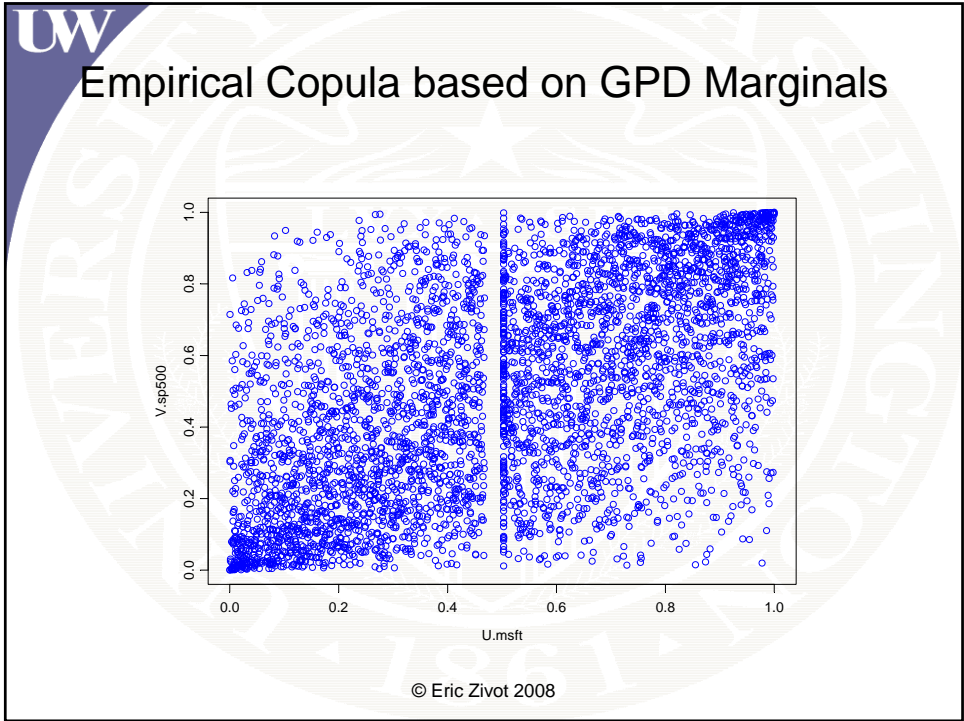












MLE: GPD Margins and Gaussian Copula

```

> cop.normal.fit
Fit Bivariate Copula by MLE --

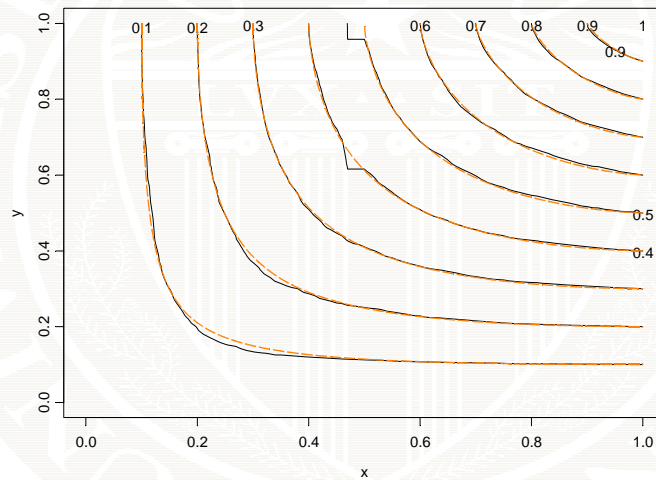
RELATIVE FUNCTION CONVERGENCE
Log-likelihood value: 893.5

Normal copula family.
Parameters :
  delta = 0.5797

Parameter Estimates, Standard Errors and
t-ratios:
  Value Std.Error t value
delta  0.5798  0.0087  66.6810
    
```

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Copula Empirical vs. Fitted CDF



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