Fund of Funds

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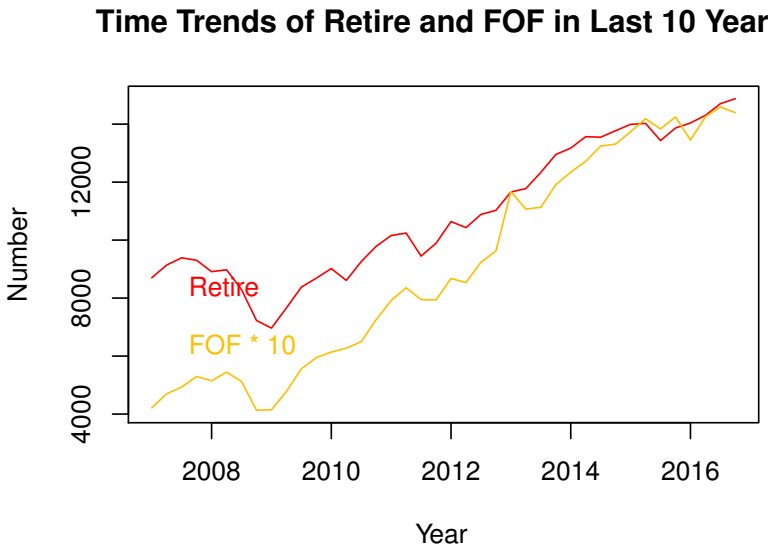
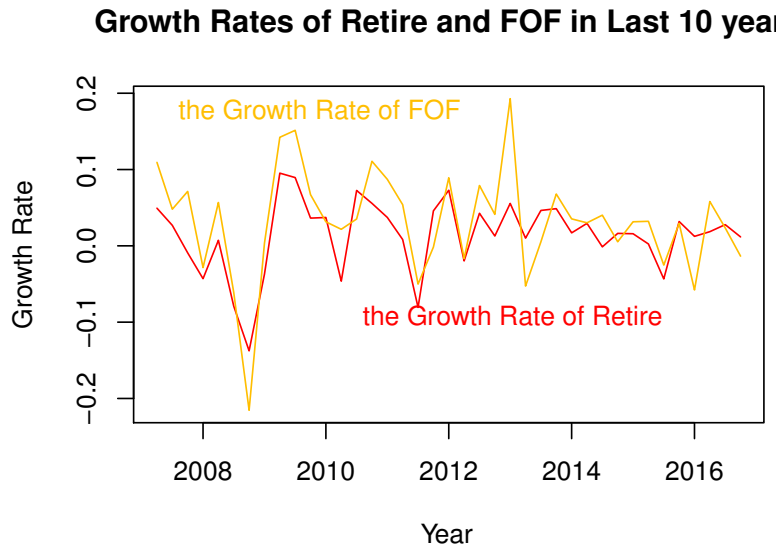
May 29, 2017

- In this part, we would explore the relationship between the fund market and the retirement market.
- The Fund of Funds is favoured by risk averter, especially for those who have retired.
- There might be cointegration relationships bewteen the two markets.





Unit Root Test

3 tests are employed here: ADF-Test, KPSS-Test, and PP-Test (Phillips-Perron Test).

Unit Root Test of Retire

Test Method	Statistics	10pct	5pct	1pct
ADF	1.64	-1.61	-1.95	-2.62
KPSS	1.01	0.35	0.46	0.74
PP	0.23	*	0.26	*

Unit Root Test of the Difference of Retire

Test Method	Statistics	10pct	5pct	1pct
ADF	-2.31	-1.61	-1.95	-2.62
KPSS	0.18	0.35	0.46	0.74
PP	1.55	*	0.26	*

Unit Root Test of FOF

Test Method	Statistics	10pct	5pct	1pct
ADF	2.53	-1.61	-1.95	-2.62
KPSS	1.07	0.35	0.46	0.74
PP	-0.16	*	0.26	*

Unit Root Test

3 tests are employed here: ADF-Test, KPSS-Test, and PP-Test (Phillips-Perron Test).

TEST Method	ADF	KPSS	PP
FOF	2.53	1.07	-0.16
diff(FOF)	-3.40	0.11	40
Retire	1.64	1.01	0.23
diff(Retire)	-2.31	0.18	1.55
10pct	-1.61	0.35	*
5pct	-1.95	0.46	0.26
1pct	-2.62	0.74	*

Cointegration Relationship One

First, estimate relationship between FOF and Retire.
$FOF_t = \alpha + \beta * Retire_t + \mu_t$

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Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) -7.552e+02  5.632e+01  -13.41 5.51e-16 ***
retire       1.524e-01  5.042e-03   30.22  < 2e-16 ***
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Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 74.18 on 38 degrees of freedom
Multiple R-squared:  0.9601,    Adjusted R-squared:  0.959
F-statistic: 913.5 on 1 and 38 DF,  p-value: < 2.2e-16
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Next, do unit root test on μ_t. The results show that μ_t is white noise sequence. So two $I(1)$ processes combines to one $I(0)$ process. It indicates the cointegration relationship between FOF and Retire. And the cointegration vector is $(1, -0.15)$.

Error Correction Model One

Cointegration Relationship Two

Error Correction Model Two

Cointegration Relationship Three

Error Correction Model Three