4-9-2015

A Covariance Analysis of Consumer Healthcare Expenditures and Healthcare Sector Price Movements

A Covariance Analysis of Consumer Expenditures on Health Care and Health Care Sector Price Movement

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Study Objective:
Determine if Health Care (HC) sector stock prices covary directly with consumer expenditures on health care

Research:
- Univariate Regression Analysis
- Time Period 2004-2013
- Data Sets
  - HC Consumer Expenditures
  - HC Sector ETF (XLV)
  - HC Equipment (XHE)
  - Biotech (XBH)
  - Pharmaceuticals (XHD)
  - HC Services (XHS)
- Data Frequency: Quarterly Data

Model Specifications
XLV=A+B(HCCE)
XHE=A+B(HCCE)
XBI=A+B(HCCE)
XHD=A+B(HCCE)
XHP=A+B(HCCE)
XHS=A+B(HCCE)

Hypothesis:
There is a direct relationship between HCCE and HC sector Prices: B>0 ;Tstat > 2

Table 1 Regression Results

		Linear		
Time Period	Dependent Variable	B	Tstat	Rsquared
2004-2014	XLV	0.027	6.339	0.489
2011-2014	XHE	0.105	7.327	0.891
2006-2014	XBI	0.140	9.355	0.849
2006-2014	XPH	0.100	10.115	0.86955
2011-2014	XHS	0.222	17.870	0.982

Table 2 Logarithmic Regresions Results

Time Period	Dependent Variable	B	Tstat	Rsquared
2004-2014	XLV	0.010682	5.707758	0.436835
2011-2014	XHE	0.003984	7.113735	0.783299
2006-2014	XBI	0.002973	8.460272	0.677958
2006-2014	XPH	0.004356	9.111437	0.715562
2011-2014	XHS	0.002282	16.92373	0.959787

Conclusions:
- Linear Models B>0 and Tstat>2
- Log Linear Models B>0 and Tstat>2
- XHS Best Linear and Log Linear Relationship, Rsquared>.95